INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE DEVELOPMENT -2022
SOUVENIR & REPORT
ON
SEPTEMBER 9th & 10th 2022

SPONSORED BY

सत्यमेव जयते

सूक्ष्म, लघु और मध्यम उधम मंत्रालय

MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES, GOVT. OF INDIA
NEW DELHI.

AT
TAJMAHAL HOTEL (3RD FLOOR)
SECUNDERABD, HYDERABAD - 500 003.
TELANGANA - INDIA.

Organised by
Mr. BODA NAGESHWARA RAO
PRESDIENT
MULTIPURPOSE AWARENESS SOCIETY (MAS),
HYDERABAD TELANGANA STATE.

ACKNOWLEDGMENT

MULTIPURPOSE AWARENESS SOCIETY, HYDERABAD TELANGANA STATE expresses our sincere gratitude to Ministry of Micro, Small and Medium Enterprises Govt. of India, New Delhi for kind help bestowed in publishing to International conference souveir.

I acknowledge each and every one, who have contributed their research outcomes to the ICAI & SD - 2022 conference souvenir and made this conference success. I thank to Ministry of Micro, Small and Medium Enterprises for their support for organizing the International Conference - 2022. I tank all the speakers, foreign speakers, industry employees & management, industrial associations, ngo's, educational institutions and organizing committee member, research scholars and for presentation their papers on AI and Sustainability.

Yours Sincerely

B. NAGESWARA RAO
CONFERENCE CONVENER
ICAI & SD -2022

Table of Contents

INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE DEVELOPMENT-2022
SEPTEMBER 9TH & 10th 2022
HYDERABAD TELANGANA STATE INDIA

REPORT

An International Conference on Artificial Intelligence for sustainable Development-2022 (9th -10th September,2022), Sponsored by Ministry of Micro, Small and Medium Enterprises(MSME), New Delhi Chaired by Mr.Boda Nageswara Rao, President, Multipurpose Awareness Society(MAS), was started at Hotel TajMahal, Hyderabad. Mr. Siva Prasad, Additional Director, MSME attended as Special Guest. The Conference was inaugurated with Lightening Lamp from all the keynote speakers from India and other countries like Taiwan, Canada, Bhutan and Nepal. In the inaugural words Mr.Boda Nageswara Rao spoke about the importance of the conference and briefed about the details of the conference. He added that this is the second International Conference of its kind we are conducting in association with MSME. He also welcomed different dignitaries and participants from various sectors. Ms. Meena Jha, Faculty of Bio-Technology, Lincoln University, Malaysia gave welcome note on this occasion.

Key note Foreign Speakers from Canada, Bhutan, Taiwan and Nepal are participated and presented their presentation on Artificial Intelligence for sustainable development, industrial automation and AI, robotic and block chain technology   and sustainable goals and save planet .

1. Mr.Jesse Arlen Smith, Canada, Global AI & data consultant, business leader, AI, Researcher, and international speaker on the ethical development and deployment of AI

2. Dr. Chin-tsan wang (from delhi) director of science and technology, ministry of science and technology (most), taiwan

3. Dr.Jackson dukpa Bhutan

4. Mr.k.p.bhusal speaker sustainable development, Nepal

5. Dr.Pao-Ann hsiung Professor, National Chung Cheng University (CCU) Taiwan.
   Director, Smart living Technology Research Centre National Chung Cheng University, Taiwan

6. Dr. Ren-song ko associate professor, department of computer science and Information technology, National Chung Cheng University, Taiwan

7. Ganges Reddy, CEO, Blue Drop Environ Pvt Limited has participated.

The first key note session was addressed by Mr. Jesse Arlen Smith, Global AI and Data Consultant, Business Leader, AI researcher and Speaker from Ethical Development and Development of AI, Canada. He spoke about understanding the ethical outcomes for operational zing principles in AI Development with the help of real time use cases. The next session was addressed by Mr. Ch. Srinvasa Rao, CEO, AI Robo Hub Consulting Services Pvt Ltd, Hyderabad, India. He discussed about the automation ECO systems like RPA, AI and ML. The later address was by PAO-ANN-HSIUNG, Dean, Information Technology, Director, Taiwan-India Joint Research center of Artificial Intelligence, Director, research Centre on Artificial Intelligence &Sustainability, Professor, Department of Computer Science and Information Engineering, National Chung Cheng University, Chiayi Taiwan on trustworthy artificial Intelligence for sustainable smart city development. Before Lunch the session was regarding Artificial Intelligence in the field of Pharma and Health Care System which was addressed by Dr. Kumara Swamy Gandla, Professor & Head, Department of Pharmaceutical analysis , Chaitanya(Deemed to be) University, Hanumakonda, Warangal, Telangana.

The post lunch session was handled by Mr. K.P. Bhusal, Speaker, Sustainable Development, and Nepal. He drew the attention of audience towards the global pollution problems with an example of the great pacific patch and emphasized on the responsibility of the people in the sustainable developments in different fields. The following session was of Prof. Rajesh Kumar, Chairman& Principal, Department of Physical Education, Osmania University, Hyderabad, India, where he addressed the gathering on the importance of Technology in Sports and Games with real time examples.

The conference proceedings were conducted by Ms.EmceeHarshadaKasat, in a diligent and attractive manner. The Conference will be continued till 10th September 2022.

Day -2 Report (10.09.2022) of conference started with the welcome note of Ms. Swetha. The First Session of the day was addressed by Dr. BonthuKotaiah, Senior Assistant Professor, Department of Computer Science and Information Technology, Maulana Azad National Urdu University, Hyderabad. He discussed the significance of Artificial intelligence method like Nuero-Fuzzy to assess the software reliability. The later presentation by Dr.RohitSarawath , Dean, Pharmacy & Research , Sunrise University about the role of AI in protecting Intellectual property rights.The next session is handled by the International Speaker from Bhutan Dr. Jackson Dukpa who is the founder and president of Global Village Connections(GVC) about the importance of AI in the world of ICT.Dr. Y. P. Singh, Director, S(PG)ITM, Rewari delivered the importance of LIFI technology.Dr. Humera Fathima, Associate Professor, School of Management, Osmania University had discussed about the Artificial Intelligence for Sustainable Business Management.The Importance of Block Chain Technology in the world of Internet of Things was well explained by Dr. Kiranmayi, Associate Professor from Malla Reddy College, Hyderabad.Nature Inspired Computation and Swarm Intelligence was the topic covered by Dr. Ramakanta Mohanty from SVIT College, Telangana.

Ms. Meena jha From Lincoln University, Malaysia, presented about Sustainable Development using AI in an attractive manner.

The convenor of the conference Mr.B.Nageswara Rao congratulated everyone for being here and making this conference a grand Success.

MULTIPURPOSE AWARENESS SOCIETY

ABOUT THE ORGANISATION

MULTIPURPOSE AWARENESS SOCIETY (MAS) is a national institution non governmental and civil society organization established in the year 2011 and engaged in sustainable development programmes and community welfare activities. The society is active in spreading awareness on various topics i.e., environment, health, traffic control, entrepreneurship, science and acritical intelligence and Industrial Safety programs in rural and urban of Telangana state.

MISSION:

➡ Our mission is social equality and welfare of the people. A healthy, Wealthy and educated society.

VISION:

➡ Our vision is to motivate and help people in various sustainable socio-economic developments.

OBJECTIVES OF SOCIETY

➡ Environmental Issues

➡ Health Awareness Programs

➡ Disaster Management

➡ Training & Entrepreneurship Development

➡ Energy, Environment & Climate Change

➡ Water, Sanitation & Sustainable Development Goals

➡ Biodiversity & Wildlife

➡ Agriculture Food & Nutrition

➡ Ai Robots And Computers

➡ Traffic & Fire Safety

➡ Science & Innovations

AREA OF ACTIVITIES

➡ Environmental Protection & Awareness.

➡ Child labour Eradication

➡ Traffic Control Awareness

➡ Health Care

➡ Industrial Safety

➡ Mini projects (AI, Robots and science)

➡ Self-Employment awareness

WHERE WE ARE WORK

➡ Junior, Degree, Dental Medical & Engineering Colleges

➡ Community Centres

➡ Municipalities

➡ Industries and rural areas

➡ School & Public Places.

OUR PARTICIPANTS

➡ School, College Students

➡ Labour Worker

➡ Business people

➡ Industrial Entrepreneurs

➡ Scientists

➡ Youths

➡ Public &Private Employees

➡ NCC & NSS Students.

➡ Volunteers

HOW WE ARE WORK:

➡ Posters / Slides

➡ Journals / Audio &Videos (CD's)

➡ Pamphlets / Books / Workshops /Seminars

➡ Meeting / Conference / TV Channels / Lectures / Training

ORGANIZATION MEMBERSHIP:

➡ Vigyan Prasar Science Clubs

➡ Indian Chamber Of Non Government Organisation

➡ Forum For Clean Hussain Sagar

HIGHLIGHTS OF OUR WORK DURING 2011-2020

➡ 5000 trees planted in Industries, Schools and Communities in Greater Hyderabad.

➡ 200 unemployed youth to be benefited through self-income generation training programs

➡ 504 different programs were conducted in schools, colleges and industries.

➡ Participated and exhibited in National and International, meetings conducted by government and other organizations

➡ Published articles in Telugu Daily newspapers and monthly magazines on Environment, Water, forest and Animals Protection

➡ Celebrated National and International Days like water, Bio diversity, Ozone, Earth and Science days

➡ Prepared and developed posters on Eco-friendly Ganesh Chathurdhi, Traffic awareness and nature

➡ Conducted 120 school awareness programs in Schools on Artificial Intelligence based robots in Komaram Bheem Asifabad district in Telangana State sponsered by Department of Science & Technology, Govt of India.

➡ Conducted awareness on personal protection equipment and distributed masks to migrants and public during the covid-19 pandemic situation.

➡ Prepared radio jingles on Health and broadcasted through All India Radio Programs and social media.

➡ Conducted exclusive online covid survey relating to covid related queries. As per the survey we conducted 41% of respondents agreed that Arogya setu app is able to spread awareness amongst the people. Maintaining free mini library at Society Office.

AWARDS RECIVED FROM 2011-2020.

➡ Awarded Green Leaf Award - 2011.

➡ Awarded Best Seva Ratna Awards 2013 & 2016.

➡ Awarded Telugu & Telangana Book of Records - 2016.

➡ Awarded Dr. A. P. J. Abdul Kalam Puraskar - 2016.

➡ Awarded Vivekananda Excellence Award - 2017.

➡ Awarded Dr. B. R. Ambedkar National Youth Award - 2017.

➡ Awarded Best Citizens of Telangana Award - 2017.

➡ Awarded Hyderabad NGO's Leadership Awards - 2017.

➡ Awarded Telangana State Seva Ratna Award - 2018.

➡ Awarded Jyothi Rao Phule Awards - 2018.

➡ Awarded CTI Excellence Award - 2019.

➡ Awarded Certification of Appreciation For The Covid-19 Warrior.

CTI Excellence Award - 2019 Received from Department of Language and Culture Govt of Telangana

Artificial Intelligence based Robots Demonstrated to Schools Students

Artificial Intelligence based Robots Demonstrated to Schools Students

Awarded Telugu & Telangana Book of Records - 2016.

President Multipurpose Awareness Society with Members

Awarded Telangana State Seva Ratna Award - 2018

Fruits Distributed To Senior Citizens In Old Age Homes At Suraram

Mini Library At Society Office

Tree Sampling Photos

ABOUT THE INTERNATIONAL CONFERENCE

Multipurpose Awareness Society ,Hyderabad is organizing an International Conference on ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE DEVELOPMENT -2022 Supported by Ministry of Micro, Small & Medium Enterprises, Govt of India from 9th &10th September ,2022 At Taj Mahal Hotel Secunderabad Hyderabad.

International conference on Sustainable Development and artificial intelligence (AI) will bring together technology decision makers, supply chain experts and other key stakeholders from Computer Science, Information Technology and Business Industry to address and determine the artificial intelligence for sustainable development.

The International Conference would focus on the role of artificial intelligence for sustainable business management and other areas of sustainable development Goals. The Speakers from various countries debate and present on finding effective and sustainable development of the Industry. The AI and SDGs Leaders would also deliberate around the technology, trends, government policies, innovation and Sustainability.

The conference will provide its participants with opportunities to gain a better understanding of the major challenges of utilizing AI for the societal good. A research agenda to exchange, discuss ideas related to the design and application of Sustainable AI.

Sustainable development can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability is the balance between the environment, equity, and economy. Sustainable development requires an integrated approach that takes into consideration environmental concerns along with economic development.

The objective of this conference is to bring all the leading professionals, engineers and academic scientists' researchers and Industrial sector, small & medium sized enterprises consultancy organization, Educational Institutions and officials of State & Central Government world wide working in the field of Artificial Intelligence to one platform to interact and participate in the deliberations. To share and deliberate on the best practices, strategies and new advance models developed in dealing with artificial intelligence for sustainable development Goals and sustainable Business Management.

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving. According to a study published in Nature, AI could help achieve 79 % of the Sustainable Development Goals (SDGs). AI technology could become a key tool for facilitating a circular economy and building smart cities that use their resources efficiently.

THEMES /TOPICS:

- Industrial Automation
- Business Intelligence
- Virtual Employees
- Sustainable Design and Planning with AI
- Sustainable Business Management
- Environmental Sustainability
- Advance Technologies (AI, BI & Robots) for Sustainable Development
- AI applications for the social good and towards sustainable development goals
- Ethics of Artificial Intelligence
- Sustainable AI for Smart Cities
- Policy recommendations for Sustainable Development.

SUSTAINABLE DEVELOPMENT GOALS

- Goal 1. No Poverty
- Goal 2. Zero Hunger
- Goal 3. Good health and well being
- Goal 4. Quality Education
- Goal 5. Gender Equality
- Goal 6. Clean water and sanitation
- Goal 7. Affordable and clean energy
- Goal 8. Decent work and economic growth
- Goal 9. Industry, Innovation and infrastructure
- Goal 10. Reduced inequality
- Goal 11. Sustainable Cities and communities
- Goal 12. Responsible consumption and production
- Goal 13. Climate Action
- Goal 14. Life Below water
- Goal 15. Life on Land
- Goal 16. Peace and Justice strong institutions
- Goal 17. Partnerships to achieve the goal

WHO CAN PARTICIPATE?

The International conference has been designed for

- Business Owners /MDs.
- Software Developers /CSE/EC.
- NGO s Leaders /Volunteers.
- Industry Employees.
- IT Employees.
- Govt Officials State and Central.
- Environmentalist
- Financial Managers and Decision Makers.
- Colleges Students /Youths.
- PG and PhD Scholars.
- Technical Research Scholars.
- Private Employees.
- Engineering Colleges Principal & Professors.
- Specialist in AI.
- Specialist in Sustainable Development.
- Specialist in SDGs.
- Technology Experts.
- Research and Development Managers.
- University Experts /Speakers.
- Foreign Speakers Expert in AI & SDGs.
- General Managers/Vice President.
- IT analysts /Teachers. • Computers programmers.
- Entrepreneurs and Business Makers.
- Cyber Advisors & Green planning maker.
- Business Law Makers.
- Incubators /Data Analysts/Data Scientist Industrial Automation
- Business Intelligence
- Virtual Employees
- Sustainable Design and Planning with AI
- Sustainable Business Management
- Environmental Sustainability
- Advance Technologies (AI, BI & Robots) for Sustainable Development
- AI applications for the social good and towards sustainable development goals
- Ethics of Artificial Intelligence
- Sustainable AI for Smart Cities
- Policy Recommendations for Sustainable Development.

REGISTRATION FREE OF COST

Registration link: https://forms.gle/HH8VBRXBGqft9EKt9
Mobile no.91-8985758649.   www.masindia.org

AI for Sustainable Development

Mr. K. P. Bhusal
Speaker Sustainable
Development,
Nepal

As we know that artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions and sustainable development on the other hand refers to meeting the needs of the present without compromising the ability of future generations to meet their needs. The emergence of artificial intelligence (AI) has created lots of debates worldwide – whether this could herald a utopian future where humanity co-exists harmoniously with machines, or portend a dystopian world filled with conflict, poverty and suffering. More specifically, would AI accelerate our progress on the United Nations (UN) Sustainable Development Goals (SDGs) or bring us further down the path toward greater economic uncertainty, environmental collapse, and social upheaval? So, analyzing the impacts of AI on all 17 goals and 169 targets recognized in the 2030 Agenda for Sustainable Development and finding a harmonious way of co-existence has become a critical issue for today's world.

Artificial intelligence impacts UN Sustainable Development Goals, both positively and negatively. The goal is to promote the positive use of AI for Sustainable Development, and to investigate on the negative impacts. "According to a study published in Nature, AI could help achieve 79 % of the Sustainable Development Goals (SDGs). AI can enable the accomplishment of 134 targets across all the goals, but it may also inhibit 59 targets. With 17 sustainable development goals (SDGs), it aims for an economic and societal transformation, integrating all three pillars of sustainable development – economic, social and environmental.

Artificial Intelligence can contribute to sustainable development in a number of ways. AI can help meet the SDGs because it augments, rather than replaces, our own intelligence and capabilities. Any actions humans take to achieve the SDGs can be augmented with artificial intelligence. Technology like AI will help us build more efficiently, use resources sustainably and reduce and manage the waste we generate more effectively. This technology could become a key tool for facilitating a circular economy and building smart cities that use their resources efficiently. Another example of AI's contribution to sustainability is traffic management. Applying Artificial Intelligence in urban mobility allows traffic jams to be predicted and alternative routes to be suggested. AI can also help enhance the efficiency of renewable energies. In agriculture, for example, it is used to make irrigation and fertilization more efficient. Thanks to humidity, temperature and fertilization sensors. Artificial Intelligence is a key element in terms of achieving these goals and minimizing problems that may affect sustainable development.

Trustworthy Artificial Intelligence for Sustainable Smart City Development

Pao-Ann Hsiung
Professor, Department of Computer Science and Information Engineering,
Director, Taiwan-India Joint Research Center on AI,
Director, Research Center on AI and Sustainability,
National Chung Cheng University, Chiayi, TAIWAN
pahsiung@gmail.com

ABSTRACT

The development of sustainable smart city applications such as environment protection and traffic management can often be realized more precisely based on data-oriented technology such as deep learning or machine learning. Artificial intelligence has pervaded all areas of applications in a smart city including traffic, environment, tourism, education and so on. Nevertheless, there are still several challenges that need to be resolved, including technology related, stakeholder related and automation related. For technology related issues, first of all, how the AI-based applications can be made more trustworthy? Second, how sustainability can be achieved via the application of trustworthy AI to smart city applications? Third, how to bridge the gap between automated AI technology, societal expectations, and the governing law. For stakeholder related issues: How to achieve a balanced and targeted tradeoff among the different stakeholders such as the government, the public, and the information systems that implement the sustainable smart city applications? To partially address the above issues of trustworthy AI applied to sustainable smart city applications, this talk will present state-of-the-art and proposed solutions. For example, automatic checking for fairness (bias), explanations for AI results, human-in-the-loop control of AI applications, human-AI team collaborations, robustness (safety) checking of AI models and data, and sustainability quantitative analysis based on U4SSC key point indicators are some of the possible solutions to the above challenges. For automation related issues: Automatic deployment of AI models and streaming of incoming data are also engineering challenges faced in smart city applications, we also propose the use of MLOps techniques such Kubernetes for container orchestration, Kubeflow for pipeline management, and KServe for automatic deployment of AI models and trustworthy AI checking.

ARTIFICIAL INTELLIGENCE IN FOSTERING GOOD HEALTH & WELLNESS

I) Meena Jha

Department of Biotechnology,

Faculty of Science, Lincoln University College,

Selangor, Malaysia. [MJ]

I) meenajha@vvdav.info

ABSTRACT

Health is the greatest asset to sustain happy life which involves physical and emotional fitness, no aches and pains. Intake of balanced diet, regular exercise, physical activity, yoga-meditations, spiritual & emotional well-being, beautiful relationships, are all secrets to health and wellness. To maintain good health, various apps and technology applications encourages individuals towards healthier behaviour by proactively management of healthy lifestyle. To meet the requirements of today's world, Artificial Intelligence (AI) and machine learning solutions are vastly and dynamically evolving in the health organizations. AI is tremendously helping towards transforming the lives of medical research scholars and health care workers. These AI systems and machine algorithms are easily accessible, economical, reliable, adaptable and are implementable which are helping in sustaining and promoting wellness. Artificial Intelligence is the branch of computer science which deals with utilising in human intelligence in machines. It increases the efficiency of healthcare professionals to better understand and achieve the respective health goals. These machine learnings are basically dependent on relying automating and analysing statistics to use complex algorithms to find specific patterns. It helps to predict, create, analyse various workouts and exercises for different users based on fitness data, available equipment etc. Example, AI may diagnose underdeveloped muscles and it helps how to adjust workouts based on available resources. AI machine learning provides successful fitness solutions. It is very valuable for providing time- intensive tasks and important consideration for client and customer care services. This research study is based on applications and usages of Artificial Intelligence in human welfare, health and fitness.

However, we cannot overlook the certain limitations of these man-made, artificial software framework which have technical, software and hardware issues. To avoid human error is important task for human health services than any other industry.

Keywords: Machine Learning; Health Organizations; Software Framework; Treatment Techniques.

Estimation of Software Development Effort by using Machine Learning Techniques

Dr.Ramakanta Mohanty, Krishna Mouli, Hayman, Mambiri, Dinesh, Deepankar Singh

1Methodist College of Engineering and Technology,
2,3,4 Swami Vivekananda Institute of Technology

ABSTRACT

The computer software industry is perhaps one of the fastest growing industries in the world today. With the increasing cost of software development, it is apparent that effective techniques for estimating software costs are essential in order to control the costs and make software more competitive. Because of the highly dynamic nature of the Software development, it becomes more and more difficult to get a correct software effort estimation. A number of algorithmic techniques have been developed and used for software cost estimation. However, calculations from several of such techniques indicate that estimates of development effort and cost differ considerably and hence may pose problems to software managers in committing resources and controlling costs. Software cost estimation is the process of predicting the effort required to develop a software system. Many estimation models have been proposed over the last 30 years. These estimation models are implemented in various frameworks for accurately predicting software effort.

In this paper, we implement a similar framework using the concept of neural networks, to be precise we use the Graphical Neural Network concept to predict the software effort. We collected the datasets i.e. ISBSG and IBM datasets from the literature to predict the software effort. The predicted accuracy values are compared with Convolutional neural networks and artificial neural networks and GNN. We found that GNN out performed better accuracy compared other techniques. Various software metrics are used to predict the overall software effort and for further development of the project.

Keywords: Software efforts, Graph Neural Networks, Convolution Neural Networks

Web Service Classification Using Machine Learning

Dr. Ramakanta Mohanty 1, Angirekula Deepika2, Kirti Shreyaa3,

K Mary Akhila Reddy4, Mounika Alwala5

1Methodist College of Engineering and Technology,

2,3,4,5 Swami Vivekananda Institute of Technology

ABSTRACT

In the fastidious ever-growing world of businesses when the constant exchange of web services takes place, it is important for the buyer and seller to understand where their web service stands. A web service is a set of open protocols and standards that allow data to be exchanged between different applications or systems. Web services can be used by software programs written in a variety of programming languages and running on a variety of platforms to exchange data via computer networks such as the Internet in a similar way to inter-process communication on a single computer.

Web Services allow businesses to adapt rapidly to changes in the business environment and the needs of different customers. The rapid introduction of new web services into a dynamic business environment can adversely affect the service quality and user satisfaction. Web services are made of software components for expressing the application information, communicating messages and for interacting with open XML and Internet technologies. Web services are software applications accessible on the web, used for machine to machine interaction using Uniform Resource Identifier (URI) on distributed internet environment. With the explosion of Web Services accessible on the web, automatic categorization of the services to organize the data becomes essential.

We collected the QWS dataset version II from literature which is not having class level. We normalized the dataset and employ stratified cross validation to make different fold systems. To make the different web services into different class levels, we employ 4 different clustering algorithm viz. K-means, Fuzzy C-means, Density based clustering and Hierarchical clustering algorithm to cluster different web services into different clusters. To test the different class level simulated by clustering algorithm, we again employed machine learning algorithm i.e. Back Propagation Neural Network (BPNN), Genetic Programming (GP), Random Forest and Convolution Neural Network (CNN) to test the efficacy of the model. From our Experimental results, we observed that C-Fuzzy means clustering provided the best clustering level compared to other techniques. The average accuracy of 100% provided by Genetic programming and Convolution Neural Networks.

This is the significance of our study

Keyword: Fuzzy C-means, K-means, Hierarchical, Density based, Genetic Programming, Convolution Neural Network, random Forest

Applications of face detection and gesture recognition on IOT devices

Dr.Ramakanta Mohanty, Mohammed Maheen Khan, Dinesh Raju,
Harinandan Akanti, M Hrisheek Teja

1Methodist College of Engineering and Technology,
2,3,4 Swami Vivekananda Institute of Technology

ABSTRACT

An application used for helping people to serve food automatically with help of IoT technology and Machine Learning together with AI. In our proposed Idea, a locomotive robot that can serve food, fitted with a camera to detect the hand gesture for understanding the user request and then acknowledge the user by recognizing the face of the user and only then serving the food for him. Our aim is to produce a model that can recognize hand gestures and signs. We will train a model for the purpose of sign language conversion, a simple gesture recognizing model. This project can be implemented in several ways such as KNN, Logistic Regression, Naïve Bayes Classification, and Support vector machine and can be implemented with CNN. The method we have chosen is CNN as it gives better accuracy compared to the rest of the methods. A computer program is developed using python language which is used to train the model based on the CNN algorithm.

Over the last ten years, face recognition has become a popular area of research in computer vision and one of the most successful applications of image analysis and understanding. Numerous approaches for face detection and recognition have been proposed in the last decade. Most face detection methods are based on local facial feature detection and classification using statistical and geometric models of the human face. Low-level analysis first deals with the segmentation of visual features using image properties such as edges, intensity, color, motion, or generalized measures. Other approaches are based on template matching where several correlation templates are used to detect local sub-features, considered as rigid in appearance or deformable. We propose a novel image-based approach that is designed to precisely detect face patterns of variable size and appearance.

Keywords: Support Vector Machine, Baye's Theorem, Convolution Neural Network, Internet of Things

Budgets and Expenses Tracking System
by using web based application

Dr. Ramakanta Mohanty, V.Shiva Reddy, Mayank Patel, T.Sai Pawan Singh, O.Rohith

1Methodist College of Engineering and Technology,
2,3,4 Swami Vivekananda Institute of Technology

ABSTRACT

I In today's busy and expensive life people are eminently haste to make money. But at the end of the month they broke off. As they are unknowingly spending money on undersized things. There many small business enterprises who are concerned about financial control and maintenance of their income and expenses of monthly and annual basis. So, we have come over with the idea to track their earnings and save the money, which can be well-used when it's be in need of it.

The Budgets and Expense Tracking System (B&ETS) aims to help everyone who are planning to know their income & expenses and save from it. B&ETS is a simple user-friendly web-based application which users can use in their mobile phones, PC's, Laptops or any devices which is connected to internet and update their daily, monthly and yearly expenses so that they are well known to their expenses.

The user can add their own categories for expense type like food, clothing, rent and bills where they have to enter the money that has been spent and also can add some information in additional information to specify the expense, and also add expense categories. User will be able to see pie chart of expense. Also, although this web app is focused on small business enterprises, new job holders, interns, and teenagers, everyone who wants to track their income and expenses and also they download income and expenses reports in PDF or CSV formats. The use can see item purchases on calendar of everyday. By using this web app, the users can easily track their income and expense from any at any time by using internet.

Keywords: Budget tracking systems, Web Development,

A Desktop App for Sign Language Recognition and Speech Output

Dr. Ramakanta Mohanty, Arfa Firdous, Ms K.Sruthi, Nallapu Ala, Medi Bhavathi

1Methodist College of Engineering and Technology,

2,3,4 Swami Vivekananda Institute of Technology

ABSTRACT

A Sign Language is one of the way to communicate with deaf people. In this work sets, included features and variation in the language with locality have been the major barriers which has led to little research being done in ISL. One should learn sign language to interact with them. Learning usually takes place in peer groups. There are very few study materials available for sign learning. Because of this, the process of learning sign language learning is a very difficult task. The initial stage of sign learning is Finger spelled sign learning and moreover, are used when no corresponding sign exists or signer is not aware of it. Most of the existing tools for sign language learning use external sensors which are costly.

Our paper aims at extending a step forward in this field by collecting a dataset and then use various Image feature extraction techniques to extract useful information which is then given as an input to supervised Deep Learning techniques. We employed the neural networks for understanding the real-time hand signs for the video camera frames and predict the English Alphabets of hand gestures or signs using a GUI interface.

Further, we also employed Re-current neural network and found that the simulated results obtained by us is having very high accuracies compared results available in the literature.

Keywords: Desktop app, Recurrent Neural Network, Deep Learning Neural Network

A web App for Movie Success Prediction

Dr. Ramakanta Mohanty, Bhargavi, Chandini Bandaru, S.Manidhar

1Methodist College of Engineering and Technology,
2,3,4 Swami Vivekananda Institute of Technology

ABSTRACT

Today, movies can be a good source of inspiration and amusement. An expanding area of analysis is the ability to anticipate any movie's level of popularity. Over the past 20 years, the global film business has expanded quickly. There is a substantial amount of movie-related information online. Every year, various movie genres are released. Others movies make us joyful, some are for fun and pleasure, some portray historical events, and some do much more. These are the kinds of movies that inspire and urge us to do new things in our lives. Any production company's primary goal is to increase revenue from a business standpoint and to establish its social acceptance from the viewpoint of the audience.

In this paper, we apply data mining technique and machine learning algorithms using python to predict the success and failure of movie based on several attributes. In order of doing this, we will develop a methodology on the basis of historical data to reduce certain level of uncertainty concerned to movie's future outcome. Some of the criteria in calculating movie success included revenue, actors, director, producer, story writer, movie release day, competing movie releases at the same time, music, release location and target audience. Since, movie making involves huge investment thus movie prediction plays a vital role in the movie industry. This model helps movie makers to modify the criteria of blockbusters. It also helps movie watchers to determine a blockbuster before purchasing a ticket. Each attribute has some criteria and on the basis of that weight age has been given and then prediction is made based on that. Here, we also analyses key factors for movie profitability. This paper also show the power of predictive and prescriptive data analytics for information systems to aid movie business decisions. This model also helps to find out the review of the new movie.

Keywords: Data Mining, Machine Learning, movies, prediction

Gesture Controlled System

Dr. Ramakanta Mohanty, Harppad Abhishek, Ankesh Abhishek , M.santhosh , Ravi Shankar Tarun

1Methodist College of Engineering and Technology,
2,3,4 Swami Vivekananda Institute of Technology

ABSTRACT

Today's world is a high technological world imagining life without computer is impossible. Now computer is an essential part of human's day-to-day life. Vision and gesture are the important approach for communication between human beings just in the way as keyboard and mouse play a role for interacting with computer. Numbers of effective techniques are available for interaction with computer and one of them is hand gesture technique. In that technique hand gesture is used as an input which replaces functionality of mouse and keyboard shortcut keys. Hand gesture is an attractive and faster technique.

We can control the actual keyboard and mouse functions or can create virtual keyboard and mouse using camera frames. We can control the whole computer or laptop functions with gestures only. The ability of computers to recognize hand gestures visually is essential for progress in human–computer interaction. Gesture recognition has applications ranging from sign language to medical assistance to virtual reality. However, gesture recognition is extremely challenging not only because of its diverse contexts, multiple interpretations, and spatio-temporal variations but also because of the complex non-rigid properties of the hand. We propose an interactive computer system which can operate without any physical keyboard and mouse. This system can be beneficial to everyone, especially to the paralyzed people who face difficulties to operate physical keyboard and mouse. We used computer vision so that user can type on virtual keyboard and can also navigate to mouse controlling system.

Keywords: Computer Vision, spatio temporal, Gesture recognition

Real time Drone Detection System using Advance Neutral Network Deep Learrning Algorithm

Dr. Ramakanta Mohanty, Navya, G.R Akash Kumar,
S.Harsha, Sri Renuka M.Kousalya

1Methodist College of Engineering and Technology,
2,3,4 Swami Vivekananda Institute of Technology

ABSTRACT

Drone businesses like DJI, Parrot, and 3DRobotics have been expanding quickly in recent years thanks to the ongoing development of associated technology. Additionally, drones have seen a rapid increase in application in both military and non-military settings due to their low cost and simple operation. The Federal Aviation Administration (FAA) estimates that 1.9 million drones were purchased in 2016 and that number might rise to 4.3 million in 2022. But along with their rapid development and extensive use come a number of unanticipated risks to things like privacy, personal safety, and public safety. Accidents brought on by drones being flown in violation of the law are happening increasingly frequently.

Commercial Unmanned aerial vehicle (UAV) industry, which is publicly known as drone, has seen a tremendous increase in last few years, making these devices highly accessible to public. This phenomenon has immediately raised security concerns due to fact that these devices can intentionally or unintentionally cause serious hazards. In order to protect critical locations, the academia and industry have proposed several solutions in recent years. Computer vision is extensively used to detect drones autonomously compared to other proposed solutions such as RADAR, acoustics and RF signal analysis thanks to its robustness. Among these computer vision- based approaches, we see the preference of deep learning algorithms thanks to their effectiveness. In this paper, we are presenting an autonomous drone detection system which uses a camera feed only. With this approach, we are able to build an efficient pipeline where the initial detection of small sized aerial intruders on the main image plane wit help of State-of-the-Art Neural Networks.

Keywords: Unmanned aerial vehicle, RF signals, Artificial Neural Network

A Machine Learning based Network Intrusion Detection and Analysis

Dr. J Manoranjini, Dr. Ramakanta Mohanty, Ellapu Keerthi,
A.Dhana laxmi, R.Nandini, G.Krishna Goud

2Methodist College of Engineering and Technology,
1,3,4 Swami Vivekananda Institute of Technology

ABSTRACT

An increase in cyber attacks has coincided with the exponential rise of computer networks and network applications around the world. To train prediction models on network-based intrusion detection, datasets like CSE-CIC-IDS2018 were developed. These datasets are intended to advance research on anomaly-based detection using various machine learning techniques rather than serving as repositories for signature-based detection systems. The most recent big data intrusion detection dataset that is openly accessible and covers a variety of attack methods is this one. This multi-class dataset has a class imbalance, with attack (anomalous) traffic making up about 17% of the occurrences. Our survey research yields several important conclusions. Where available, we found that the best performance scores for each study had unexpectedly high average scores, which may be the result of over fitting. Additionally, we discovered that the majority of the papers did not address class inequality, whose effects can skew the findings of a big data study.

Intrusion Detection System (IDS) defined as a Device or software application which monitors the network or system activities and finds if there is any malicious activity occur. Outstanding growth and usage of internet raises concerns about how to communicate and protect the digital information safely. In today's world hackers use different types of attacks for getting the valuable information. Many of the intrusion detection techniques, methods and algorithms help to detect those several attacks. The main objective of this paper is to evaluate different machine learning model to find the best suited one so that it can be added to the main stream platform.

Keywords: Cyber Attacks, Intrusion Detection systems, Machine Learning Algorithm

Application of Conjoint & Sentiment Analysis on Customer Review

Dr. Ramakanta Mohanty, Marreddy Ravi Kumar, Sanjana Cheruku,
Vasarla SaiVarshini, Bethu Shirishad

ABSTRACT

Over 23 million people travel on Indian railways every day on average. Many problems arise for travelers, who share their experiences on the RailMinIndia twitter account. Each day, this Twitter account receives about 15,000 tweets. The railway ministry does not have much time to study the reviews and respond to them. This project's primary goal is to quickly analyse the top concerns of train passengers based on the feedback.Here, we estimate the feature relevance without specifically asking the passengers for feedback. Pre-processing, NLP pipeline, Sentiment categorization, Assuring accuracy, and Conjoint analysis are the procedures needed to analyse the primary problems. The information is gathered from customer evaluations on railroad service. Tokenization, Stop Word Filtering, POS Tagging, Stemming, Lemmatization, and TF-IDF are the six phases that make up the NLP pipeline. The method of figuring out whether a piece of writing is positive, negative, or neutral is called sentiment analysis. To assure accuracy, SVM and Naive Bayes algorithms are applied to sentiment-classified data.Conjoint analysis is a statistical marketing research technique that enables companies to determine the attributes of their goods and services that customers value most. With human language data, it not only saves time but also produces results with more accuracy. It can be used in a variety of fields, such as product or service.
.

Air Pollution Analysis and prediction using NASA GEO satellite data and ML

Dr. Ramakanta Mohanty, Lavanya T, Divya. K., Spoorthi. T

ABSTRACT

Over the past few decades, air pollution has caused serious damage to public health.Therefore, making accurate predictions of PM2.5 is a crucial task. Due to the transportation of air pollutants among areas, the PM2.5 concentration is strongly spatiotemporal correlated. Over the past few decades, rapid economic growth worldwide has caused severe air pollution, which has elicited extensive global attention. PM2.5(particulate matter with a diameter less than 2.5 um), as an important component of airpollutants, is related to cardiopulmonary and other systemic diseases because it penetratesthe respiratory system. According to a recent World Health Organization (WHO) study,approximately 90% of people breathe air that does not comply with WHO Air QualityGuidelines, and about 3 million deaths worldwide are caused by outdoor air pollution in ayear.Considering the proven negative effect of air pollution, forecasting daily PM2.5concentration must be provided to control air pollution and combat health problems. Many studies have established unique approaches for PM2.5 prediction. We forecast the air quality of India by using machine learning to predict the air quality index of a given area. Air quality index of India is a standard measure used to indicate the pollutant (so2, no2, rspm, spm. etc.) levels over a period. We developed a model to predict the air quality index based on historical data of previous years and predicting over a particular upcoming year as a Gradient decent boosted multivariable regression problem. We improve the efficiency of the model by applying cost Estimation for our predictive Problem. Our model will be capable for successfully predicting the air quality index of a total county or any state or any bounded region provided with the historical data of pollutant concentration. In our model by implementing the proposed parameterreducingformulations, we achieved better performance than the standard regression models. Our model has 96% accuracy on predicting the current available dataset on predicting the air quality index of whole India, also we use AHP MCDM technique to find of order of preference by similarity to ideal solution.
.

Web App for Detection of Plant Disease and Solution Recommendation using Deep Learning

Dr. Ramakanta Mohanty, Y.Sandeep Kumar, K. Pranay Raj,
Yuktha Muttineni, S. Sai Sukanth

ABSTRACT

Diseases in plants cause major production and economic losses as well as reduction in bothquality and quantity of agricultural products. Now a day's plant diseases detection has receivedincreasing attention in monitoring large field of crops.Farmers experience great difficulties inswitching from one disease control policy to another. Thenaked eye observation of experts is thetraditional approach adopted in practice for detection andidentification of plant diseases. In this paper we review the need of simple plant leaves disease detection system that wouldfacilitate advancements in agriculture. Early information on crop health and disease detection canfacilitate the control of diseases through proper management strategies. This technique will improvesproductivity of crops.This paper also compares the benefits and limitations of these potentialmethods. It includesseveralstepsviz.Image acquisition,imagepre-pprocessingandneurallnetwork based classification.

Zoo animal security and safety project with deep learning algorithm trained on inception dataset with SSD method

Dr. Ramakanta Mohanty, M A Niveditha, Thakur Roshni Singh,U. Shiva Prasad, G. Vaishnavi

ABSTRACT

The zoo is a good place to visit and learn a lot about our nature. But we should keep in mind that the zoo is full of dangerous animals. Several times, many different accidents happen because of carelessness.This project will deploy a camera in the animal cage. The camera will send data to computer vision and machine learning algorithm to understand the various details of the present scenario like, whether the animal is inside the cage or not.We are using one of the most advanced algorithms called SSD (Single Shot multibox Detector) to detect the animals.

A Secure Website for Sending and Receiving Encrypted Message and Data using React Framework

Dr. Ramakanta Mohanty, M. Roopa Ascharya, Sejal B Lashiyal, Shashank Marati

ABSTRACT

Privacy is one of the biggest concern in current modern world. There are several readymade solutions available although none of them can be trusted because we keep hearing about the information being exploited by Hackers, Authorities etc. In this Project a Secure Website for Sending and Receiving Encrypted Message and Data using React Framework is proposed. The System will be use Edge / Node Encryption which will apply strong encryption to the data on the Client device itself without any interference with the server which will make sure complete security and privacy. Also the Data will be double encrypted at the time it reaches the server. This Dual Layered Encryption will assure complete security and also use of React Framework will make sure that most of the computation is being done on the Client Device which will allow the Main Server to easily handle huge number of Clients. Also, the System will be accessible by any Mobile or PC Devices using the secure credentials.

A Client will be allowed to send secure Data to multiple users and vice versa. The Whole system can be build and run in-house at any organization which will guarantee security.

A Website for Email sending for Blind people using Speech Recognition Technology

Dr. Ramakanta Mohanty, Syed siddiq, A. swathi, M Rakesh, Ravalika

ABSTRACT

The advancement in computer based accessible systems has opened up many avenues for the visually impaired across a wide majorityoftheglobe. Audio feedback based virtual environment like, the screen readers have helped blind people to access internet applications a 1arge section ofvisually impaired people in different countries, in particular, the Indian sub-continent could not benefit much from such systems. This was primarily due to the difference in the technology required to Indian languages compared to those corresponding to other popular languages of the world. In this paper, we descend the voicemail system architecture that can be used by a blind persontoaccess e-mails using efficiently. The contribution made by this research has enabled the blind people to send and receive voice-based e-mail messages in their native language with the help of a mobile device. Our proposed system GUI has been evaluated against the GUI of a traditional mail server. We found that our proposed architecture performs much better than that of the existing GUIS. In this project, we use voice to text and text to voice technique access for blindpeople.

Internet has become a widely used service in today's day to day life. Every person has the power to access the internet for different needs like gaining knowledge, information or for communication purpose. The main feature of internet in communication is the Email System.

r 0 us to use the emailing system, but it is very difficult for the Blind peopleto do thesame. Thereare many different screen readers which help themto read or compose their mails. This application helps them to perform the mail functions efficiently using voice commands.

A Web App to detect Fake Information and Posts

Dr. Ramakanta Mohanty, D.Pravalika, D.Sonia, G.Sri Chandana, Balvinder

ABSTRACT

Fake news is characterized as a made-up story with an intention to misdirect or mislead the population. In this project we propose the classification of fake news by utilizing Deep Learning structures. Gartner's research predicts that "By 2022, the vast majority in developing economies will devour all the more fake data than genuine data". The exponential increment underway and conveyance of fake news displays a prompt requirement for consequently labelling and recognizing such fake news stories. Be that as it may, computerized detection of fake news is a hard assignment to achieve as it requires the model to comprehend subtleties in normal language. Also, larger part of the current fake news identification models treat the current issue as a binary classification task, which limits model's capacity to see how related or random the revealed news is when contrasted with the genuine news. To address these issues, we present ANN base system to precisely anticipate the fake news.

In this project, we aim to perform binary classification of various news articles available online with the help of concepts pertaining to Artificial Intelligence, Natural Language Processing and Machine Learning. We aim to provide the user with the ability to classify the news as fake or real and also check the authenticity of the website publishing the news.

Online e-commerce Website For Selling Books Using React Framework

Dr. Ramakanta Mohanty, M.Tharun, P.Tarun, Sanjay, S.Varun

ABSTRACT

The Internet by far plays a major role in people's life. It has drastically improved thequality of life and the standard of living of so many people. It has widened its branches intomany different levels and areas. The e-commerce industry is one such branch which has comeinto spotlight in the recent years. The online bookstore system has eased the life of so manybook lovers by making it easy for them to purchase books online. It is not always feasible toaccess a traditional bookstore, it is limited by its operation time, availability of a particularbook, its location and most importantly its capacity and the space required to store numerousbooks. Such drawbacks have led to the evolution of e-commerce industries related tobookstores. Our project is one such simple e-commerce website which houses various booksof different categories for a consumer to purchase online. Websites has become a core art ofour lives. We use several websites on daily basis which makes our lives easier and advance.The engines powering these complex websites are very crucial. This paper deals withdeveloping an e-commerce website for Online Book Sale. It provides the user with a catalogof different books available for purchase in the store. In order to facilitate online purchase a shopping cart is provided to the user. The advancements in technology which has made theweb development different and away from general websites is frameworks like React. Reactallows us to do complex data processing and operations at Client side, which makes this quickand reduces load on the backend server. This becomes crucial when a website is handling thousands or millions of customers. Wepropose making of website using React Framework which will allow Book Sellers to makeaccount on the platform. This will enable sellers to sell the books and also with a flexibility tochange prices whenever the seller wants to. A Consumer and login on the website and gothrough the books. He will be able to add that in Cart and Purchase it. All the transactions willbe notified to respective Seller and Consumers via email. Here customer can also sell the booksto the other customer which he bought using the website

Advance Drivers' Drowsiness Detection and Warning Systems for Critical Infrastructures

Dr. Ramakanta Mohanty, Sura Thirupathi Reddy,
V.Pavan siva Kumar,P.Shanmukh, B.Sairamakrishna Reddy

ABSTRACT

Driver fatigue is a significant factor in a large number of vehicle accidents. The development of technologies for detecting drowsiness at the wheel is a majorchallenge in the field of accident avoidance systems. Because of the hazard thatdrowsiness presents on the road, methods need to be developed for counteracting itsaffects.The main aim of this paper is to develop a drowsiness detection system by monitoringthe eyes; it is believed that the symptoms of driver fatigue can be detected earlyenough to avoid a car accident. Detection of fatigue involves the observation of eyemovements and blink patterns.The analysis of face images is a popular research areawith applications such as face recognition. This project is focused on the localizationof the eyes, which involves looking at the entire image of the eye, and determining theposition of the eyes, by an image-processing algorithm using python programming.

Criminal Identification And Missing Children Identification Using Face Recognition

Dr.Ramakanta Mohanty, Y.Sai keerthi, J.Sneha Reddy, P.Radha, B.Rishitha

ABSTRACT

Crimes are at rise and becoming difficult for police to identify and rescue the Missing Persons. Our Proposed System will use Face Recognition Algorithms to detect Missing Persons. Face Recognition begins with extracting the coordinates of features such as width of mouth, width of eyes, pupil, and compare the result with the measurements stored in the database and return the closest record (facial metrics). Nowadays, there are a lot offace recognition techniques and algorithms found and developed around the world. Facial recognition becomes an interesting research topic.

It is proven by numerous numbers of published papers related with facial recognition including facial feature extraction, facial algorithm improvements, and facial recognition implementations. We will be using advance algorithms like LBPH for our system and also compare to other older algorithms to prove higher accuracy of our system. Face recognition is a biometric based technology that maps an individual's facial features mathematically and stores the data as a face print. It employs Machine Learning on the image and generates a feature vector which maps an object with array of numbers. This technology is used by organizations such as Google and Facebook to create a digital profile for its users. This paper proposes to use this technology for identifying criminals who are on the run from their previous records. An NCRB (National Crime Records Bureau) report shows that 70% of crimes are repeatedly committed by the same criminals. These criminals can be identified by the face recognition from an image or video frame which is captured by the cameras which are installed in various locations and it can also be used for identifying missing children.

Career Counseling Website for Student Guidance using React Framework

Dr. Ramakanta Mohanty,Sunil Manapathi, Sucharitha Chenna,
Praeeth Vallakati, Vamshi Krishna Mantri

ABSTRACT

Websites has become a core part of our lives. We use several websites on daily basis which makes our lives easier and advance. The engines powering these complex websites are very crucial. The advancements in technology which has made the web development different and away from general websites is frameworks like React. React allows us to do complex data processing and operations at Client side, which makes this quick and reduces load on the backend server. This becomes crucial when a website is handling thousands or millions of customers.

We propose making of website using React Framework which will allow Students to Discover your next career move, accurately matched to your skills, interests and career goals through our comprehensive assessment. Also adding a Machine Learning at Backend which will be trained for such work will increase the accuracy of the system without involving much manual work

Book Recommender System for Readers in a University Library

Dr. Ramakanta Mohanty, Sai Nikil, Sairam, M.Ruthvik Mohan, Sanjay

ABSTRACT

Presently a-days, many significant internet business and websites are utilizing suggestion frameworks to give important proposals to their clients and customers. The suggestions could be founded on different parameters, for example, things mainstream on the company's Website; client/ customer qualities, for example, land area or other statistic data; or past purchasing conduct of top clients/ customers. In this paper, a book suggestion motor is proposed which utilizes content-based filtering technique for recommending the books to the customer. The content based filtering technique doesn't requires a big amount of data to get trained and can work on significantly less amount of data even from a single customer. The Algorithm used here is Cosine similarity.

Vision Based Road Lane Detection For Self-Driving Cars

Dr. Ramakanta Mohanty, V.Vaishnavi, P.Rupasri , V.Vinay, V.Vijay

ABSTRACT

In intelligent transportation systems, intelligent vehicle cooperates with smart infrastructure to achieve a safer environment and batter traffic conditions. Although, a more convincing reason to build intelligent vehicles is to improve the safety conditions by the entire or partial automation of driving tasks. Among these tasks, the road detection plays an important role in driving assistance systems that provides information such as lane structure and vehicle position relative to the lanes.Intelligent vehicles are one of the enlightening ideas that will shape our future by providing enhanced safety and improved mobility. Apparently, among the complex and challenging tasks of future road vehicles is road lane detection or road boundaries detection. However, lane detection is a challenging task because of the varying road conditions that one can encounter while driving. In this paper, a vision-based lane detection approach capable of reaching real time operation with robustness to lighting change and shadows is presented. The system acquires the front view using a camera mounted on the vehicle. A developed pre-processing phase including a grayscale conversion, noise removal, edge detection with automatic threshold, lines extraction using Hough transform, lines or boundaries of the road fitted by hyperbolas are simulated. The proposed lane detection system can be applied on both painted and unpainted road as well as curved and straight road in different weather conditions.

Software Defect Prediction Using Machine Learning Techniques

Dr. Ramakanta Mohanty, Sameeksha, Sai Krishna, Sai chandu, Zubair

ABSTRACT

Software defect prediction provides development groups with observableoutcomes while contributingto industrial results and development faults predicting defective code areas can help developers identify bugs and organize their test activities. The percentage of classification providing the proper prediction is essential for early identification. Predicting software defects using machine learning (ML) algorithms is one approach in this direction. Implementing this approach in the earlier stages of the software development improves software performance quality and reduces software maintenance cost. Different models and techniques have been implemented in many studies to predict software defects. This project implements Deep Learning algorithm to develop a new software defect prediction model for software future defect prediction is proposed. The defect prediction is based on historical data collected by Nasa.

Software Bug Prediction (SBP) is an important issue in software development and maintenance processes, which concerns with the overall of software successes. This is because predicting the software faults in earlier phase improves the software quality, reliability, efficiency and reduces the software cost. However, developing robust bug prediction model is a challenging task and many techniques have been proposed in the literature. This paper presents a software bug prediction model based on machine learning (ML) algorithms.

A Desktop App for Sign Language Recognition and Speech Output

Dr. Ramakanta Mohanty, Arfa Firdous,   Ms K.Sruthi, Nallapu Ala, Medi Bhavathi

ABSTRACT

A Sign Language is one of the way to communicate with deaf people. In this work sets, included features and variation in the language with locality have been the major barriers which has led to little research being done in ISL. One should learn sign language to interact with them. Learning usually takes place in peer groups. There are very few study materials available for sign learning. Because of this, the process of learning sign language learning is a very difficult task. The initial stage of sign learning is Finger spelled sign learning and moreover, are used when no corresponding sign exists or signer is not aware of it. Most of the existing tools for sign language learning use external sensors which are costly. Our project aims at extending a step forward in this field by collecting a dataset and then use various Image feature extraction techniques to extract useful information which is then given as an input to supervised Deep Learning techniques. Currently, we will be using the neural networks for understanding the real-time hand signs for the video camera frames and predict the English Alphabets of hand gestures or signs using a GUI interface.

Crypto currency Price prediction using the techniques of Deep Learning and Sentiment Analysis

V N S S R K Sai Somayajulu Meduri

Research Scholar,

Department of Computer Science & Information Technology,

Moulana Azad National Urdu University, Hyderabad.

Email: m.somayajulu12@gmail.com

Dr. Bonthu Kotaiah

Assistant Professor,

Department of Computer Science & Information Technology,

Moulana Azad National Urdu University, Hyderabad

Email: kotaiah.bonthu@manuu.edu.in

ABSTRACT

Crypto currency is a type of digital money which is introduced to share or transfer digitally using cryptographic security algorithms like (SHA-256) and (MD5). The value of cryptocurrencies is highly unstable, fluctuates according to stochastic moments, and has now reached an unpredictably high level. To forecast the price of cryptocurrencies, many academics have used deep learning, machine learning, and other market sentiment-based algorithms. Since all cryptocurrencies fall under the same category, it follows that an increase in one cryptocurrency's price may result in a change in the price of other cryptocurrencies. To improve the efficiency of the suggested system, researchers have also captured the opinions/sentiments expressed on social media sites like Twitter and others. In this research, we offer DL-Gues, a hybrid and reliable framework for predicting crypto currency prices that takes into account the interdependence of the target coin with other cryptocurrencies as well as with market sentiment. We took into account Dash price forecast utilizing cost history and tweets for Litecoin, Bitcoin, and Dash as well as multiple loss algorithms for confirmation. Additionally, we deduced findings for Price Prediction of other cryptocurrencies to test the applicability of DL-GuesS on them.

Research Opportunities in AI, IoT and Big Data

Ko-Ren Song

Associate Professor,
Department of Computer Science and Information Engineering
National Chung Cheng University, TAIWAN
korenson@cs.ccu.edu.tw

ABSTRACT

This talk will illustrate some research opportunities in artificial intelligence. An important area of research involves building a machine that can solve complicated problems normally requiring human intelligence via self-learning. Data is crucial part of learning, and it becomes difficult to design a machine that can manage big data efficiently for large-scale applications. These real-world research opportunities from different disciplines involve huge amount of data collected from sensors. Challenges include false data, real-time data processing, faulty sensors, software integration, etc. Issues, approaches, and progresses will be discussed at length.

The Role of Intellectual Property Rights in Artificial Intelligence

Saraswat Rohit
Sunrise Pharmacy College, Sunrise University, Alwar, Rajasthan
E-mail: saraswatrohit20s@gmail.com

ABSTRACT

This article highlights the role and importance of intellectual property rights laws on AI technologies. Intellectual property is property created by a person with their intellectual property for end use in industry or commerce. Intellectual property rights are legal rights granted by the government to an inventor for his/her inventions to exclude others for a period of time. Intellectual property rights laws apply to inventions created by the human mind.

Artificial intelligence has emerged from the field of creativity and innovation and is expected to become an integral part of everyday life in the near future. Artificial intelligence was created to make life easier in the future. New AI technologies play a key role in supporting not only the economy, but also the advancement of newly developed technology around the world. Artificial intelligence presents exciting opportunities for the development of the creative arts, the entertainment industry and everyday life.

Intellectual property has always had a symbiotic relationship with the development of new technologies. Artificial intelligence technology has the potential to shake up intellectual property rights laws, raising fundamental questions from invention and authorship to ownership and infringement. We believe that policymakers should examine advances in AI technology to ensure the safe use of IPR laws and prevent harmful social, economic, and ethical impacts of new AI.

This article provides an in-depth look at the scope of IPR laws on AI technologies as well as challenges from a global lens. The paper seeks to address issues of criminal liability for content generated by such machines.

An Innovative LI-FI Technology for Securing the Future of the Human & Living Being Life

Prof. (Dr.) Yashpal Singh, National Awardee -2004 ,
Li-Fi foundation member in India & Director,
Somany Institute of Technology & Management, Rewari. Haryana,.

ABSTRACT

Now a days ICT has becomes the Buzz word in the era of IT. .Be a Business, Education, Industry, Research organisation or Corporates houses. Because of the large number of users, there is now public concern about possible health hazards from EMF exposures from mobile phones or their base stations. Concerns have also been raised that continuous exposure to EMF radiation emanating from telecom towers causes harmful thermal and non-thermal health effects. The effects of exposure to radio frequency radiation have generated an active scientific debate among the research agencies across the globe. It leads the origination of clean and green Sustainable and living being Technology (Li-FI).

2. It is pertinent to note that every day we are exposed to many sources of EMF radiation in our daily life viz., X-rays used in hospitals, wireless phones, computers, TV sets, microwave ovens, extension cables, electric cooking ranges, refrigerators, freezers, and other electrical home appliances.

3. The guidelines for EMF radiations from BTS and mobile handsets in India are very stringent when compared to developed countries. In case of EMF radiation from BTSs, the prescribed values are 1/10th the ICNIRP guidelines and they are better than the standards adopted by some developed countries like USA, Canada, Japan and Australia.

4. Various international organisations like WHO, HPA, SRSA, AGNIR, NIPH have stated, in no uncertain terms, that there is no convincing evidence linking EMF exposures with health effects in adults or children. Moreover, over the past few years, various academic studies have been published worldwide on the effects of EMF radiation emanating from mobile towers. and a risk to human beings from EMF radiations.

5. However, as pointed out by the IMC, India-specific studies taking into considerations the hot tropical climate of the country, low body mass index (BMI), low-fat content of an average Indian, need to be undertaken. In this regard DST is examining the prospects of a scientific assessment for possible health hazards and adverse impact on ecology in India specific context from Mobile Hand Sets & Mobile towers.

6. To sum up: EMF radiation is a fact of life. Most human beings are exposed to some form of EMF radiation on a daily basis. In the context of the telecom industry, such radiation emanates from towers and mobile phones and possible harm that such radiation could have on human beings.

Observing the above limitations, a very innovative Technology Li-Fi , has been developing secure the life of human beings and living beings. Which overcome and eradicates the bad, harmful and dangerous side impact of the E.M.Wave based communication. Besides the sustainable protection of human being, it has the outstanding benefits. As. its Applications and adaptation will eradicate the dangerous and harmful signals on one way and will save the electrical power on other hand.

1. Li-Fi is a Green & clean sustainable living being Technology with no hazardous side Impact.
2. Li-Fi Technology enabled by advanced digital transmission Technologies.
3. Li-Fi Technology enable many applications.
4. Optical attocell networks based on Li-Fi.
5. Li-Fi are the glue between future energy efficient illumination and cellular communications.
6. Harness unregulated, unused and vast amount of Electromagnetic spectrum.
7. Enable ever smaller cells without the need for new infrastructure.

(Hence Li-Fi, Technology is the need of the hour for the green and clean Energy efficient, living being friendly communication system, without any harmful impact /radiations and is a upcoming sustainable technology.)

Artificial Intelligence For Sustainable Business Management & SDG

NAGESWARARAO BODA, RESERCH SCHLOAR,
MANAGEMENT DEPARTMENT
SUNRISE UNIVERSITY, ALWAR

ABSTRACT

Artificial Intelligence can help in planning and executing Sustainable Development Goals more appropriately. AI is a broad term which refers different types of computer software and their various applications in human activities like learning, planning, critical thinking, problem solving etc. A lot of risky and dangerous human work like mining, agricultural practices, machine learning, customer care, medical science, health & wellness, cybersecurity, exploring space science, internet search engines, personal assistants can be done quickly and effectively using Artificial Intelligence.AI is very significant in balance and continuous electricity supply in low rates, It helps in provisions of customers demands in low costs. It helps in maintenance of clean and green energy future, like wind energy, solar energy etc.Artificial intelligence in business is very impactful as it makes good managers to become best because it helps from improving relationships with colleagues, employees and different customers in finding various datas and performing distinguish tasks. Incorporation of AI in business management helps all marketers and sales persons to recognise various personalized consumer experiences in higher level. AI has wide range of applications in streamlining job processes and analysing business data. It is assumed that 2D digital technology can be overtaken by 3D physical environment technology using AI. Machine learning is one of the best forms of AI in development for business whose main function is to process primary datas quickly. The bright future is coming for human beings and AI will certainly be helping the world for their betterment. AI has tremendous potential to improve and begin numerous startups, business uses, certain jobs, new opportunities and to remake the economy.

Keywords:Business data, streamlining jobs, environment technology.

The Impact of Artificial Intelligence on Business Management: The Mediating Role of Sustainability

Dr. Humera Fatima
Associate Professor
Hyderabad School Of Management
Osmania University

ABSTRACT

In this research work the relationship between artificial intelligence (AI) and business management had been investigated. The mediating role of sustainability had been verified with predictor variable as artificial intelligence (AI) and behavioral intention as dependent variable. A systematic work had been taken to determine the factors associated with artificial intelligence and sustainable business management. The primary data had been procured with closed ended questionnaire and secondary data from various sources such as journals, books and online sources. The sustainability influences consumer decision making when dealing with products containing AI. The insights from this research work helps in developing sustainable business strategy while marketing products containing AI.

Keywords: Artificial intelligence, business intelligence, decision making, sustainability, technology, AI products.

Introduction

Artificial intelligence (AI) is the imitation of human intelligence processes by machines, particularly computer systems. The artificial intelligence can be simple stated as training machines to think like human and mimic their actions. Artificial intelligence leverages computers and machines to imitate the problem-solving and decision-making competences of the human mind(IBM, 2022). In service sector, the application of AI had proved to be successful for instance Netflix is able to send customized recommendations through machine learning algorithms (Oracle, 2022). Now AI is applied at the broader level in both manufacturing sector and service sector. The electronic products containing AI have been considered for conducting this research work. The user behavior towards electronic products containing AI is important area from the perspective of sustainability. According to report by PWC it is estimated that using AI for environmental applications could contribute up to $5.2 trillion USD to the global economy in 2030, a 4.4% increase relative to business as usual (PWC, 2022.). AI could generate 38.2 million net new jobs across the global economy offering more skilled occupations as part of this transition.

Electronic Products with AI

Mobile devices, virtual personal assistants, distributed and wearable sensors, smart home appliances, and automotive electronics are among the many examples of products and services that are benefiting from recent developments in AI. Leading electronic devices manufacturers such as Apple Inc, Cisco, Samsung, Mitsubishi, and Hitachi are using AI to carry out advanced research. The giants in electronics and computers industry are making long-term investments in AI research to find commercial applications and to explore how this technology can help to improve their existing product range. According to IBM's research, 41% of electronics companies are launching or modifying new business models in the next two to three years. Big Data and AI supports such huge transition.

Need for the Study

Now it is important for organizations to know the consumer responses towards electronic products containing AI. Next, it is necessary to understand the influence of AI on business management from the viewpoint of sustainability. Consumers in the modern world are concerned about environmental protection. The dump of used electronic products had increased soil pollution and water pollution in the recent years. Now it is important to consider the sustainability when marketing electronic products with AI. Hence this study had been conducted to know the consumer behavior towards electronic products with AI by using factors such as performance expectancy, effort expectancy, sustainability and behavioral intention. The outcomes from this research work helps in formulating business strategy for marketing products with AI.

Research Objectives

1. To study the mediating role of sustainability between performance expectancy and behavioral intention of consumers towards electronic products containing AI.

2. To determine the moderating effect of effort expectancy on relationship between performance expectancy and behavioral intention with regard to electronic products containing AI.

3. To know the association between age group and behavior intention towards electronic products with AI.

Literature review

Business and economics have been influenced by technology from past several decades. The latest technologies such as artificial intelligence (AI) and robotics have changed the organizational structures. The accuracy of forecasting and efficiency of service delivery had increased a lot in recent years and solely due to technological advancement (Dirican, 2015). From 1950s itself the importance of artificial intelligence (AI) research had been recognized. AI had impact on sustainability and it may replace low-skilled workers, AI itself can learn coding and cause disruption in job in Information Technology and reduces pollution and wastage of resources in the long term ((Khakurel et al., 2018).

The perception of students towards AI had been studied by Gherhes and Obrad (2018) and they opined that it will have positive impact on the society. The gender and specialization of student (technical or humanities) will have an impact on perception of students towards AI. The biggest environmental issues such as carbon emissions, environmental degradation and increasing travel demand can be resolved with support of AI (Abduljabbar et al., 2019) from the perspective of transportation industry. The possible of car pooling and optimistic travel route suggestions are some of the benefits with AI. The giant can service provider companies such as UBER are able to meet the customer demands at the right time at affordable pricing had been possible only with AI. Organizations capabilities and customer service have a considerable impact on the choice of logistic service providers and AI helps in taking informed decision (Tran and Do, 2021).

H1: The sustainability mediates the relationship between performance expectancy and behavioral intention.

The financial sustainability of a company is one of the most important factors in maintaining the soundness of the state and society. Such goal of the company can be implemented at ease with implementation of AI and it is often referred as financial intelligence or financial analytics ((Kim, Lee and Ahn, 2019). The application of AI lead to transformation of business practices including sustainability ((Nishant, Kennedy and Corbett, 2020). Organizations are using AI components such as machine learning (ML) and natural language processing (NLP) to study the big data and implementing informed decisions. For instance ML uses the historical data of vehicles flow on a particular highway and performs traffic forecasting in that route.

Di Vaio et al., (2020) had described the application of AI for developing sustainable business models (SBMs). In future organizations with AI are able to survive in the market because forecasting accuracy is more important for business organization and it is possible with modern technology such as AI. Big data technologies, Analytics and Artificial Intelligence are immense tools with capabilities to achieve complex tasks at levels ahead of human skills. The trio are have gained prominent place in these days as they can be used to collect, organize, and analyze large diverse data sets in order to disclose hidden patterns and trends which can address numerous problems peculiar to sustainable development (Ojokoh et al., 2020). The AI assists in sustainable supply chain finance for better growth of food and drink industry (Olan et al., 2021).

H2: The effort expectancy moderates the relationship between performed expectancy and behavioral intention.

Leaders in modern Indian organizations are giving priority to adopt AI integrated customer relationship management (CRM) systems for achieving sustainable profitability (Chatterjee et al., 2020). AI technologies have been significantly placed in modern organizations. On the other hand, high inspirations are associated to the organization competitive paradigm (Kitsios and Kamariotou, 2021). AI had provide to be most reliable tool for efficient self-management of waste and model developed by AI proved to be most reliable in identifying the materials (Alonso et al., 2021). The green AI had been gaining importance concept as an enabler of the smart city transformation, as it offers the opportunity to move away from purely technocentric efficiency solutions towards efficient, sustainable and equitable solutions capable of realizing the desired urban futures (Yigitcanlar, Mehmood and Corchado, 2021). The young adults and middle aged adults are concerned about latest technology. The adoption of technology is influenced by demographic characteristics such as gender and age group.

H3: There are significant differences in behavioral intention across different age groups.
Research Gap

Gansser and Reich, (2021) had adopted the UTAUT2 model for knowing the factors influencing use behavior containing AI. They have considered three segments such as mobility, household and health to determine the use of products containing AI. They have also suggested to use the model for further investigation in other segments such as energy industry, financial services or insurance, industrial production, consumer electronics, agriculture, logistics, marketing and new media, law/ legal services, and security/defense. In the past three years no such attempts were made in consumer electronic therefore in this study the model of UTAUT2 was implemented to conducted the study on use behavior consumer electronic containing AI.

Figure I
Research Model
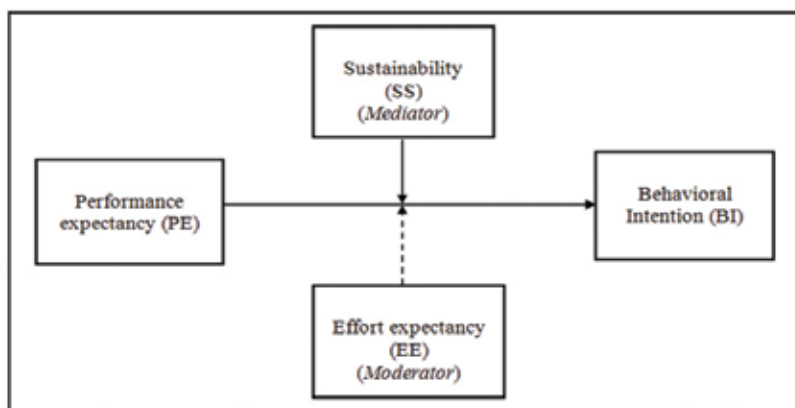
(Source: Own creation)

45

Research methodology

In this study the respondents (n = 150) have shared their opinion towards electronic products containing AI. The combination of purposive and simple random sampling had been used for data collection. The objective of the research work had been explained to the respondents. The research instrument consists of three demographic variables (gender, age group and education). The four constructs in the survey instrument are performed expectancy (3 items), effort expectancy (3 items), sustainability (3 items) and behavioral intention (3 items). The items have been procured from (Gansser and Reich, 2021) and they are slightly modified to meet the needs of this research work. A five-point Likert-type scale anchored from strongly agrees (5) to strongly disagree (1) had been implemented to measure the level of agreement for each item under four constructs. The statistical software SPSS and SPSS AMOS have been used for data analysis. The descriptive statistics and frequency analysis have been conducted by using the techniques from (Aldrich and Cunningham, 2016) for explaining the demographic variables such as gender, age group and education. The multiple regression analysis, mediation analysis and moderation analysis have been conducted by following the techniques available at Hair et al., (2014).

Mediation and moderation analysis had been conducted for knowing the impact of selected variables on the relationship between predictor and dependent variable. In this study the predictor variable performance expectancy (PE) refers to expected performance of electronic products containing AI. The dependent variable effort expectancy (EE) means the effort to be kept for learning new technology to use electronic products containing AI. The mediator variable sustainability means commitment of consumers towards environment and belief of people about the electronic products containing AI. The behavioral intention is about positive purchase intention for adoption and buying of electronic products containing AI.

Data analysis

The data analysis had been conducted using statistical software SPSS and SPSS AMOS. The respondents are male (83.3%) and female (16.7%) belong to age groups up to 25 years (9.3%), 26 to 35 years (55.3%) and above 35 years (35.3). The respondents have completed graduation (36%), post graduation (48%) and others (16.0%). SPSS AMOS was used to conduct mediation and moderation analysis. The sustainability (SS) is mediation and effort expectancy (EE) is moderator. The predictor variable is performance expectancy (PE) and dependent variable is behavioral intention (BI). There are three hypothesis which have been developed based on the literature review have been analyzed by implementing latest software SPSS and SPSS AMOS v 20.0.

Table I
Mediation analysis

Effect	Path	Standardized estimate	p-value	Bias corrected confidence interval at 95%	
				Lower Bound	Upper Bound
Total effect	PE→BI	0.659	0.000	0.594	0.721
Direct effect	PE-→BI	0.526	0.000	0.471	0.588
Indirect effect	PE*SS→BI	0.133	0.000	0.078	0.194
	R2		0.908		

Notes: PE = Performance expectancy, SS = Sustainability, BI = Behavioral Intention
Source: Output from AMOS

H1: The sustainability mediates the relationship between performance expectancy and behavioral intention. Mediation analysis was conducted to assess the mediating role of sustainability on the relationship between performance expectancy and behavioral intention. The mediating role of sustainability (SS) on the relationship between perceived expectancy (PE) and behavioral intention (BI) had been conducted using statistical software SPSS AMOS using bootstrapped confidence intervals with 5,000 samples.. The total effect of PE (M = 3.84, SD = 0.84) on BI (M = 4.46, SD = 0.79) is significant (β = 0.659, p < 0.001, [0.549; 0.721]). When SS (M = 3.44, SD = 1.06) is introduced, the direct effect of PE on BI is significant (β = 0.526, p < 0.001, [0.471; 0.588]). The indirect effect of PE on BI with SS as mediator is significant (β = 0.133, p < 0.001, [0.078; 0.194]). This shows the relationship between PE and BI is partially mediated by SS supporting H1.

Table II
Moderation analysis

Path	Coefficient	t-value
PE➜BI	0.526*	14.407
EE➜BI	0.404*	16.242
PE*EE➜BI	-0.540*	-21.71

Notes: PE = Performance expectancy, EE = Effort expectancy, BI = Behavioral intention
*Significant at p < 0.001 level
Source: Output from AMOS

H2: The effort expectancy moderates the relationship between performed expectancy and behavioral intention.

Moderation analysis had been conducted using SPSS AMOS to ascertain the moderating role of EE between PE and BI. The outcome variable is BI, the predictor variable is PE and the moderator is EE (M = 3.89, SD = 0.61). The PE has significant impact on BI (β = 0.526, p < 0.001, t = 14.407). The EE has significant impact on BI (β = 0.404, p < 0.001, t = 16.242). The interaction variable (PE*EE) has significant relationship with BI (β = -0.540, p < 0.001, t = -21.71) supporting H2. The results revealed (see Figure 1) that at lower level of effort expectancy the performance expectancy has stronger impact on behavioral intention. Furthermore, at higher level of effort expectancy the performance expectancy the performance expectancy fails to influence behavioral intention.

Figure II
Interaction plot for moderation analysis
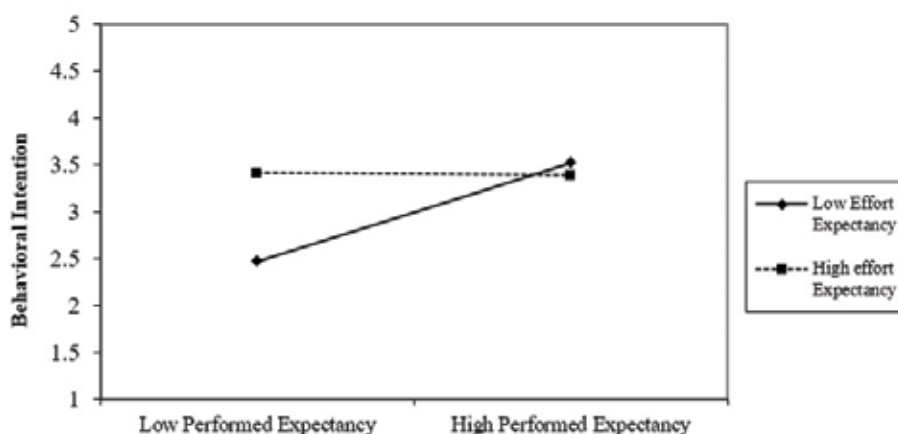
(Source: Developed with Excel template available at http://www.jeremydawson.co.uk/slopes.htm)

H3: There are significant differences in behavioral intention across different age groups.

Table III
One-way ANOVA

			Tests of Homogeneity		ANOVA	
Age Groups	Mean	Std. Deviation	Levene Statistic	Sig.	F	Sig.
Up to 25 Years	4.500	0.650	0.359	0.699	0.444	0.642
26 to 35 Years	4.506	0.802				
Above 35 Years	4.377	0.813				

Source: Output from SPSS

There are no significant differences in behavioral intention across the different age groups. The respondents are divided into three groups (Group 1 = Up to 25 Years, Group 2 = 26 to 35 Years, Group 3 = above 35 Years). The ANOVA results suggest that mean scores of Group 1 (M = 4.500, SD = 0.650), Group 2 (M = 4.506, SD = 0.802) and Group 3 (M = 4.377, SD = 0.813) are not significantly different from each other (F (2, 147) = 0.699, p = 0.642) not supporting H3.

Findings

The sustainability has mediating effect on the relationship between expected performance and behavioral intention. Hence the intention to use electronic products containing AI would be influenced by attitude towards the environment and future generation needs. The effort expectancy moderates the relationship between expected performance and behavioral intention. It means organizations manufacturing electronic products containing AI should consider the effort needed by user while using it. When electronic products containing AI are ease to use with less effort then performance expectancy will have more impact on behavioral intention. The sustainability, performance and effort influence the consumers while adopting electronic products containing AI.

Discussion

Artificial intelligence (AI) is future for contemporary business organizations. The AI has capability to reduce greenhouse gases (GHG) emission which leads to attainment of sustainability. Few years back AI was used in services industry like predicting the consumer behavior, employee behavior and financial management. Now AI had entered into manufacturing sector and precisely in electronics industry. Consumers are accepting that electronic products with AI are more efficient than traditional products. It is easy for middle aged and young adults to use electronic products containing AI. The sustainability plays partial mediation role on the relationship between performance expectancy and behavioral intention. More importantly the effort expectancy moderates the relationship between performance expectancy and behavioral intention. It can be claimed from the moderation analysis that at lower level of effort expectancy the performance expectancy influences behavioral intention.

Contribution to theory

The research work on the application of AI on business management is at novice stage with regard to manufacturing industry. This study adds knowledge that sustainability mediates the relationship between artificial intelligence and business management at the broader level. The existing models such as technology acceptance model (TAM) and theory of reasoned action (TRA) have explained about user acceptance of products based on reason on rationality and technology advancements. In this study the user acceptance of high technology products from the perspective of sustainability had been described.

Conclusion

The awareness of electronic products containing AI had been there in the society. The experience with electronic containing AI is less among the people in the society. The consumers are more interested in

technology and precisely electronic products containing AI. When consumers are able to learn technology they are ready to accept technology. From the other side, electronic products containing AI are developed to assist users in more easy way. In future the internet technology would change the world and supports sustainable business management. Technology and sustainability are both important for modern business organizations to meet the expectations of the stakeholders of the business.

Limitations and Future research

In this research study the sample size is less and it represents the opinion of consumers of one geographic location i.e. Telangana regions. Similar studies should be conducted in other metropolitan cities in India. Then meta-analysis must be conducted to know the variances in the findings from the research works. The other factors such as personal innovativeness, security and conveniences should be used in new research models related to electronic products containing AI. The direct link between AI and sustainability is another important area of research where there exists need of knowledge. The specific electronic products such as cleaning robots, smart homes, digital assistants and driverless cars need to be considered by researchers from the viewpoint of relationship between artificial intelligence and sustainability.

References

Abduljabbar, R. et al. (2019) 'Applications of artificial intelligence in transport: An overview', Sustainability, 11, pp. 1–24. doi: 10.3390/su11010189.

Aldrich, J. O. and Cunningham, J. B. (2016) USING IBM SPSS STATISTICS. 2nd edn. Los Angeles: SAGE Publications Inc.

Alonso, S. L. N. et al. (2021) 'Digitalization, circular economy and environmental sustainability: The application of artificial intelligence in the efficient self-management of waste', Sustainability, 13(4), pp. 1–20. doi: 10.3390/su13042092.

Chatterjee, S. et al. (2020) 'Adoption of artificial intelligence integrated CRM system: an empirical study of Indian organizations', The Bottom Line, 33(4), pp. 359–375. doi: 10.1108/BL-08-2020-0057.

Dirican, C. (2015) 'The Impacts of Robotics, Artificial Intelligence On Business and Economics', Procedia - Social and Behavioral Sciences, 195, pp. 564–573. doi: 10.1016/j.sbspro.2015.06.134.

Gansser, O. A. and Reich, C. S. (2021) 'A new acceptance model for artificial intelligence with extensions to UTAUT2: An empirical study in three segments of application', Technology in Society, 65, p. 101535. doi: 10.1016/j.techsoc.2021.101535.

Gherhes, V. and Obrad, C. (2018) 'Technical and humanities students' perspectives on the development and sustainability of artificial intelligence (AI)', Sustainability, 10(9), pp. 1–16. doi: 10.3390/su10093066.
Hair, J. F. et al. (2014) Multivariate Data Analysis: Global Edition. 7th edn. India: Cengage Learning India Pvt. Ltd.

IBM (no date) What is Artificial Intelligence (AI)? Available at: https://www.ibm.com/cloud/learn/what-is-artificial-intelligence (Accessed: 7 August 2022).

Khakurel, J. et al. (2018) 'The Rise of Artificial Intelligence under the Lens of Sustainability', Technologies, 6(4), p. 100. doi: 10.3390/technologies6040100.

Kim, K. J., Lee, K. and Ahn, H. (2019) 'Predicting corporate financial sustainability using Novel Business Analytics', Sustainability, 11(1), pp. 1–17. doi: 10.3390/su11010064.

Kitsios, F. and Kamariotou, M. (2021) 'Artificial intelligence and business strategy towards digital transformation: A research agenda', Sustainability, 13(4), pp. 1–16. doi: 10.3390/su13042025.

Nishant, R., Kennedy, M. and Corbett, J. (2020) 'Artificial intelligence for sustainability: Challenges, opportunities, and a research agenda', International Journal of Information Management, 53(January), p. 102104. doi: 10.1016/j.ijinfomgt.2020.102104.

Ojokoh, B. A. et al. (2020) 'Big data, analytics and artificial intelligence for sustainability', Scientific African, 9, p. e00551. doi: 10.1016/j.sciaf.2020.e00551.

Olan, F. et al. (2021) 'The role of Artificial Intelligence networks in sustainable supply chain finance for food and drink industry', International Journal of Production Research, pp. 1–16. doi: 10.1080/00207543.2021.1915510. Oracle (no date) What is Artificial Intelligence (AI)? Available at: https://www.oracle.com/in/artificial-intelligence/what-is-ai/ (Accessed: 7 August 2022).

PWC (no date) How AI can enable a sustainable future - PwC UK. Available at: https://www.pwc.co.uk/services/sustainability-climate-change/insights/how-ai-future-can-enable-sustainable-future.html (Accessed: 7 August 2022).

Tran, T. T. and Do, Q. H. (2021) 'Critical Factors Affecting the Choice of Logistics Service Provider: An Empirical Study in Vietnam', Journal of Asian Finance, Economics and Business, 9(5), pp. 225–237. doi: 10.13106/jafeb.2021.vol8.no4.0145.

Di Vaio, A. et al. (2020) 'Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review', Journal of Business Research, 121(August), pp. 283–314. doi: 10.1016/j.jbusres.2020.08.019.
Yigitcanlar, T., Mehmood, R. and Corchado, J. M. (2021) 'Green artificial intelligence: towards an efficient, sustainable and equitable technology for smart cities and futures', Sustainability, 13, pp. 1–14. doi: 10.3390/su13168952.

Appendix

Table IV
Constructs and items

Construct	Items	Source
Performance Expectancy	• The use of electronic products that contain AI helps in getting things more quickly. • Electronic products that contain AI are more efficient. • Electronic products that contain AI are useful in everyday life.	Gassner and Reich (2021)
Effort Expectancy	• I believe that electronic products that contain AI are easy to use. • It is easy for me to learn about electronic products that contain AI. • I like to experiment with new electronic products that contain AI	Gassner and Reich (2021)
Sustainability	• People who use electronic products that contain AI can save resources. • People who use electronic products that contain AI can achieve cost savings. • People who use electronic products that contain AI can manage waste better.	Gassner and Reich (2021)
Behavioral Intention	• In future, I will use electronic products containing AI. • In future, I will use electronic products containing AI on regular basis. • I will recommend others to use electronic products containing AI	Gassner and Reich (2021)

THE FUZZY CAPACITATED
VEHICLE ROUTING PROBLEM:
SENTIMENT ANALYSIS FOR DRIVER SELECTION

Dr. BONTHU KOTAIAH

Assistant Professor,

Department of Computer Science & Information Technology,

Moulana Azad National Urdu University, Hyderabad

Email: kotaiah.bonthu@manuu.edu.in

ABSTRACT

The relationships between the cars, drivers, and passengers involved in shared transportation could have long-term effects on the company. Results have been shown to be greatly improved by the use of machine learning techniques and their integration with current models. The availability of a large amount of unstructured, textual data has encouraged text generation and mining studies. Such data analysis and comprehension are now essential for contemporary commercial applications. Natural language processing is therefore applied in this situation to execute driver selection, gather driver ratings, and quantify raw consumer feedback. The ideal drivers for transporting passengers should be chosen, and models should be created in this regard. A hybrid genetic algorithm is used to describe and solve an integrated vehicle routing problem (VRP) with generalized fuzzy travel durations and unpredictable pick-up and drop demands (GA). Since getting honest feedback is difficult, businesses turn to social media analytics to better understand how the public feels about their products. Natural language processing (NLP), machine learning (ML), and computational linguistics are all utilised in the approach of sentiment analysis to extract and quantify the sentiment hidden in a text string. The cost function is evaluated using fuzzy simulations in a realistic setting. The process is repeated numerous times, and the results of the chosen drivers are utilized to update the driver ratings for the following run. The findings validate the study's goals, and a comparative analysis is done to further support the model's efficacy. Additionally, a third instance with triangular fuzzy ratings is shown and its effects on the model are addressed.

Key Words: Vehicle routing, driver selection, sentiment analysis, fuzzy simulation, genetic algorithm

TRANSFORMING HEALTHCARE MACHINE LEARNING BY MOVING FROM MODEL CREATION TO DATA ANALYSIS

Dr. SYED MOHD FAZAL UL HAQUE 1

Assistant Professor,

polytechnic Department

Maulana Azad National Urdu University, Hyderabad

Email: fazal@manuu.edu.in

Dr. BONTHU KOTAIAH2

Assistant Professor,

Department of Computer Science & Information Technology,

Maulana Azad National Urdu University, Hyderabad

Email: kotaiah.bonthu@manuu.edu.in

Dr. D.V.CHANDRASHEKAR 3

Professor,

PG Department of ComputerScience,

TJPS COLLEGE, Guntur

Email: dvchand.info@gmail.com

ABSTRACT

In the past decade, improvements in clinical capacities and access to care have been made possible thanks to the implementation of machine learning (ML) in the healthcare industry. This has also helped push the automation of physician jobs. Because of this progress, it has become clear that data play essential roles in the creation and implementation of models at every stage. In this. we offer a perspective that is centred on data regarding the breakthroughs and challenges that are defining ML for the healthcare industry. We discuss the use of deep generative models and federated learning as strategies to augment datasets for improved model performance. Additionally, we discuss the utilisation of the more recent transformer models for the purpose of managing larger datasets and improving the modelling of clinical text. We also discuss data-focused issues that arise during the deployment of machine learning, putting an emphasis on the necessity to deliver data to ML models in an effective manner for the purpose of making timely clinical predictions and taking into account natural data shifts that can degrade model performance.

Keywords : Machine Learning, models, federated learning, GAN, CNN & NLP

TARGET TRACKING BY USING SEQUENTIAL RANDOM DRAFT PARTICLE SWARM OPTIMIZATION ALGORITHM

V N S S R K SAI SOMAYAJULU MEDURI1

Research Scholar,

Department of Computer Science & Information Technology,

Moulana Azad National Urdu University, Hyderabad.

Email: m.somayajulu12@gmail.com

Dr. BONTHU KOTAIAH2

Assistant Professor,

Department of Computer Science & Information Technology,

Moulana Azad National Urdu University, Hyderabad

Email: kotaiah.bonthu@manuu.edu.in

ABSTRACT

The public environment is becoming more and more complicated as a result of economic growth and rising population mobility. A monitoring system is now an essential component of a smart city. The monitoring system's fundamental component, target tracking, can be handled by evolutionary algorithms because it is essentially an optimization process. Target tracking includes activities like keeping an eye out for suspicious activity and gathering real-time traffic data to gauge traffic flow. Target Tracking has recently seen widespread use in the field of computer vision. It now poses a serious issue for vision-based control, enhanced reality, monitoring, and intelligent transportation. Particle swarm optimization (PSO) and Quantum Behaved Particle Swarm Optimization (QPSO) are two evolutionary algorithms with great accuracy and quick convergence that have drawn increasing attention. However, numerous research have demonstrated that PSO and QPSO each have intrinsic flaws. They are constrained in how they handle tracking applications due to time constraints and falling into local optimums. We use a new random drift particle swarm optimization technique (RDPSO) to track targets for these reasons. RDPSO is more effective and has better global convergence than PSO and QPSO. We provide a sequential RDPSO tracking algorithm based on the conventional PSO-based tracking framework. By combining the resampling measures in a particle filter (PF) and using the Gaussian mixture model to assess fitness value, we may further enhance the performance of the proposed tracking system. Numerous testing results demonstrate the usefulness and efficiency of our method, particularly in situations where the background is rapidly changing, the object is distorted or moving, and the camera is jerky.

Keywords: visual tracking, random draft particle swarm optimization

MEDICAL IMAGE SEGMENTATION AND CLASSIFICATION WITH DEEP LEARNING METHODS

MOAHMMED ABDULHAKIM ABDULFATTAH ABDULAZI1
Research Scholar,
Department of Computer Science & Information Technology,
Maulana Azad National Urdu University, Hyderabad.
Email: alkeer2010@yahoo.com

Dr. BONTHU KOTAIAH2
Assistant Professor,
Department of Computer Science & Information Technology,
Maulana Azad National Urdu University, Hyderabad
Email: kotaiah.bonthu@manuu.edu.in

ABSTRACT

Medical image processing is an integral part of healthcare domain today. The complex structure of the brain has continued to poses challenges to the medical experts for identifying the abnormalities and deciding on the further appropriate line of action. To avoid these short comings deep networks in computer vision have proven to be more accurate and precise in performing the specified application. Deep networks are emerging machine learning methods that are showing significant results in the classification and segmentation tasks. The recent technological developments have brought enormous changes in the field of medicine and these are effectively used by the medical experts for extracting the features associated with various abnormalities. The main aim of this paper is to design customize deep network for extraction of region of interest from multiple medical images and also classify the abnormality in them. The main aim of this work is to design customize deep network for extraction of region of interest from multiple medical images and also classify the abnormality in them. It focuses on 3 different types of medical images and its classification of abnormalities where certain process of segmentation and preprocessing were involved. Metrical analysis is performed to evaluate and assess the performance of the designed network and compare it with state of art methods and networks. , in this research work we concentrate on three different types of medical images X-Ray Lungs, where the detection of Pneumonia and Tuberculosis is dealt ,MRI brain images where the brain tumor abnormality and its extraction is dealt, Diabetic Retinopathy, where the work concentrates on to extracting the retinal blood vessels and exudates for the detection of abnormality.

Keywords: Segmentation, Deep Learning

SMART RECOMMENDATION SYSTEM FOR TOURISM BASED ON DEEP LEARNING AND BIG DATA ANALYTICS

ISMAT FATHIMA1

Research Scholar,

Department of Computer Science & Information Technology,

Moulana Azad National Urdu University, Hyderabad.

Email: ismat@manuu.edu.in

Dr. BONTHU KOTAIAH2

Assistant Professor,

Department of Computer Science & Information Technology,

Moulana Azad National Urdu University, Hyderabad

Email: kotaiah.bonthu@manuu.edu.in

ABSTRACT

The Tourism sector in India contributes a sizable amount to the GDP and is one of the most significant divisions of the economy. Tourism has both positive and negative economic, social and environmental impacts on destinations. Destination evaluation is the process of analyzing all the elements of a place that make up a tourism destination including accommodation attractions, amenities, access, marketing and pricing. It is the biggest task for the tourist to decide whether to plan a visit or not. For that purpose they will take help of websites which provides the outlooks of reviews or tweets or any social media postings related to the particular destination. But analysis of Tweets/blogs/reviews in most of the websites are based only on text in English, while there are many texts available where users employ the Roman script to write in Hindi/Urdu. Such a data set has not been compiled yet. We are proposing a smart recommendation system that uses an automated method to extract accurate spatial information and profiles of tourist spots and destinations. From the Collected data it performs sentimental Analysis using Natural Language Processing (NLP) which identifies and extracts the emotional tone behind it. For data collection, the sources of digital texts will be blogs by tourists, and travel reviews shared by visitors on tourism websites from solo, independent and organized group's tours. The texts will be collected for a period of 3 years i.e., 2020, 2021 and 2022. In case of Tweets, only the ones from the current year will be collected due to technical, financial and time constraints. For Sentiment Analysis, we will use hybrid approach, i.e. lexicon based approaches for the classification. Tools will be decided from the available ones like Social Mention, Repustate, and Lexalytics etc. For the quantitative analysis of collected data, suitable statistical tools will be utilized to compare the range of sentiments expressed about the selected destinations.

Key Words: Sentiment Analysis, Classification, Destination Evaluation

MACHINE LEARNING TECHNIQUES IN A HYBRID MODEL FOR RECOMMENDATION SYSTEMS

MOHD MUSTAFEEZ UL HAQUE1
Research Scholar,
Department of Computer Science & Information Technology,
Moulana Azad National Urdu University, Hyderabad.
Email: mohdmustafeezulhaque@gmail.com

Dr. BONTHU KOTAIAH2
Assistant Professor,
Department of Computer Science & Information Technology,
Moulana Azad National Urdu University, Hyderabad
Email: kotaiah.bonthu@manuu.edu.in

ABSTRACT

The basic purpose and need to develop a recommender system is to provide utmost information needed for personalization learning and interests based on interactive and behavioural patterns of the user. When a customer visits any e-commerce or e-learning platforms, it will be overload for him to opt the best among the available products by checking and analyzing every characteristic. So to deal with the overload on customer, the websites introduced recommendation systems which can take requirements from the customers and fetch the contents with respect to it. But the existing recommendation systems are not strong enough to analyze the requirements based on various formats because it will fetch the data either by implementing content based filtering or collaborative filtering as main characteristic which suffers with issues like cold start problem and sparsity problems while interacting with customer. We propose a recommendation system which works more efficiently to fetch a particular product by implementing a hybrid model which combines the outputs from content based filtering and Collaborative filtering that can yield more efficient recommendations. Content based filtering method where the system can study the interests of the customer based on the inputs using machine learning technique called Support Vector Machines (SVM) and a set of recommendations can be generated. Collaborative filtering method is which generates recommendations are not only made upon the inputs given by the customer but the algorithm will also check for the different interests of the people with similar inputs using a technique called K-nearest neighbor(KNN) method. The outputs from content based filtering and Collaborative filtering to form a hybrid model that can yield more efficient recommendations.

Keywords: Hybrid Filtering approach, efficiency, behavioral pattern

INTELLIGENT SERVICE PROVIDER
WITH LOCATION ACCESS

SAI SOMAYAJULU MEDURI
Assistant Professor
Krishna University College of Engineering and Technology, Machilipatnam.
Email: kruteacher468@kru.ac.in

ABSTRACT

Now the world is running under the influence of various applications of information technology. One of the most popular applications developed in IT is E-commerce.In present scenario, people are buried up in a heavy work culture, as everyone is engaged with busy schedules, and hectic tasks which make them deviate from family life. If any issues encounter unexpectedly, it distracts them and makes them choose over the work they have to accomplish primarily. It is important to manage both professional and family life. In such circumstances, every one of us would have fantasized about a kind of house which doesn't have any leaks in pipes, if it doesn't have any mess in fixing a furniture and a kind of house which never face any maintenance issues and every one of us have thought that a life would be much better if no point of issue arises in getting a service at your door step and if there is no mess in bargaining a labor for home service. In such situation's E-Commerce plays a vital role in today's life as it has so many advantages in our life because it makes convenient in daily life of the people. So, giving a thought to that aspect of life is to design and develop a system that provides many services at your doorstep in just one click. A System that provides variety of services like plumbers, repair persons, cleaners, electricians, painters, taxi service laundry and many more. To make it comfortable for all the users our system also provides a mobile environment which offers ease in accessing our services. A very simple process is carried out to book a service(s), and People can choose the service and get the service providers who are nearer to him and has highest rating. System is versatile as service can be booked from everywhere to anywhere you desire.

Key Words: E-commerce, Maintenance issues, Mobile environment

PUBLICITY FOR
INTERNATIONAL CONFERENCE - 2022

Invited verious organizations heads for attend to conference

Invited verious organizations heads for attend to conference

Invited verious organizations heads for attend to conference

Conference Photos

63

74

"ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE DEVELOPMENT"

My Commitment for Better World

Keynote by KP BHUSAL

Conference Organized by – Multipurpose Awareness Society, Hyderabad India
Venue: Taj Mahal Hotel, Hyderabad, India
Date : 9-10th September, 2022

GREAT PACIFIC GARBAGE PATCH

Sustainable Development

PARTNERSHIP
Implement agenda through solid global partnership

01

PROSPERITY
Ensure prosperous and fulfilling lives in harmony with nature

02

PEACE
Foster peaceful, just and inclusive societies

03

PEOPLE
End poverty and hunger in all forms and ensure dignity and equality

04

PLANET
Protect our planet's natural resources and climate for future generations

05

PLANET

1

Reduce Reuse Recycle

2

Shop Wisely

3

Plant a Tree

82

HELP PEOPLE

01 Reduce Food Waste

02 Feed The Needy

03 Support Farmers to Produce More

FOSTER PROSPERITY

01 Abundance mentality

02 Save & Invest

03 Donate

PEACE

- Meditate - Peace Within
- Help Others
- Smile and Be Happy ☺

Partnership for Change

JOIN HANDS
Give hands to join hands and collaborate with others.

Connect

Win-Win

Empathy

WIN - WIN
Think of mutual benefit in every collaboration

EMPATHY
Wear other people's shoes and feel the world

84

Sustainable Development
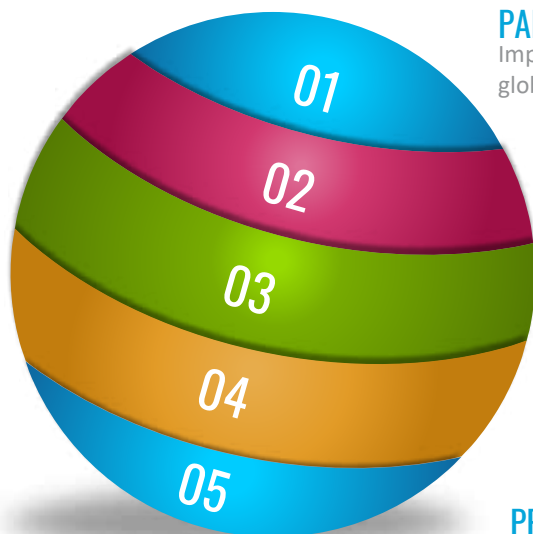
PARTNERSHIP
Implement agenda through solid global partnership

PROSPERITY
Ensure prosperous and fulfilling lives in harmony with nature

PEACE
Foster peaceful, just and inclusive societies

PLANET
Protect our planet's natural resources and climate for future generations

PEOPLE
End poverty and hunger in all forms and ensure dignity and equality

01
02
03
04
05

KP BHUSAL

Leadership Coach | Environmental Activist

More at: https://kpbhusal.com/

Founder: Idea Education Consult

E-mail: info@kpbhusal.com

Contact: +977-9851243228

Avoidance of IoT Data breaches using Block Chain Technology

By Mrs N Kiranmai
Associate Professor

CONTENTS

- Introduction
- Internet of Things
- Block Chain Technology
- Service-centric networking
- Conclusion

Introduction

- The Internet of Things (IoT) has a profound impact on daily lives.
- Deployed outside and utilized in homes and hospitals to monitor and report on environmental changes.

- IoT is a global network of digital and analogue "things" connected to the internet.
- Millions of gadgets, people, and organizations will be encouraged to connect via the Internet of Things everywhere in order to exchange data and useful information.

Internet of Things

Internet of Things

- The IoT was born in the early 1980s.
- Gradute students at Carnegie Mellon University, including Mike Kazar '78, connected a Cola-Cola machine to the internet.
- The group's motivation was simple: laziness. They wanted to use their computers to confirm the machine was stocked before trekking from their office to make a purchase.
- It was the world's first internet-connected appliance. "This was pretty much treated as the punchline of a joke," says Kazar, now a Microsoft engineer. "No one expected billions of devices on the internet."

- That includes everything from wearable heart monitors to smart fridges that tell you when you're low on milk.
- IoT devices often run on microcontrollers — simple computer chips with no operating system, minimal processing power, and less than one thousandth of the memory of a typical smartphone.
- So pattern-recognition tasks like deep learning are difficult to run locally on IoT devices.
- For complex analysis, IoT-collected data is often sent to the cloud, making it vulnerable to hacking.

Block Chain Technology

- Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network.
- An *asset* can be tangible (a house, car, cash, land) or intangible (intellectual property, patents, copyrights, branding).
- Virtually anything of value can be tracked and traded on a block chain network, reducing risk and cutting costs for all involved.

Climate Change and CCAM activities
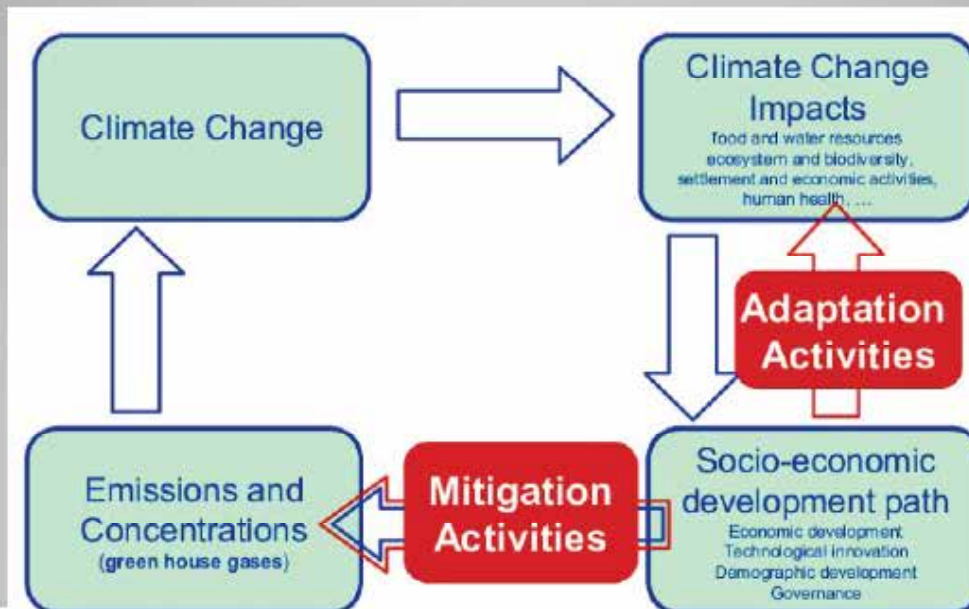
- Blockchain for climate change in general as stated by many institutions (e.g., UNDP,9 WEF),10 newly evolving technologies such as blockchain technology have the potential to act as a tool to accelerate global actions towards the Paris Agreement agenda and the Sustainable Development Goals (SDGs) of the Agenda 2030.

Service-centric networking

- Data breaches are not only a main source of a target company's negative reputation, but they also result in significant financial losses.

Characteristics of block chain technology :
- Decentralized Network
- Managing Access points
- Immutability
- Data Access Logging

To mitigate data breaches entirely, we can stop them from occurring in the first place

- As a 'decentralized' technology, each party involved has to give consent before a new digital transaction is added to the network and, once added, cannot be altered.
- Blockchain cannot be controlled by one single individual and so that makes things very difficult for hackers to gain access, corrupt, or distribute the data.
- Cybercriminals cannot edit or overwrite a blockchain network, as cracking the network is virtually impossible.
- This transparent means of storing data makes for safe, fast and trustworthy transactions.

AI ROBO HUB CONSULTING SERVICES PVT. LTD.

Complete Digital Transformation Solutions

YOUR DIGITAL TRANSFORMATION PARTNER

RPA-AI-ML- SOLUTIONS | RPA SOLUTIONS |RPA CONSULTING SERVICES | RPA TRAINING

+91 7893688993| info@airobohub.com | https://airobohub.com

Chirunomula Srinivasa Rao

Mr. Ch Srinivasa Rao
Co-Founder | Future Tech Solutions
CEO | AI ROBO HUB Consulting Services PVT. LTD.
Global Delivery Head, Scaling Growth, Execution & Increasing Corporate Engagement

- **Overall 19+ Years** of Experience in the IT Industry
- **Over 10 + Years** of Experience in Architecture
    - As a Solution Architect, Technical Architect
    - As an SOA and Microservices Architecture
- **6 + Years** I have been associated with AUTOMATION (Robotic Process Automation)

Complete Automation ECO System (RPA, AI, ML, Cognitive Solutions, Cloud, IoT, Analytics)

Complete ECO System - BUSINESS SOLUTIONS- Digital Transformation Solutions & Digital Marketing Automation Solutions for SMALL, MEDIUM & LARGE Businesses, Enterprises & IT Companies across the globe.

Future Tech Solutions | AIROBOHUB Consulting Services Pvt. Ltd
+91 7661942119 | info@FutureTechSolution.in | chrao@airobohub.com 9

TRENDS OF AI

By 2030 – 70% of all the companies might have adopted at least one type of AI Technology

2019 – Market Size $1.1 billion

2030 - Market Size $25.7 billion

Market Growth rate (2020 – 2030) – 32.9%

AUTOMATION ECO SYSTEM

Understand the Problem

Analyze & ReEngineer if Applicable

Identify the Complexity & Simplify

Identify Innovative Solutions

Then Apply Required Technology based on Complexity

END TO END AUTOMATION ECO SYSTEM

RPA - UIPath / BP

AI - ML - DL

Cognitive Services

Python

Cloud

IoT

Analytics

Process Assessment | ReEngineering | Automation Opportunity | Business Case Preparation | Solution Architecture | Technical Architecture | Documentation | Delivery Plan | Implementation | UAT | Deployment | Execution

RPA - AI - ML - SOLUTIONS

Chatbots

COMPUTER VISION SOLUTIONS

NLP SOLUTIONS

BPO / BACK OFFICE SOLUTIONS

COGNITIVE SOLUTIONS

RPA SOLUTIONS

Document Mgmt.	SAP INTEGRATION
CRM OPERATIONS	ERP DATA ENTRY
EMAIL OPERATIONS	WEB SCRAPING SOLUTIONS
BPO / BACKOFFICE OPERATIONS	CALL CENTER OPERATIONS
HR OPERATIONS	INVOICE PROCESSING

RPA CONSULTING SERVICES

RPA - CoE - ESTABLISHMENT

DISCOVERY

SOLUTION DESIGN

IMPLEMENTATION

SUPPORT

INFRA SETUP

DIGITAL MARKETING AUTOMATION SOLUTIONS

To Small, Medium & Large Enterprises, Businesses & IT Companies across the Globe

MARKETING AUTOMATION

SALES AUTOMATION

CHATBOT SOLUTIONS

OPERATIONS & SUPPORT

AWARD

Proud Movement to Future Tech Solutions.

Future Tech Solutions recognized as one of the 10 most Recommended Automation / AI StartUp for 2020 by CIO Insider magazine.

Future Tech Solutions

FUTURE TECH SOLUTIONS

Devising Methods for Effective Deliverance of Automation

With a d;ion :obu.ild au ma:«1 ;o/udon; co;: (///«th andrcimtiMwilft prou;:.; ro cr,ar, DUJlich, :y;ciJk:. Funlr• T11ch Solution;based outq//il)'t!,rabad MS bffn protkitni comp'.:; dftitaltran nn:mon Jo!ution; to buzir.ci; s smc, JOJ7. Tk, com JItD'O'ha; dwn,,d iJ; mi;:ion :o Dlcorporm, M¥1id.1-l21 :tM :qft-.w, d wlop1Mn.cprojttc andd11iurpri.1M;,n ic,; m.Ditfla.J Ttan;/brmation - RP,.t.•.fl Cognitn• ZfP'•lc;...C"mput,r Jristion and I'ILPcapa!Ni:tl-#;. a, ."'- :awnl. Cht1!Tp";on & Founder & a, Sri,th;a;a RJla D#Ih•ry Httul« Q>.F dt7 of FIJUII Ttclt Solmion.:, com w:,; 01tlt"'IA, comIN110lman,tl1r• zCnip; a; a stan-up to obtrun tr:.., q/brwr.enllom>dtOldI..

In co:n-awn0:1w?thCll XagntU. CUirptnoa   Foaadtr; CllSria:in.u Rao, Dtlinry Bud & Co Foa.adtr, f'ahlnTKbSoha.tiom

Artificial intelligence technology h s grown •xceptionally in the last decade, and is exi>ected to thrive further a.s the new decade dawns. Tell n.sa.bout how Future Tech Solutions eruha..rked on a.niche sl>•a.ce in AI driven technological solutions.

Futur• Te·ch Solutionshas well de-fined pla.ns on AI Imple.me.nu.tion for both short term :..nd long term. Our AI & RPA implementation pla.n.s .ii.re spre.1d a.cross identify•ing use cases in various domains a.nd preparing due diligence, RPA impleme.ntation with AI & Cogni•tive capability, Computer Vision & NLP, Ch.itbots dt:vt:lopmwt. a.od Cognith•e Automation. We have b ffn enga.ged in the development of ph;sic.U robot for corporue s-t•curity coupled with loT Hub, an•a.lytics a.n,d,irtu,1 botwith Computer Vis.ion & fl.- P capability. Future Tech Solutions provides

dyna.mlc RPA lnnova.tion La.b for the easy migr:..tion of manual wod;force to a virtu,l worL;force one :..s a. pa.rt of digita.J tn.nsfor•m.a.tion. Thus enabling business to improve high sc.ila.bility, im•provt-d ru r·narouod time, achie,·e error free consistency a.nd obtain high producti'\•it;.

Thespendi.ugouR&D.u,.dthe de1>loyt.uent of AIpowered products and solutions continue to rise. This will enable AI to increasingly n\onitor a.nd refine va_rions

business 1>rocesses. What a.re the various AI 1>owered services offered by Fntu.re Tech in the IT industty? We have a. set of innovative RPA & A.l product ideas in our port•folio. Few a.mong the.m a.re AI & Cognitive capability security sys•tt.m, loT e.na.bled industry ROBO, AI & Cognitive powered with A.n ytks, RPA solution with AI for Computer Vision & NLP, RPA solution for complete bacL; office processing. a.nd diffuut Cha.t•bots with AI capability. Moreo,·er, we also provide complete auto•

muion e-cos-ysrem for few busi•ness requit'ements with RPA, Al, Cognitive se.rvices. Cloud loT, and Ana.lytics.

The in,1>orta.nce to develop a defined ap1>roach in software develo1>nle.nt life cycle always con\es in h,u1dy. Co\\ld you please elaborate the strong develop1uent and delivery 1uethodologies followed by Fntutt Tech i.u different software engiueering life cycle luodels? \Ve follow a definite Automation LifeCyde& O.lh·u,·metllodology in six phues to implement automation delivery. ln the initia.J pba..ff of disco,.–ery, we identify the automation opportunity with in the business and e.mbark on process a.ssessme.nt to dttermine the complexity and understand AS•IS a.nd To•Bt. process.. Later, we uny out entitlement and tech fe.a.sibiUty s-tudy and prepa.re

We identify the automation opportunity with in the business and embark on process assessment to determine the complexity and understand AS-IS and To-Be process

busine:ss cas·e preparation a.nd presentation. Then comes the SKond phue. when we. indulge in designing the solution. Here, opentions S\Kb a.s design &

docume.nt.ition, efforu & cost estimation, mode.l creation. environment ide ntifiu.tion. •nd tKhnology a•dtoffs are performed. After which we ue.rcise imple.menta.tion strategies with best practice.s, s nda.rds, configuration, review and testing operations. \Ve then place the process for UAT followed by deplo)·ment strategies and exe<ution s·tage. In the la.st ph.a.se of execution of the BOTs, we schtdul• & m•n•g• tll<! BOTS, monitor transactions,. logging, and generate repon&.i.nii/ytics,

Kindly cite an exa.1nple 0£ one of yonx successful AI inl1>le1nentation that has earned considera!>le be.nefit for tha.t company. R&D on various innovative ideas implt.me..ntltion, a.nd few POC in pipelineveqsoonthosewillcome out from Future Tech Solutions lnno,,a.tive Lab.

As a sta.rtu}) COl:1\llaJ1Y centred on AI technology a1>plica.tious. what ca..n we expect frolu Future Tech in the days ahead'? Weha.vea.pe.rfect t1, e-yeu plii.non Automation R&D, innovatn·e ide•ation .ind imp.le.menta.tion In Fu·tun TKh SoJution.s_ we will be signing up more talents year on year till 202.i. ,ve a. nticipiite hav•ing a te:..mof 2.60 membe.rs in RPA by the end of 2-02S. Over the next fh–e ytus wtwill bt le·vtlling up our portfolio to include R.PA solu•tions with AI, RPA & Cognitive c••pa.bilitie.s., bu.rni.shing AI products on computer vision & NLP, indus•tri,1 ROBO dtvelopmtnt, a.nd ROBO with Computer Vis.io NLP, loT &An.i.lytic.s.61
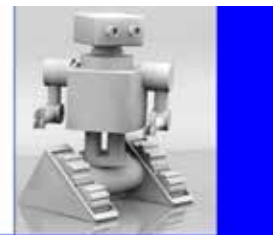
Current Research on AI Ethics & AI ESG Innovations

Contact: Jesse Arlen Smith , President Aiforgood Asia

99

Current Research on AI Ethics & AI ESG Innovations

Speaker Jesse Arlen Smith , President Aiforgood Asia

✔ **Innovations and Risks of AI**
Some of the Amazing Innovations and Challenges of AI

✔ **Original Research Paper Release**
Understanding the Ethical Outcomes for Operationalizing
Principles in AI Development

✔ **ESG Use Case in Conservation**
Showcase our ESG initiative for Conservation

INNOVATIONS IN RESPONSIBLE AI

AI has the power to do amazing things

CONSERVATION SUPPORT	ENVIRONMENTAL PROTECTION	DISASTER RESPONSE	HUMAN WELLBEING
Stopping poaching	Estimating water risk	Investigating post-disaster situations	Tracking human trafficking
Creating realtime virtual fences	Protecting biodiversity	Formulating reconstruction plans	Improving access and quality of education
Counting and tracking animals	Predicting future risks	Predicting and classify damage	Improving healthcare
Digitally tagging animals	Reducing air pollution	Geotagging locations for relief workers	Improving drug discovery
Analyzing data from camera traps	Identifying ocean waste	Mitigating forest fires	Diagnosing cancer
Detecting illegal fishing boats	Prioritizing resources		

FOUR MAJOR CONCERNS

Aiforgood Asia has recognized the four major concerns with designing and deploying AI systems

INEQUALITY RISKS	ETHICAL RISKS	GEOPOLITICAL RISKS	SOCIETAL RISKS
Unequal access and inclusion to technologies	Lack of justice and fairness	Benefits of AI not shared equally	Redistribution of labor
Highly unequal ownership of AI IP increases inequality	Accountability risks	Ownership of data and access to computational power	Need for up-skilling
Profit efficiencies not shared equally	Loss of human dignity	Redistribution of labor	Loss of agency and increased manipulation
Exclusion from datasets	Loss of privacy	Knowledge sharing and education	AI dependency and loss of autonomy
	Decreased trust	Data security and cyber attacks	Increased divisiveness
	Reduced solidarity	Weaponization of AI	
	Increased bias		

Aiforgood Asia

We Believe in pursuing "Equality from Technology"

- We believe it is of great importance to ensure that AI technologies are used for good, in a **more widespread transparent** and equal way, to ensure that humanity as a whole benefits.

- We believe that technologists have a duty to ensure that these technologies, not only **do no harm**, but are also deployed for reasons other than maximizing profits.

- We believe that AI should be used to **provide greater equality, access, and benefits** rather than create more inequality and geopolitical & societal division.

- We believe this work is especially important in **developing markets like Asia** as they are especially at risk and need to develop local talent and IP to protect from increasing inequality.

OUR BUSINESS PRACTICE

As an International NGO, Science and Technology Organization (STO) registered in Vietnam, we do two things:

Research

Our research goals are to quantifying operationalization of ethics in AI development and measuring the value of doing ESG/R&D Investments. We publish research papers, research studies, white papers, & industry Reports. In partnership Ethical Intelligence.

ESG Projects

Help companies find ESG and R&D community based projects that improve health and welfare, reduce inequality, fight climate change, and aid conservation efforts that protect endangered species and preserve our oceans and forests. Offered as "ESG-as-a-Service"

GLOBAL RESEARCH STUDIES

OBJECTIVES

Our objective is to quantify the impact of operationalizing ethics in the AI development process. We believe that quantifying the outcomes of operationalizing ethics in AI development is a necessary first step in the widespread adoption of ethical frameworks and guidelines and will go a long way to ensuring that AI is used in a way that can mitigate inequality and benefit all of humanity.

01 Quantifying the operationalization of ethics in AI development and deployment

02 Understanding the difference between cognition and behavior of ethics in AI (survey)

03 Quantifying the Value of AI lead ESG projects for shareholder value (industry report / white paper)

Original Research In Partnership with Ethical Intelligence

Research Papers

EHICAL OUTCOMES

Understanding the Ethical Outcomes for Operationalizing Principles in AI Development – Defining Values and mapping them to outcomes in a context based way that technologists can understand.

TOOLS & RESOURCES

Understanding the tools and resources for AI technologists implementing ethics in AI development: Frameworks Guidelines, Toolkits/Dashboards, and Checklists.

LITERATURE REVIEW

Literature review of Resources Available: Policy Papers, National AI Strategies, White Papers and Industry Reports, Books, and Articles, by Ethicists, Conscious Technologists, and Enthusiasts.

Aiforgood Asia

Paper Release

Title: Understanding the Ethical Outcomes for Operationalizing Principles in AI Development

Defining Values and mapping them to outcomes in a context based way that technologists can understand

🔍 Why this is this research important?

🔍 What was the methodology?

🔍 What were the outcomes?
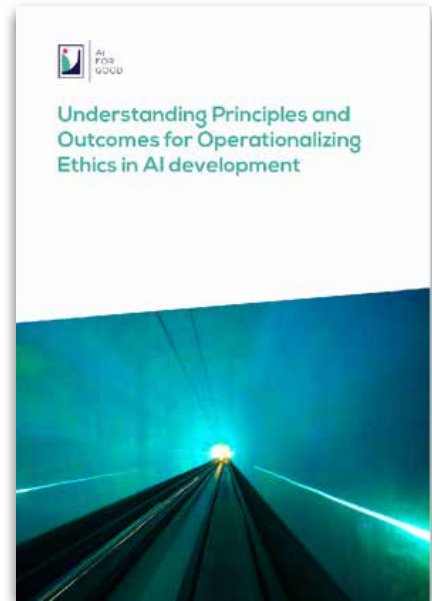
Aiforgood Asia

Paper Details

We identified **8 Principles** and defined them in a contextual way so that technologists can relate to and understand

1. Justice, 2. Accountability, 3. Fairness, 4. Human Dignity,

5. Agency, 6. Privacy, 7. Solidarity, 8. Trust

Then we mapped these <u>Principles</u> to potential negative outcomes in three categories:

1. Human Outcomes, 2., Environmental Outcomes, 3. Economic Outcomes

You can download the paper here: https://www.aiforgood.asia/research

*Photo credit Fan Pengfei

Improve Conservation Management Through Machine Learning & Remote Sensing

PROJECT COLLABORATORS

PROJECT DETAILS

Improving Conservation Management Through Machine Learning & Remote Sensing
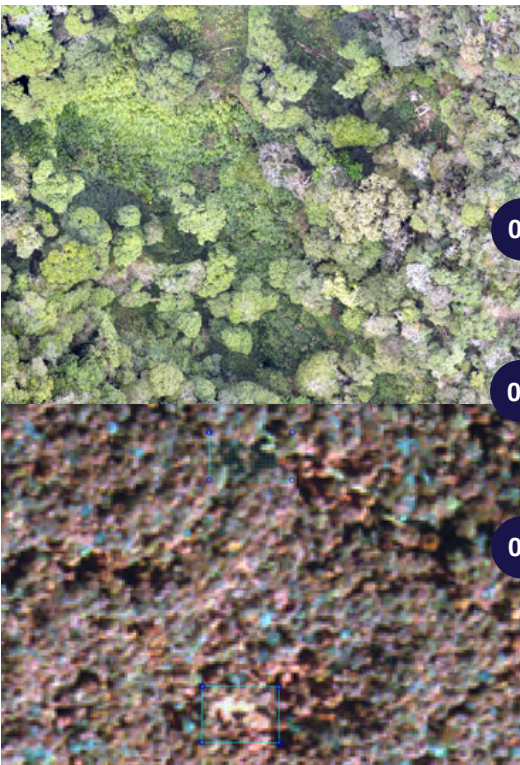
01 **FEASIBILITY**
- Can cardamon be detected using Machine Learning and Remote Sensing ?
- Can we detect degradation through canopy cover?

02 **DATA**
- What image resolution is necessary to detect cardamon?
- What amount of effort is necessary to acquire the necessary ground-truth data?

03 **COST**
- Can a solution be be developed that is scalable on freely available data (Sentinel 2)?
- Can this approach be scaled to other Fauna & Flora International problem statements?

PROJECT CHALLENGES
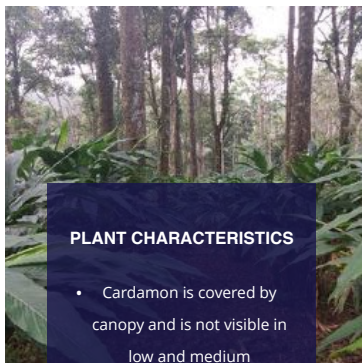
PLANT CHARACTERISTICS

- Cardamon is covered by canopy and is not visible in low and medium resolution satellite images
- Location is very remote
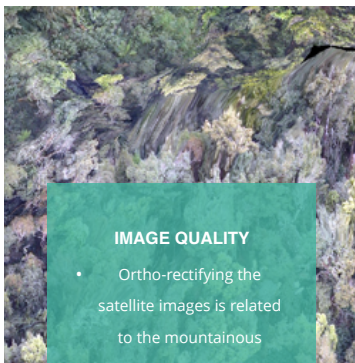
IMAGE QUALITY

- Ortho-rectifying the satellite images is related to the mountainous landscape of the region and its effect on the labeling effort.
- Blurry drone images
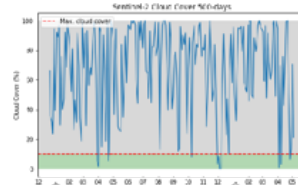
WEATHER CONDITIONS

- Cloud and fog coverage of the region was >70 %

PROJECT SOLUTION
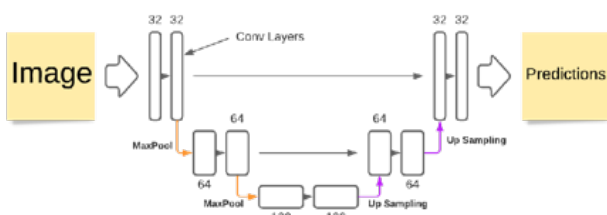
MODEL SELECTION

01 U-Net architecture

02 First Layer input size is 256 x 256 pixels

03 k-fold cross-validation used to limit over-fitting.

Bankable Business Framework

Fincare Advisors LLP

M.D.Sandeep, Business Coach, Managing Partner, Fincare Advisors LLP

1

Agenda

Bankable Business Framework

CIBIL MSME Rank

Fincare

What do we do?

- Capital
- Consulting
- Coaching
- Compliance

Fincare

BANKABLE MSME
bankablemsme.in

Professionalism   Profitability

Products   Process   People

Purpose

Fincare
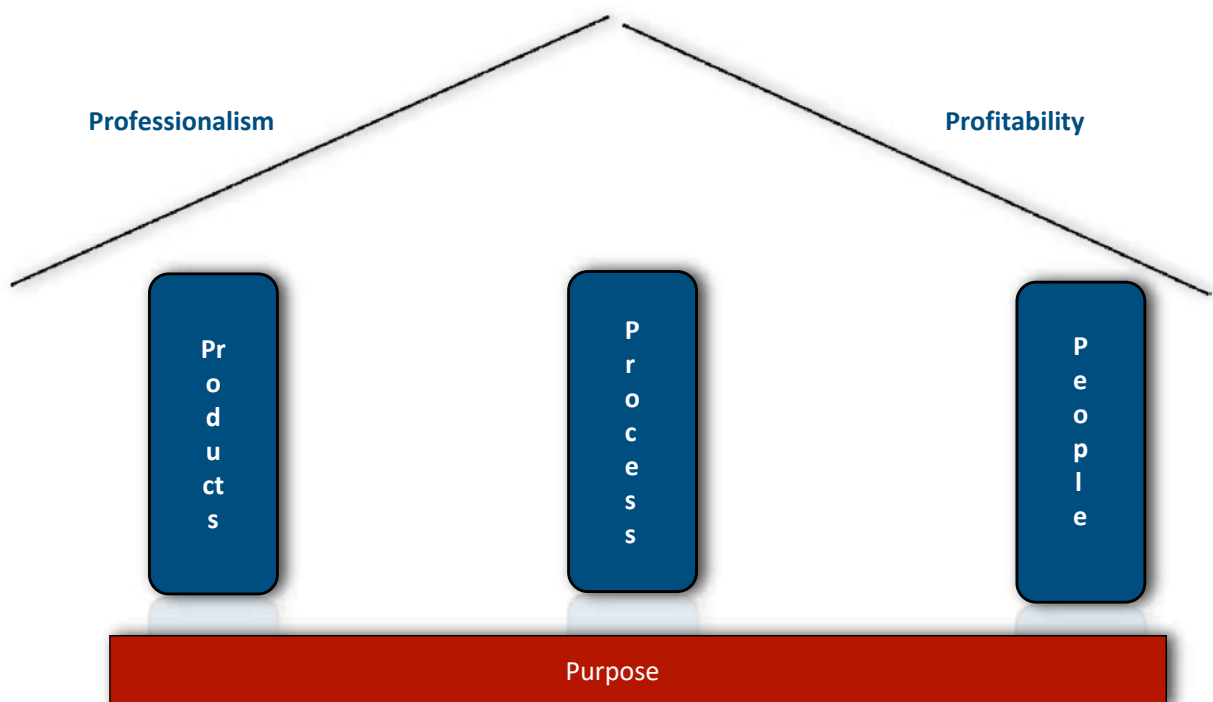
Products :Competitive Vs Globally Competitive /Needs vs Wants

1. **Product wise revenue and EBIDTA margins.**

2. **Identification of Consumer Pain Points**

3. **Yearly Upgrade of Products/Launch of new Products**

4. **Product Innovation as part of business strategy.**

5. **Tie Ups with Product Design Institutions.**

Process

1. **Outcome vs Process: Tweaking Established Process**

2. **Quality Circles/Kaizen: Continuous Improvement with 3 to 12 People meeting regularly.**

3. **Suggestions Implemented Vs Total Suggestions**

4. **Trends & Metrics**

5. **OEM's-> Tier I ->Tier II-> Tier 3**

"To achieve manufacturing competitiveness the most valuable asset is the People"

Sri.R.C.Bhargava,Chairman, Maruti Suzuki Ltd.

People

1. **Enterprise,People and its Products should be bankable to Consumers,Vendors,Investors/Bankers..Etc**

2. **Technical Capabilities Vs Managerial Competence :**

3. **Growth Mindset: Promoters -> Workforce**

4. **Promoters Lifestyle: Grandeur vs Extremely Elegant**

5. **Workmen would participate in the growth story only if they believe that part wealth created would be shared among them.**

Professionalism & Profitability -Learning Triangle

Experiences

Experts   **Executives**

Fincare   BANKABLE MSME
                           bankablemsme.in
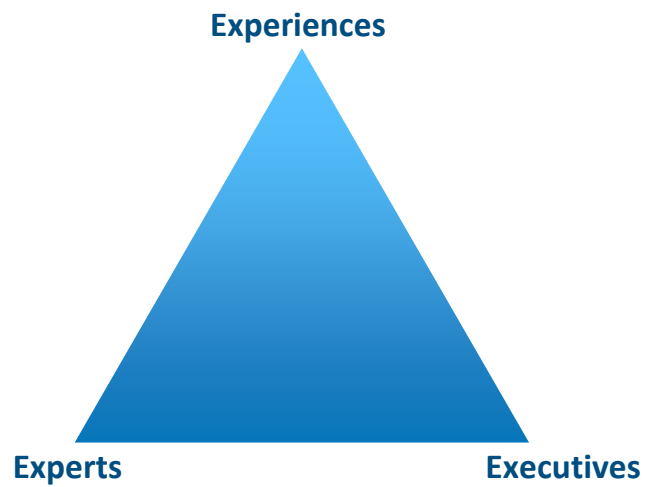
Professionalism & Profitability -Story Triangle

Content

Connect   **Context**

Fincare   BANKABLE MSME
                           bankablemsme.in
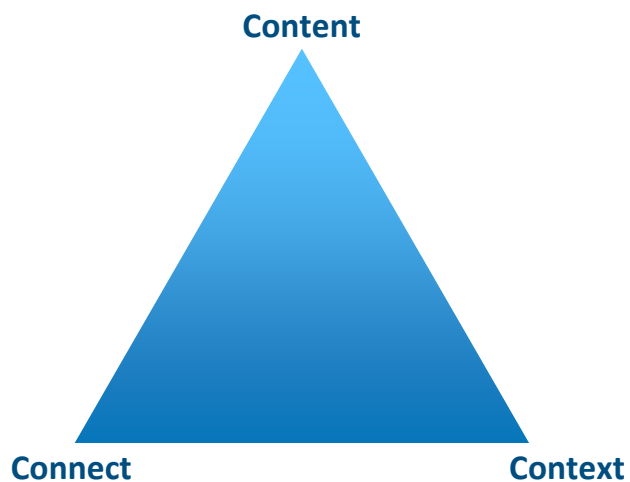
CIBIL MSME Rank

PILLARS
- Ability
- Willingness

PARAMETERS
- Liquidity Risk
- Credit Behaviour
- Firmographics

CIBIL MSME Rank

CIBIL MSME Rank is a grade assigned to the MSME based on Credit Profile,Credit Behaviour and Firmographics.

CMR is on a scale of 1 to 10, CMR 1 being the least risky MSME and CMR 10 being the most risky MSME

DR. SHARMILA NAGRAJ
Director,
Dhruva College of Fashion Technology,
Hyderabad, India.

The Indian economy has undergone a large structural shift in the last eight years and is currently the 5th largest economy in the world after overtaking the United Kingdom.
And
We are going to be number three soon...

Source: shorturl.at/cGKV8

To Be what we can be:

Role of MSME in the contribution of The Indian economy while keeping the Role in fulfilling the SDGs

Source: shorturl.at/cGKV8

Background on MSMEs
According to the World Bank, Micro, Small and Medium Enterprises (MSMEs) are defined as follows – micro enterprises: 1–9 employees; small: 10–49 employees; and medium: 50–249 employees.

However, the local definition of MSMEs vary from country to country, and is based not only on number of employees, but also by inclusion of other variables such as turnaround and assets.

MSMEs play an important role in the wider eco-system of firms. Start-ups and young firms, which are generally small or micro firms, are the primary source of net job creation in many countries and are the driving force of innovation and sustainability in the private sector.

There are about 365-445 million MSMEs in emerging markets: 25-30 million are formal SMEs, 55-70 million are formal micro, and 285-345 million are informal enterprises.

Source: shorturl.at/gijy7

The SDG targets are ambitious and require transformation of public and private activities.

- New business models
- Bringing in new innovation/technology
- Doing business differently – more sustainably and more ethically.

This process opens up new business opportunities for the private sector in general and particularly for MSMEs.

According to the Business and Sustainable Development Commission, sustainable business models could open economic opportunities worth $12 trillion and create 380 million jobs by 2030, with more than 50 per cent1 being located in developing countries.

Presentation by Dr.Sharmila Nagraj Nandula | Director Dhruva College of Fashion Technology-Hyderabad | 09-09-2022 | ICSDAI_2022

113

Goal 1. End poverty in all its forms everywhere

∞ MSMEs create employment that life people out of poverty
∞ Informal enterprises engage poor and marginalised populations
∞ individual MSMEs have the potential to adopt actions in their business practices to contribute to the GOAL
∞ New business models/solutions of MSMEs that will help achieve SDGs

Small businesses help alleviate poverty through micro-franchising

Micro-franchising uses elements of traditional franchising and targets small businesses. It is broadly defined as small businesses that can easily be replicated by following proven marketing and operational concepts. The study 'Poverty Alleviation as a Business' documented micro-franchising examples where profitable supply chains have been created through small businesses delivering useful products or services that are directly alleviating poverty. Some of these examples are:

Village Farm and Forestry programme. A female entrepreneur in Bangladesh runs a village farm and forestry programme as a social insurance scheme. She runs one of the 2500 private nurseries that deliver almost 100 million tree saplings every year. Trees have become a profitable crop for 650,000 families; they serve as an asset as they can be sold at any point. The tree can be chopped in case of an emergency (e.g. a child's sickness).

The treadle pump. Over 1 million pumps have been sold to small and marginal farmers. On half an acre, they can grow more vegetables or other crops and make an average additional income of $ 100 per year. Around 10,000 microenterprises supply, sell and install the pumps in Bangladesh, India and Nepal.

Micro–concrete roofing tiles. Over 2,000 workshops operate in more than 35 countries; they produce 150,000 roofs per year. The technology is supported by an international network. The cost-effective building materials can have a big scope for small enterprises and contribute to closing the housing gap.

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Business examples supporting MSMEs

The Okata Farm and Food Processing. Founded by a women entrepreneur, Okata Farm and Food Processing is a small enterprise in Ghana with 32 employees. The enterprise worked with over 3200 farmers producing organic crops including maize, rice and soy. 80% of the farmers who Okata works with are women. Focusing not only on business profits, Okata has won national and international awards recognizing its socially and ecologically-responsible business models. The company helps women farmers gain access to financial resources and provide trainings for them on organic farming and food fortification. Contributions of the company has helped women and youth in communities earn more income, in addition to planting organic crops with higher nutrition and market values. In December 2017, Okata Farm and Food Processing was selected as the second-best farm of Ghana with the recognition of their contributions to improving food and nutrition security among low income population group among communities they work with.

Goal 5. Achieve gender equality and empower all women and girls

∞ **A significant proportion of MSMEs are women-owned /led**
∞ **MSMEs employ women**
∞ **Inclusive finance can bridge the gender gap**
∞ **Individual MSMEs have the potential to adopt actions in their business practice to contribute to the goal**

Gender balance in business promotes sustainability

Women employees and women leaders in business prioritize sustainability. A study by Net Impact found that 60 percent of employed women said it was very important to work for a company that prioritises social and environmental responsibility, compared to 38 percent of men.53 Evidence also shows that companies with more women on their boards are more likely to invest in renewable power generation, low-carbon products, and energy efficiency.54 Women-owned enterprises and women leaders are core to changing business practice and culture towards sustainability.

An example is Green Strategy. 55 Anna Brismar is the founder and owner of Green Strategy, a consultancy firm specialized in circularity and sustainability issues of the fashion, apparel and textile industries on a global scale. She is the owner and developer of the online platform Circularfashion.com, which is the world's first platform dedicated exclusively to circularity issues in the fashion, apparel and textile industries. She is also the founder and head of the Circular Fashion Network, an international network of professionals working with circularity and sustainability issues in the fashion and textile industries.56 Principles of design being promoted in the company include durability and longevity, use of nontoxic and biodegradable materials, and ethical attitudes towards society and environment. They are also promoting recycling through the development of effective and safe technologies.

Goal 6. Ensure availability and sustainable management of water and sanitation for all

∞ **Agricultural and food supply chain MSMEs can conserve water.**
∞ **Ensure that the workplace has appropriate WASH facilities and advocate for WASH amongst employees.**
∞ **Prioritize water efficiency by installing best-practice technologies for water conservation.**
∞ **Educate employees about the importance of water efficiency.**
∞ **Prohibit the use of chemicals and materials that can be particularly detrimental to water quality if improperly disposed.**

Startups with water and sanitation solutions

cewas Start-Up Programme Switzerland was initiated in 2011 and targets young entrepreneurs.66 The programme consists of sector-relevant lectures providing the knowledge that allows participants to develop an idea, create a strong business model, pitch the idea to the water sector at the International Water Week in Stockholm, develop the idea and manage the business model. Expert coaches provide one-on-one coaching such as technical or business advice, introduce the startups into their network and assist with funding options. The programme lasts for one year and as of 2018, 54 start-ups and MSMEs have participated.

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

- ∞ **MSMEs have the potential for becoming more energy efficient**
- ∞ **MSMEs can be incentivized by larger enterprises to integrate sustainable practices in their operations.**
- ∞ **Pursue energy efficient certifications.**
- ∞ **Prioritize energy efficiency across all operations, including preserving light, heating, cooling.**
- ∞ **Invest in skills development so that qualified personnel can enable clean technology adoption.**

MSMEs deliver clean energy

Simpa Networks. Simpa Networks provide
s a basic, portable solar home system in an off-grid utilities model to base of the pyramid customers in India.79 The system includes a low-cost meter connected to a cloud-based software that enables Simpa to track customer usage. Customers purchase the system with an initial down payment and then select how much energy credit to purchase. A portion of this payment covers the repayment cost of the system, while the rest goes to Simpa as profit and to cover operational costs. Once fully paid (typically within two to three years), the system unlocks permanently and continues to produce electricity for the customer for free. Simpa has installed over 15,000 solar home systems in India and is rapidly growing.

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Individual MSMEs have the potential to adopt actions in their business practices to contribute to the goal. They can offer apprenticeship opportunities 93 and foster an entrepreneurial culture and invest in/mentor young entrepreneurs. MSMEs could also instill a firm policy against unfair hiring and promote decent work standards. Diversifying MSME lending modalities and financial products

Idepro94 in Bolivia is a cooperative that has a specific "Procadenas" lending product aimed at providing financing across the value chain of specific sectors and connecting various businesses along this chain with one another. Starting in various agro-forestry products, such as quinoa, grapes, castañas and forestry products, Idepro has now also expanded its value chain financing to textiles, transport and construction.

The Regional MSME Investment Fund for Sub-Saharan Africa95 is a debt fund with a focus on financing microfinance institutions, local commercial banks and other financial institutions that serve MSMEs. The fund has disbursed US $150 million to 42 lending institutions and to over 195,000 micro clients in 17 countries.

The ICICI Bank MSME programme in India96 provides non-traditional financial services to MSMEs.
To evaluate credit risk, the programme uses market segmentation and a "360 degree" approach.
Credit scorecards (based on industries, linkages or market segments), MSME value analyses, relationship manager site visits
and personal references are used to evaluate the credit worthiness of each MSME.
ICICI has an MSME client base of almost 1 million enterprises.

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

The SDGs promote resource-use efficiency and greater adoption of environment-friendly industrial processes. This transition of businesses and the economy will open up business opportunities; MSMEs are well-suited to replicate and commercialise technology and add value in a range of areas, such as software, nanotechnology, biotechnology and clean technologies.106 Supporting MSMEs in the uptake of these new technologies and business fields will require capacity building, knowledge and technology transfer, financial resources and an enabling policy framework conducive for promoting the ease of doing business.

re.gen.er.ate verb to recreate, reconstitute, or make over, especially in a better form or condition.
We acknowledge that clothing is part of human experience.
It is a basic need.
We understand that current clothing production and consumption patterns must be changed. We are committed to transform the way that fashion is designed, produced and consumed, from being less harmful, to being sustainable and regenerative along the value chain.
We work to REGENERATE fashion.

Goal 12. Ensure sustainable consumption and production patterns

∞ **Reduce manufacturing impacts by substituting raw materials in products with post-consumer materials through recycling and upcycling.**

∞ **Significantly reduce waste and ensure that any unavoidable waste is utilized to the fullest degree (e.g. organic waste as fuel or fertilizer).**

∞ **Conduct a simple audit to see where money is being spent, what waste it relates to and what MSME entrepreneurs could do to prevent negative environmental impacts as the first step to develop an impact reduction plan**

One of the challenges for MSMEs to participate in green public procurement is the need for use of ecolabels and certifications, which incurs costs, resources and expertise that MSMEs are not able to cover. The Brazilian Development Bank (BNDES) offers a credit card to MSMEs (through several commercial banks), with up to 48 months to pay and preferential interest rates, which can be used to pay for raw materials and other goods, as well as for services, such as metrology, standardization and conformity assessment services (calibration, laboratory tests, certifications), such as ISO certification provided by entities accredited by the national accreditation body.

Presentation by Dr.Sharmila Nagraj Nandula | Director Dhruva College of Fashion Technology-Hyderabad | 09-09-2022 | ICSDAI_2022

117

Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

∞ An integrated global economy as envisaged in this goal is associated with the rise of global value chains (GVCs). GVCs and the digital transformation offer new opportunities for MSMEs to integrate into the global economy.

∞ Greater flexibility and the capacity to customize and differentiate products can give MSMEs a competitive advantage in global markets, as they are able to respond rapidly to changing market conditions and to test with shorter product life cycles.

∞ Some niche international markets are dominated by MSMEs, and innovative small enterprises are often key partners of larger multinationals in developing new products or serving new markets.

Before / After

COURTESY OF CIRC

EFI is a flagship programme of the International Trade Centre, a joint agency of the United Nations and the World Trade Organization.

UN ALLIANCE FOR SUSTAINABLE FASHION

ITC | Ethical Fashion Initiative

Artisanal Co-operatives → Central Coordination Unit (Hub) → International Clients
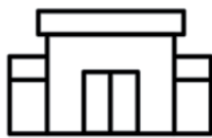
THE EFI COMPLIANCE SCHEME

1. Compliance with the EFI code of conduct, fair labour standards and living wage
2. Impact assessment
3. Protection of the environment
4. Transparency and traceability

Since 1985, Patagonia has pledged 1% of sales to the preservation and restoration of the natural environment. We've awarded over $140 million in cash and in-kind donations to domestic and international grassroots environmental groups making a difference in their local communities.

Artificial Intelligence & Intellectual Property Rights

Dr. Rohit Saraswat

M. Pharm, Ph.D.

Dean, Pharmacy & Research

SunRise University Alwar(Raj.)
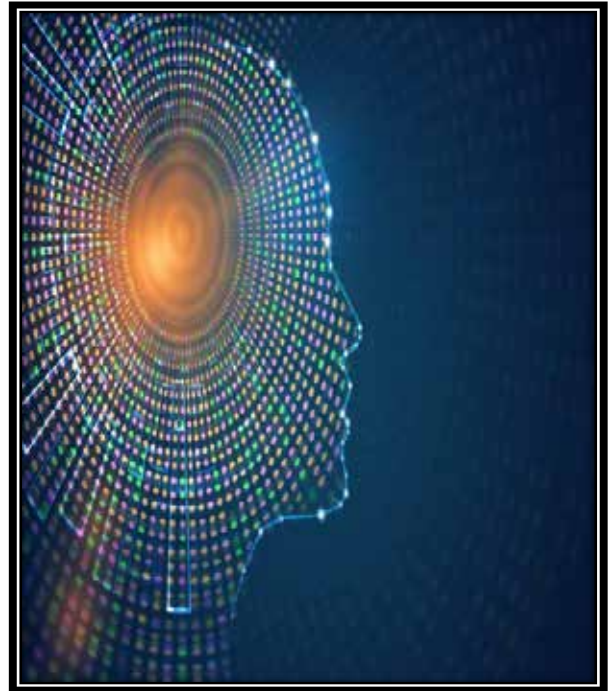
I believe there is no deep difference between what can be achieved by a biological brain and what can be achieved by a computer. It, therefore, follows that computers can, in future, emulate human intelligence and exceed it

-Stephen Hawking

What is Artificial Intelligence?

- First coined by Mr. John McCarthy in 1956, a scientist considered to be the father of AI:

  "The ability of a digital computer or computer controlled robot to perform tasks commonly associated with intelligent beings"

  encyclopedia Britannica

  "AI challenges the once sacred notion that intelligence and creativity is the exclusive preserve of humans"

Artificial Intelligence

- Artificial Intelligence can be categorized as

➢ Weak Artificial Intelligence

➢ Strong Artificial Intelligence

- Weak or narrow Artificial intelligence is the kind of system which is designed to perform a specific task

e.g.: Apple's Siri, Amazon's ALEXA

- Strong Artificial intelligence or Artificial General Intelligence is the kind of AI system which consists of generalized human cognitive abilities.

e.g.: Chitti in Rajanikant's movie Robot

Features of AI System

CREATIVE
- Capable of creating new products

AUTONOMOUS
- Able to execute high level tasks with limited or no human intervention

RATIONAL INTELLIGENCE
- Mimic human perception and cognitive abilities

CAPABLE OF LEARNING
- Gather data and feedback and process these to improve their ability

Sophia
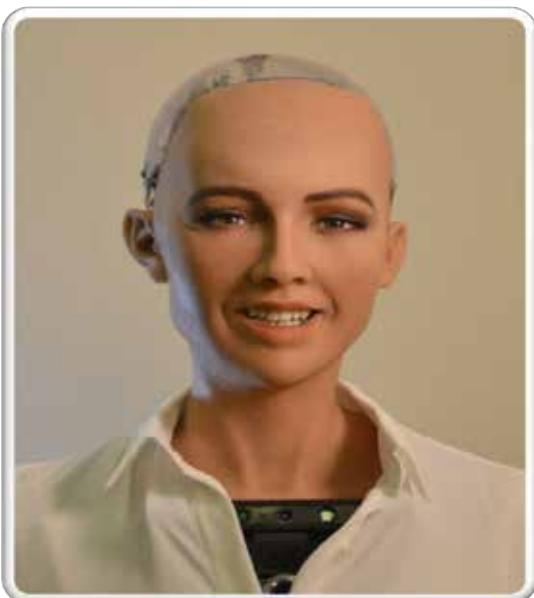
- Citizen of Saudi Arabia
- Public Speaker
- Has silicon skin and over 60 facial expression
- She has given several interviews
- Even has a family-Seven siblings including "Han" her brother.

Tesla –Self Driving Car-**Autopilot**

- It's features are
  - Lane centering
  - Traffic-aware cruise control
  - Automatic lane changes
  - Semi-autonomous navigation on limited access freeways
  - Self-parking
  - The ability to summon the car from a garage or parking spot.

AlphaGo Zero

- **AlphaGo** is the first computer program to defeat a professional human Go player.
- In just 3 days, AlphaGo Zero self learned to play the Chinese board game Go, perfected the art and beat world grandmaster at the game by 100:0.

USES OF AI

- Artificial Intelligence is now being used in almost all spheres of life.

- Artificial Intelligence has played a major role for the development of Computer Science, Smart cars, Music and Streaming.

- In the field of agriculture it has helped in growth of crops.

- An AI tutor in the classrooms would be of great help for a better and wide understanding of subject.

- Artificial Intelligence has the best use in Hospitals and the medical field.

Property

Tangible

Intangible

Movable
Car

Immovable
Building

Patent
Trademark
Copyrights
GI, Trade
Secrets
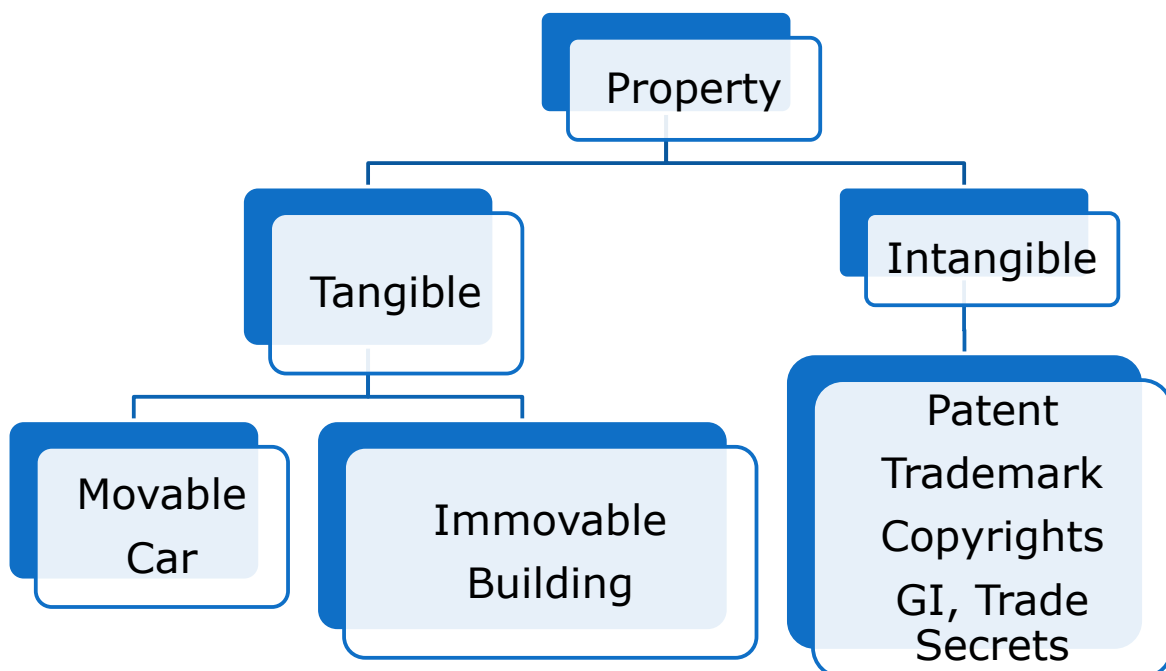
What is Intellectual Property ?

➢Intellectual Property is something produced using human intellect which has commercial value.

➢Often intangible in nature, but usually contained on a tangible, fixed medium- paper, CD, computer chips…..

What is Intellectual Property Right ?

- Not to be confused with IP
- It is a <u>right</u> vested in the asset, not the asset itself.

For example,

➢ An idea / invention is IP, a patent registration is an IPR.

➢ A particular way of representation is IP, copyright or a design registration is an IPR.

➢ A brand / trade name is IP, a trade mark registration is an IPR.

IP and IPR continued...

- *Intellectual Property Right* (IPR) is the statutory right granted by the Government, to applicant(s) or owner(s) of an intellectual property (IP) to exclude others from exploiting the IP commercially for a given period of time, in lieu of the discloser of his/her IP in an IPR application.

Types of IPRs

```
        Patents              Copyrights


Trademarks      ( IPRs )              GI


      Traditional         Industrial
      Knowledge           Designs
```
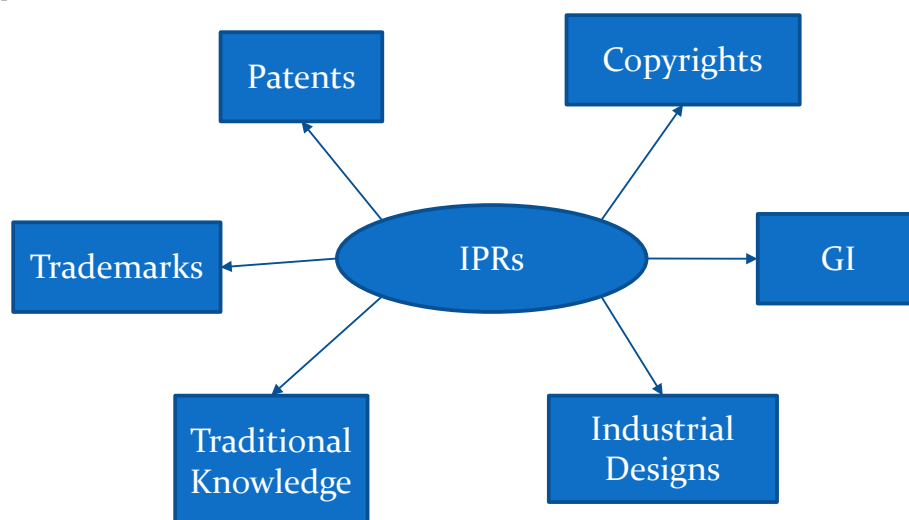
Types of IPRs continued...

- **IPRs** are protected in accordance with the provisions of the corresponding legislations of a country. In India, IPRs can be **protected** and **monopolized** under the provisions of different Acts.

- **Patent** (to protect technologies - The Patent Act)

- **Trade Mark** (to protect words, signs, logos, labels –The Trade Mark Act)

Types of IPRs continued...

- **Design** (to protect outer ornamental configuration –The Designs Act)

- **Geographical Indications (GI)** (to protect region specific product –The Geographical Indications of Goods Act)

- **Copyright** (to protect literary and artistic work –The Copyright Act)

All kinds of IPRs are territorial rights

Patent

Patent is an exclusive right granted to an applicant/patentee by the Government, for a limited period to practice the invention (manufacture, use and sale), in exchange of full disclosure of his invention for excluding others, from making, using, selling, importing, the patented product or process producing that product.

Patent continued…

- An *invention* in general means a new discovery, relating to a product (machine) or a process, even to an existing module or idea.

- An **invention** according to Indian Patent Act means:

➢ A **new** product or process,

➢ involving an **inventive step**

➢ Capable of **industrial application**

Patent continued...

Therefore any:

- Product (e.g. device, machine, composition)
- Process (used for preparing a tangible product),

  is patentable, **Only** if the product or process is**:**

➤ New (novel).

➤ Involving an inventive step (non-obvious).

➤ Is of industrial use (useful).

Who can apply for patent?

An application for a patent for an invention may be made by a person:

- Who is claiming to be the true and first inventor of the invention or his assignee.
- By the legal representative of inventor

Copyrights ©

- Exclusive right given by law for a certain term of years to an author, composer etc.(or to his assignee) to print , publish and sell copies of his original work. Copyright (or author's right) is a legal term used to describe the rights that creators have over their literary and artistic works.

What can be protected?

- Literary works such as novels, poems, plays, reference works, newspaper articles
- Computer programs, databases
- Films, musical compositions, and choreography
- Artistic works such as paintings, drawings, photographs, and sculpture
- Architecture
- Advertisements, maps, and technical drawings

Eligible for copyright protection

- literary works
- musical works, including any accompanying words
- dramatic works, including any accompanying words
- pantomimes & choreographic works
- pictorial, graphic, & sculptural works
- motion pictures & other audiovisual works
- sound recordings
- architectural works

Issues faced by AI w.r.t IPR

➢ Patentability of AI

➢ Copyright of AI generated work

➢ Proprietary issues of inventorship of AI

➢ Lack of adequate regulations and standards for AI related inventions

Issues faced by AI w.r.t IPR Continued...

- In India, we have an absolute ban on the patentability of algorithms and computer programs unless it produces a technical effect or technical contribution which will be difficult to establish in an AI related invention.

- According to the section 3 (k) of the Indian Patent Act, mathematical and business methods, computer programs per se or algorithms are categorized as non-patentable subject matter.

Issues faced by AI w.r.t IPR Continued...

- Patent law further attributes exclusive rights only to the true and first inventor, specifically to a natural person
- According to the WIPO publication 1055 – Technology Trends 2019, the most predominant AI functional applications have been filed in the fields of telecommunications, transportation and life and medical sciences
- IBM has the largest portfolio of AI related patent applications with 8,290 patent applications in the world,
- Microsoft with 5,930 patent applications second largest

Issues faced by AI w.r.t IPR Continued…

- In India, the Copyright Act, 1957(Indian Copyright Act) requires that a work must be original and must have been expressed in a fixed form to qualify for copyright protection.

- The Indian Copyright Act does not define originality and the courts have interpreted the criterion of originality on a case-by-case basis.

- Under Indian law, only a natural person may be considered the author of a copyrightable work.

Issues faced by AI w.r.t IPR Continued…

- Many jurisdictions are unwilling to confer copyright protection to work created by AI persons

- The United States copyright office has stated that only works created by human beings can be copyrighted

- In 2012, An Australian court declared that any work generated by computer is not protected under copyright laws

- Same decisions were taken by European Union.

Conflict Between AI & IP Law

- The development of Artificial Intelligence has resulted in conflict between Artificial Intelligence and Intellectual Property Law

- In case of a weak Artificial Intelligence a human has full control over the machine whereas in case of a strong Artificial Intelligence the machine thinks for itself and the human has less control over it.

Legal risks associated with IP and AI

- The basic objective of copyright is to encourage authors and composers to create original works and to grant them protection from infringement of copyright.

- Artificial Intelligence is able to produce literary works. This creates the existence of copyright in the area of Artificial Intelligence.

Legal risks Continued...

- E.g. -In the case of "Burrow Gilles Lithographic Co V Sarony" granting of copyright protection to a product which is the result of a machine was discussed. The Court held that purely mechanical labor is per se, not creative.

- The US Copyright Office (USCO) once again rejected the copyright request for an AI generated work of art on the basis that AI created image "lacks the human authorship necessary to support a copyright claim

ARTIFICIAL INTELLIGENCE AND PATENT

- A Patent is an exclusive right that is granted to a person who has invented something that is new and useful

- Artificial Intelligence can make inventions by the help of human instructions. An invention in order to be patentable should satisfy three criteria. They are-
- ➢ Novelty
- ➢ Inventive step and
- ➢ Industrial Application
- In case of Artificial Intelligence
- –No Novelty   No- Inventive step
  Only Industrial Application

Key Note Presentation

on

"ASSESSMENT OF SOFTWARE RELIABLITY USING A TECHNIQUE OF ARTIFICIAL INTELLIGENCE: Nuero Fuzzy"
By

Dr. BONTHU KOTAIAH

Assistant Professor, Department of Computer Science and Information Technology, School of Technology,
Maulana Azad National Urdu University(MANUU), Gachibowli, Hyderabad - 500032

What is Artificial Intelligence..?

- Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems.

- Specific applications of A.I. include Expert Systems, Natural language Processing(NLP), Speech recognition and Machine vision.

- Here we are using one of the techniques of Artifical intelligence called **Nuero-Fuzzy** to assess the software reliablity while implementing a model.

What is a Nueral Network..?

- A Neural network is a method in artificial intelligence that teaches computers to process data in a way that is inspired by the human brain.

- It creates an adaptive system that computers use to learn from their mistakes and improve continuously.

- A neuron is the basic unit of a neural network. They receive input from an external source or other nodes. Each node is connected with another node from the next layer, and each such connection has a particular weight. Weights are assigned to a neuron based on its relative importance against other inputs.

- The artificial neural networks attempt to solve complicated problems, like summarizing documents or recognizing faces, with greater accuracy.

Generalized Block Diagram of a Neural Network
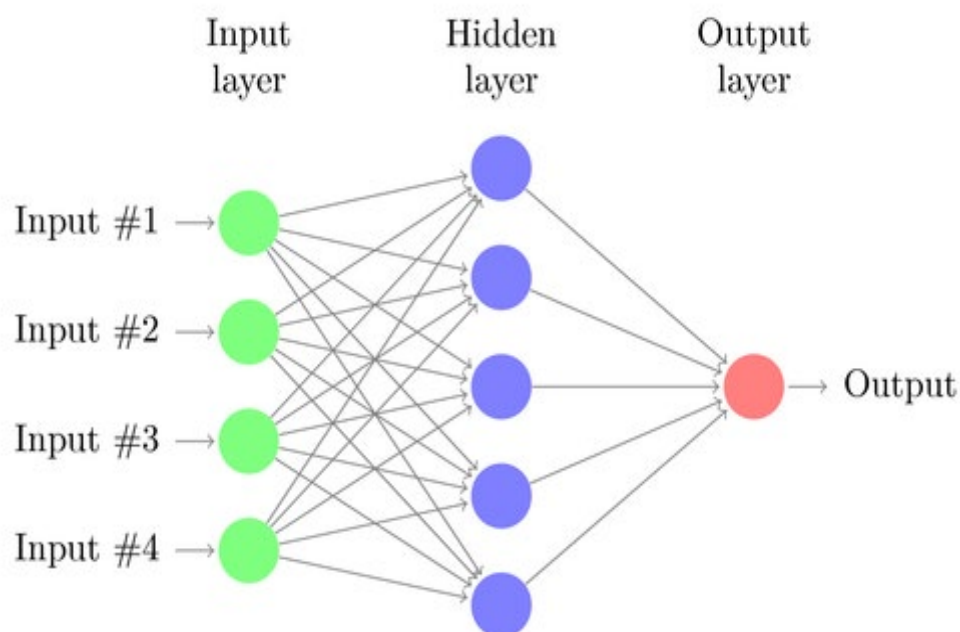
What is Nuero Fuzzy..?

- A neuro-fuzzy system is a fuzzy system that uses a learning algorithm derived from or inspired by neural network theory to determine its parameters (fuzzy sets and fuzzy rules) by processing data samples through fuzzification and defuzzification.

- A neuro-fuzzy system is based on a fuzzy system which is trained by a learning algorithm derived from neural network theory. The learning procedure operates on local information, and causes only local modifications in the underlying fuzzy system. A neuro-fuzzy system can be viewed as a 3-layer feed forward neural network.

- The first layer represents input variables, the middle (hidden) layer represents fuzzy rules and the third layer represents output variables. Fuzzy sets are encoded as (fuzzy) connection weights. It is not necessary to represent a fuzzy system like this to apply a learning algorithm to it. However, it can be convenient, because it represents the data flow of input processing and learning within the model.

- A neuro-fuzzy system can be always (i.e.\ before, during and after learning) interpreted as a system of fuzzy rules. It is also possible to create the system out of training data from scratch, as it is possible to initialize it by prior knowledge in form of fuzzy rules.

- A neuro-fuzzy system approximates an 'n'-dimensional (unknown) function that is partially defined by the training data. The fuzzy rules encoded within the system represent vague samples, and can be viewed as prototypes of the training data. A neuro-fuzzy system should not be seen as a kind of (fuzzy) expert system, and it has nothing to do with fuzzy logic in the narrow sense.

Structure of Adaptive Neuro Fuzzy Inference System
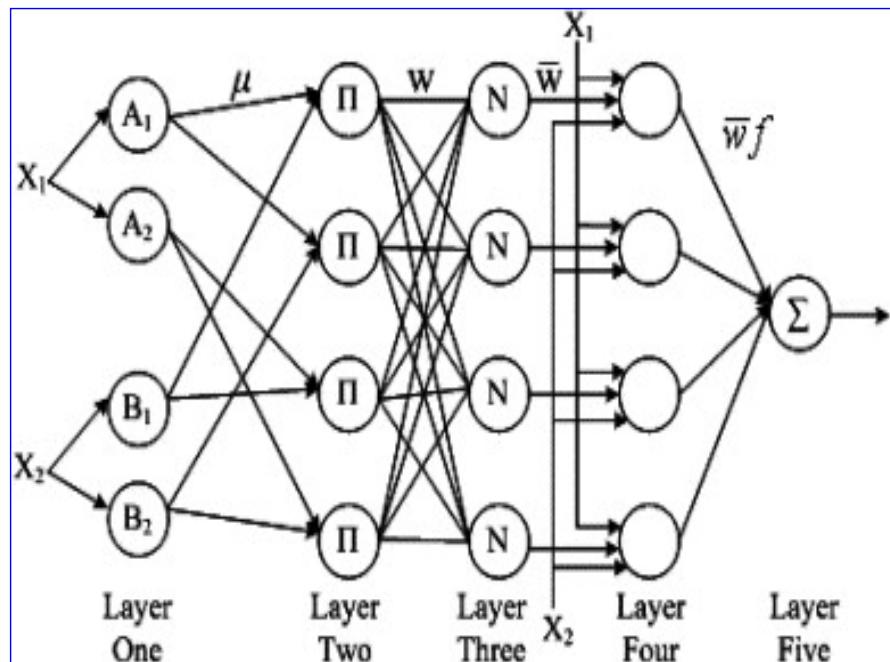
Software Quality and Reliability

➤ **Software quality** is very important factor for every software development process.

➤ Among the attributes of software quality, reliability is generally accepted as one of the major factor in software quality since it quantifies the failures.

➤ **Software Reliability(SR)** is defined as "The probability of failure-free operation of Software over a specified period of time in a specified environment".

What are the main objectives..?

➢ To develop a model for the assessment of Software Reliability based on Neuro Fuzzy Systems approach and to implement it.

➢ To train the neural network with some collected Software Reliability parameters (at design phase of SDLC) mapped to numerical data and are loaded into neural network at input layer.

➢ To assess and evaluate the performance of the trained network for Software Reliability at the design level with some numerically approximated values by using fuzzy membership function (sigmoid).

➢ To compare the approximated Software Reliability against the expected reliability approximation.

➢ To adjust at the input layer of Neuro Fuzzy model so as to minimize the difference between actual and expected values of reliability.

Implementation

➢ The problem of Software Reliability modeling can be split to 3 sub-problems:

1. Selection of the Software Reliability model structure.

2. Estimation of the Software Reliability model parameters like MTTF [78] (Mean- Time-To-Failure) and Mean- Time- To- Repair (MTTR) , MTBF and availability etc.,

3. Evaluation of the model prediction capabilities

Implementation

➢ A Neuro Fuzzy interference model is designed for the assessment of reliability of a software growth model, the algorithm mainly focuses on Normalized MTBF and Availability which is calculated and analyzed theoretically and practically.

➢ Fuzzy rules employed for the proposed model are:

▪ If MTBF (Mean time Between Failure) >0.8 & availability >0.8 then reliability is very high
▪ If 0.7<MTBF <0.8 & 0.7< availability <0.8 then reliability is high
▪ If 0.6<MTBF <0.7 & 0.6<availability <0.7 then reliability is moderate
▪ If 0.5<MTBF <0.6 & 0.5< availability <0.6 then reliability is low
▪ If 0.4<MTBF <0.3 & 0.4<availability <0.3 then reliability is very low.

Different Phases of the model

• In order to assess the reliability of software during design phase using Neuro Fuzzy Logic, the model is divided into five phases.

i. Identification Phase
ii. Quantification Phase
iii. Measurement Phase
iv. Verification and Validation Phase
v. Finalization Phase

Implementation
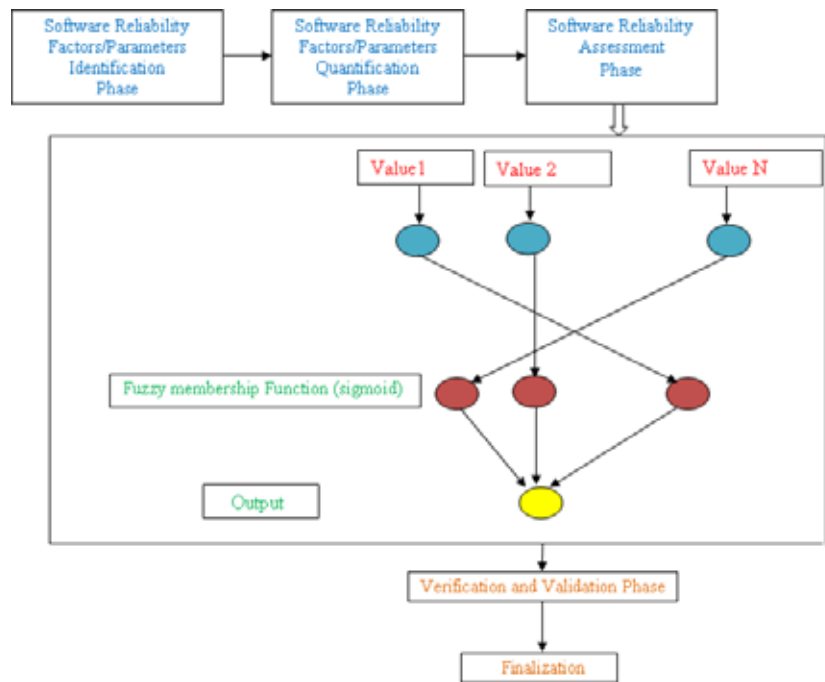
Mathematical Approximation

➢ For approximating the values of the proposed model metrics, a quantitative approach is adopted for calculating the appropriate results. The formula that has been used to calculate approximated values is defined as:

Formula: $Ca(x_i) = C(a) - h \times f(a)$, based on Euler's theorem

Where, $C(a)$ = Set of Measured values.

'h' can be derived by,

$x_1 + x_0 \, n \, h$

Where, n= no. of values in the dataset. $x_0 = 0$ and $x_1 = 1$ (since the probability ranges from 0 to 1). Here 'x' is MTBF.

f(a) can be a reliability function, denoted as,

$f(a) = MTBF/(1 + MTBF)$

Mathematical Approximation

Ca (x_i) is the set of values to be approximated.

Procedure for 'h' Calculation

Let us take, $x_0 = 0$ and $x_1 = 1$ then, $1 = 0 + 17 * h$, $h = 1/17 = 0.058$

➢ At least 5 to 10 iterations are performed to arrive at good approximated Software Reliability value. At every iteration, to calculate % of Reliability, use the following formula:

% of Reliability = (Average of Approximated values)/ (Average of Measured values) * 100

➢ At final iteration, if the approximated value falls above 99.00%, then the study can say that it is good approximation.

Simulation and results
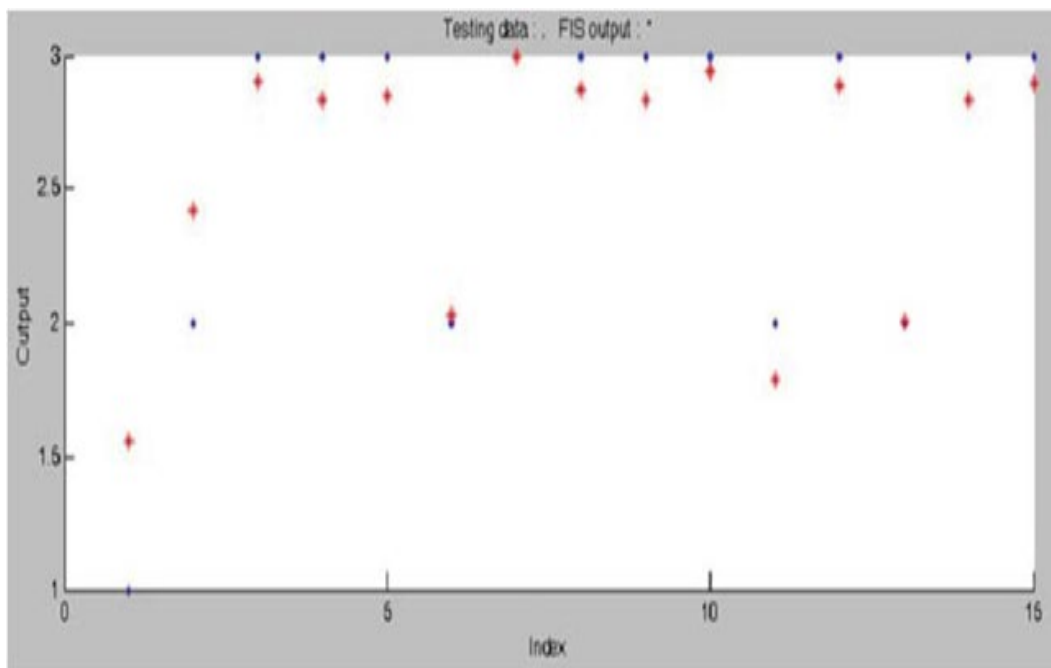
TEST DATA Vs FIS OUTPUT

Relationship between MTTF, MTTR, MTBF
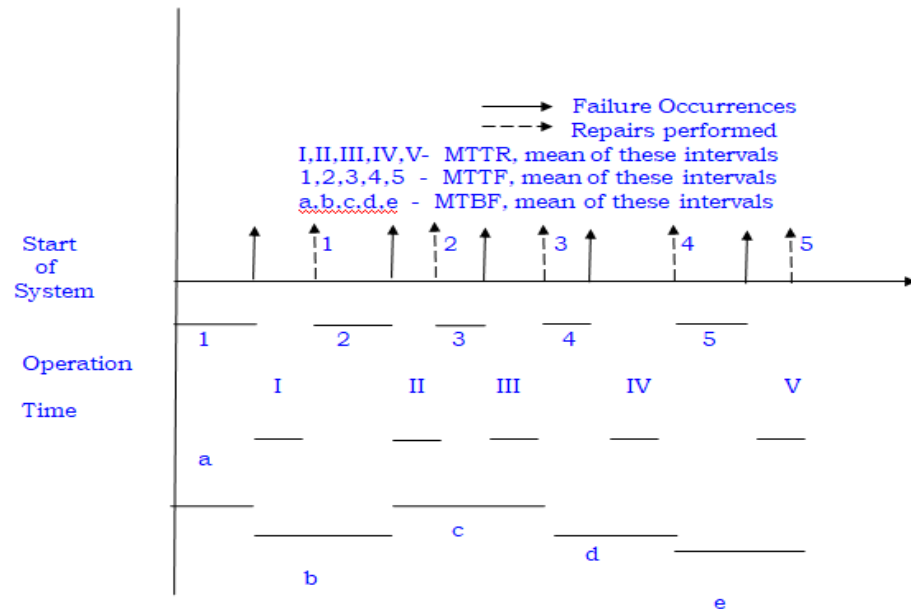
Factors that should be considered

Software Reliability = MTBF / (1+MTBF).

Normalized MTBF = (sum of MTBF values observed)/ number of readings.

Availability = MTBF/(MTBF+MTTR) , is the likelihood that a software system will work at a given time.

➢ In the study, the parameters used are a combination of normalized MTBF and availability to arrive at the effective assessment of Software Reliability using the proposed approach.

Chi-Square Test for Aproximated Software Reliability

➢ A **chi-squared test** is a statistical test commonly used to compare observed data with data the researchers would expect to obtain according to a specific hypothesis.

➢ The chi-square test is always testing what scientists call the **null hypothesis,** which states that there is no significant difference between the expected and observed result.

Table: Calculation of Chi-Square for Approximated Software Reliability (SR)

x	Observed frequency(f_i)	Expected Frequency (e_i)	f_i-e_i	(f_i-e_i) / e_i^2
1	45.18	1.426104	43.7539	21.51366
2	20.78	1.426104	19.3539	9.516256
3	46.05	1.426104	44.6239	21.94144
4	23.51	1.426104	22.0839	10.85859
5	15.32	1.426104	13.8939	6.83159
6	24.09	1.426104	22.6639	11.14377
7	38.5	1.426104	37.0739	18.22913
8	86.14	1.426104	84.7139	41.65357
9	33.784	1.426104	32.3579	15.91028
10	17.12	1.426104	15.6939	7.716644
11	4.80	1.426104	3.373896	1.658935
12	8.43	1.426104	7.003896	3.443795
13	5.03	1.426104	3.603896	1.772025
14	8.46	1.426104	7.033896	3.458546
15	11.08	1.426104	9.653896	4.746792
16	14.18	1.426104	12.7539	6.271055
17	9.69	1.426104	8.263896	4.063333

INTERNATIONAL CONFERENCE
ON
ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE DEVELOPMENT 2022 (ICSDAI-22)

SPONSORED BY
Ministry Of MSME New Delhi, Government of India

Organized By
Multipurpose Awareness Society Hyderabad, India

A
Seminar on
ARTIFICIAL INTELLIGENCE IN FIELD OF PHARMA AND HEALTHCARE SYSTEM

Date:09th & 10th September, 2022

Dr.Kumaraswamy.Gandla

M.Pharm.,Ph.D.
Professor & Head, Department of Pharmacy,
Chaitanya (Deemed to be University), Hanamkonda-Telangana.

Artificial Intelligence in field of Pharmacy

Contents

2

Applications of AI in Pharma & Healthcare

1. Improvement in Diagnosis Process.
2. Advancement in Clinical Trial Research.
3. Innovation in Drug Discovery.
4. Betterment in Patient Care.
5. Revolution in Pharmaceutical R & D.
6. Better Accuracy in Epidemic Prediction.
7. Conducting Repetitive tasks.
8. Managing Data.
9. Analyzing Healthcare Systems.
10. Leveraging the Advantages of Natural-language processing.
11. Making Medical Consultation Process Digital.
12. Maximizing the Benefits of Digital Nurses.
13. Managing Medications.
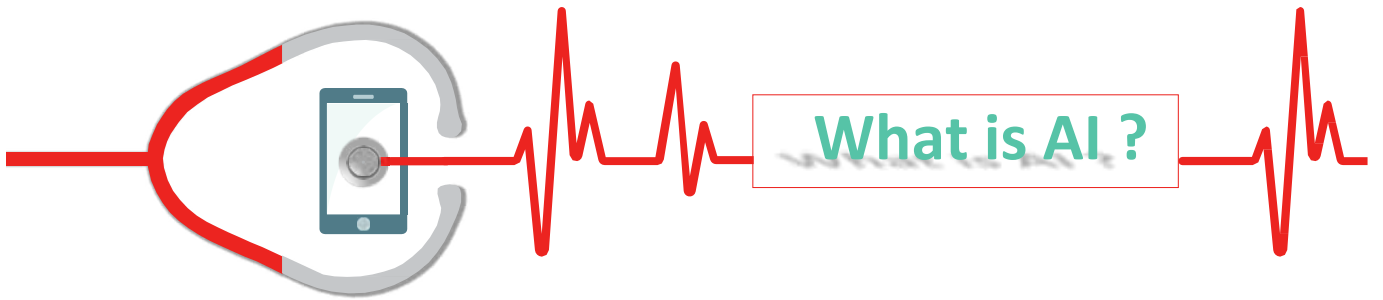
INTRODUCTION

- According to Father of Artificial Intelligence(AI), John McCarthy, AI is ,
"The science and engineering of making intelligent machines"

- Artificial intelligence refers to the ability of a computer or a computer enabled robotics system to process information and produce outcomes in a manner similar to the thought process of human in learning , decision making and solving problems.

- AI has a great potential to **transform drug discovery** by accelerating the research and development timeline, in an effort to make drugs more affordable and improve the probability of FDA approval. The tech can also help with the repurposing of new drugs, especially during the COVID-19 pandemic

DIGITAL TRANSFORMATION

New <u>research</u> has shown that the global pharmaceutical industry spends a significant amount of revenue on research and development (R&D) activities <mark>that are failing to deliver projected returns</mark> but that <u>digital transformation</u> with <u>artificial intelligence</u> (AI) is seen as a major step forward towards enhancing R&D productivity and effectiveness.

In 2019, the pharmaceutical industry spent $83 billion dollars on R&D

In 2020 there was a basic shift to Digital R&D which focuses on

> automation
> leverages AI
> Adapts to ML
> data analytics

to improve decision making as <u>AI can predict which research will translate to clinical trials</u>

In this way, AI and analytics contribute to better products by improving foundations for design decisions.

Imagine a Future !!! Or is it happening in the present

- AI is able to design new drugs
- Find new drug delivery opportunities
- Deliver clinical trials within minutes
- Drugs are not tested on real humans or animals ,but on virtual model that are engineered to mimic the physiology of organs.
- Robots help in the manufacturing of medication as well as their distribution
- AI helps in process optimization and control
- Batches are released virtually
- Counterfeiting drugs become almost impossible.
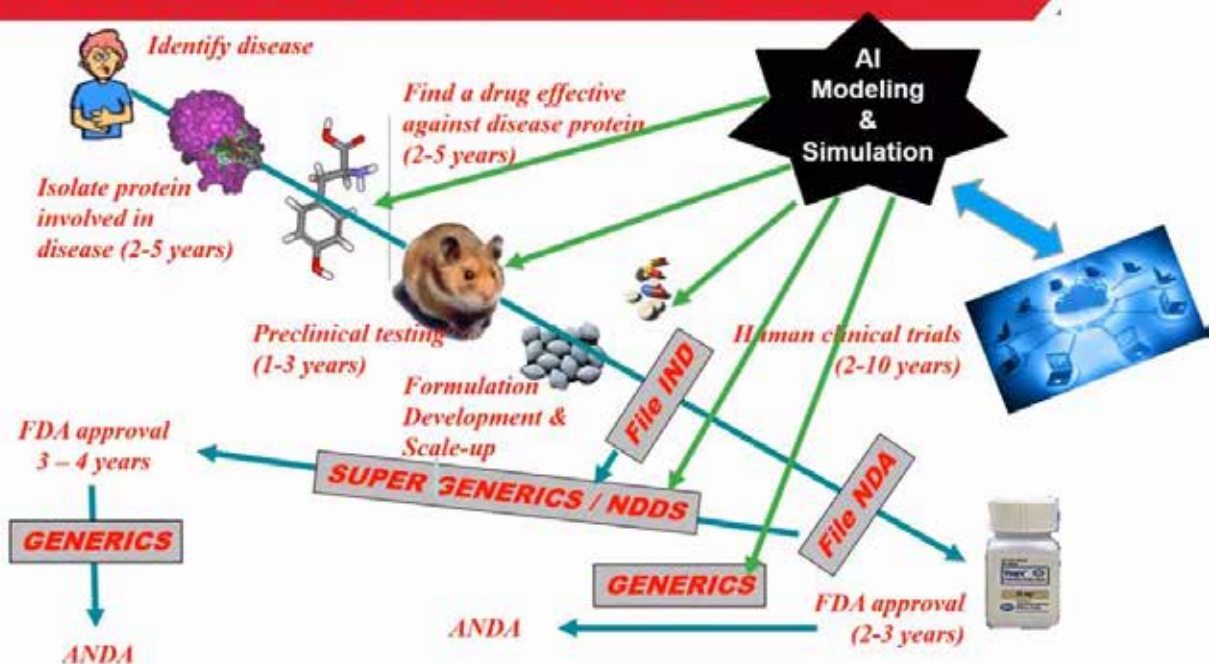- Block-chain technology secures the entire distribution channel.
Future ?????
- Local pharmacists 3D prints personalised drugs in any shape & desired dosage, Doctors print organs …..
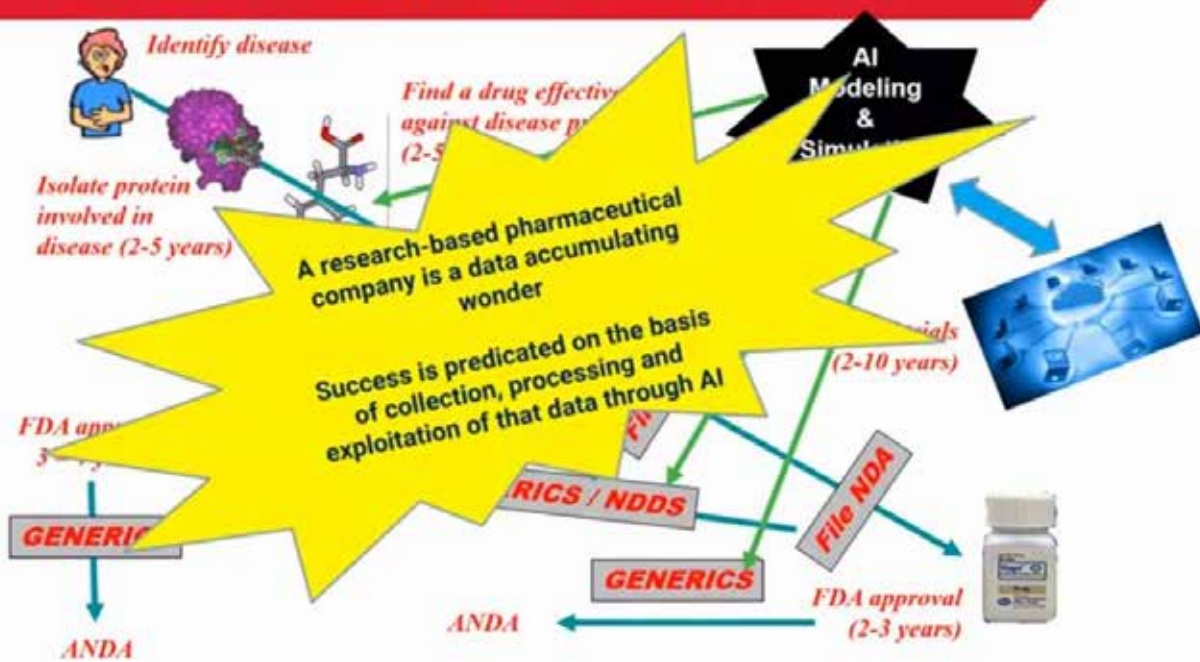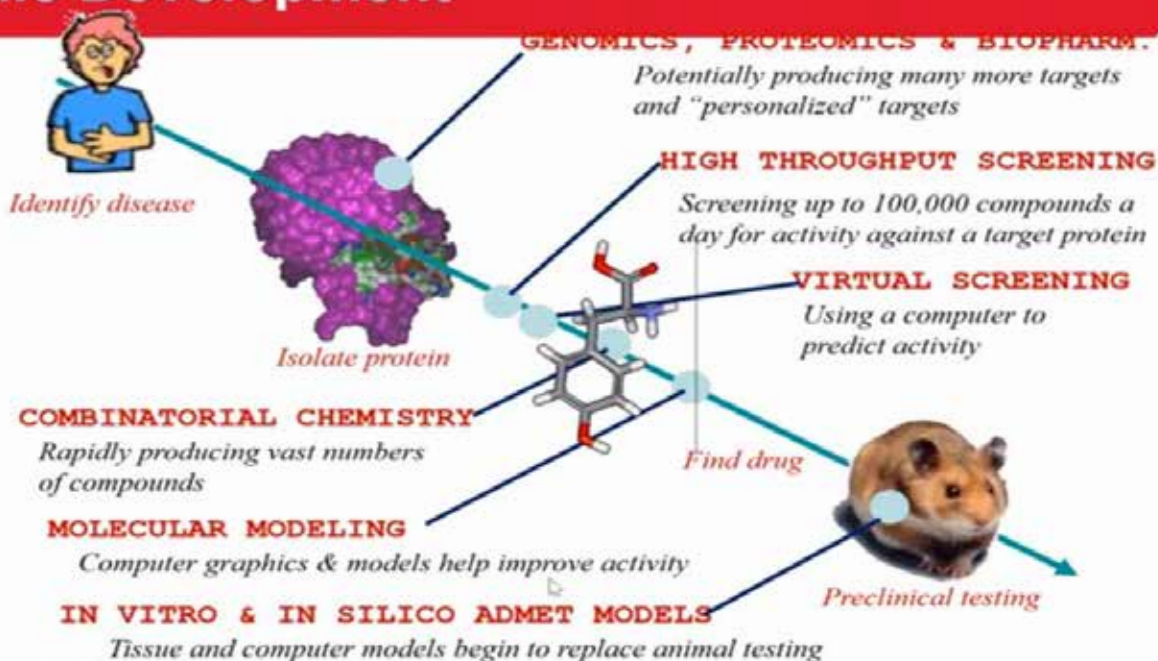- Chips in Brain ….

Steps Of Drug Discovery

Target Selection	Lead Discovery	Medicinal Chemistry	In Vitro Studies	In Vivo Studies	Clinical Trials
Cellular & Genetic Targets	Synthesis and Isolation	Library Development	Drug Affinity and Selectivity	Animal models of Disease States	Phase-I
Genomics	Combinatorial Chemistry	SAR Studies	Cell Disease Models	Behavioural Studies	Phase-II
Proteomics	Assay Development	In Silico Screening	MOA	Functional Imaging	Phase-III
Bioinformatics	High Throughput Screening	Chemical Synthesis	Lead Candidate Refinement	Ex-Vivo Studies	Phase-IV

From Molecule Development to Medicine

From Molecule Development to Medicine

Molecule Development

DRUG DISCOVERY PROCESS

- It is driven by chemistry, but guided by pharmacology & clinical sciences.
- It has a large impact from advances in molecular biology and genomic sciences like re-combinant proteins and monoclonal antibodies
- Genome sciences combined with bioinformatics tools help to dissect the genetic basis of multifactorial diseases and to determine the most suitable points of attack for future thereby increasing the number of treatment options
- The use of bioinformatics has opened up a new area of research
- The computational techniques assist in searching drug target and in designing drug in silico
- The biotech industry is also establishing itself as a discovery arm of the pharmaceutical industry by becoming an effective instrument in tech transfer

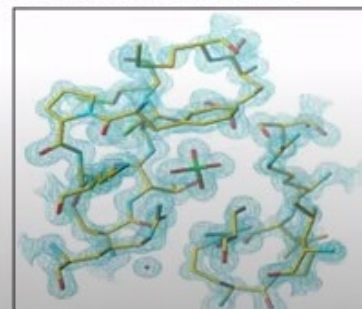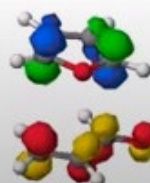# DRUG DISCOVERY

In silico approach or CADD

Virtual screening

Bio computing and molecular modelling in drug discovery
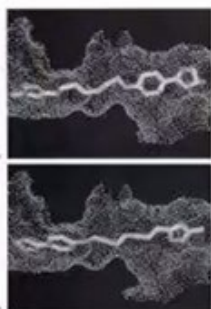
Fragment based molecule build up

Image of HIV integrase (green) with a bound inhibitor (space filling) from a database screen of the NCI chemical respository done in the CADD
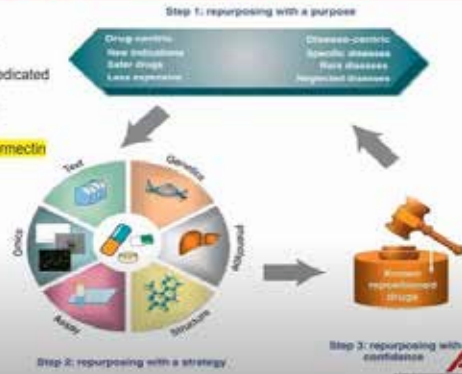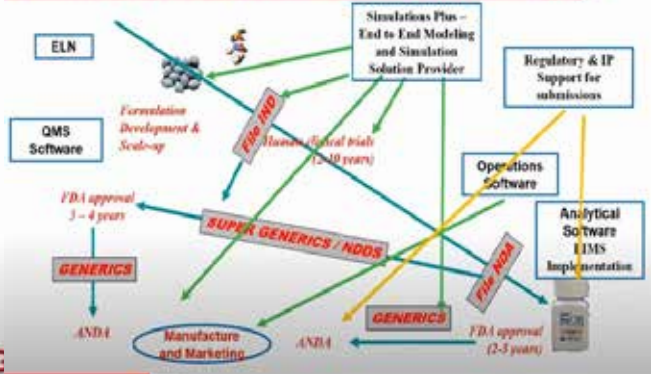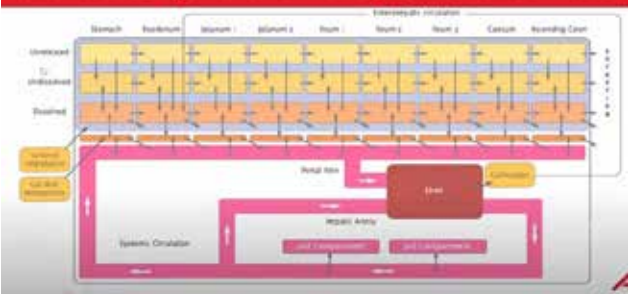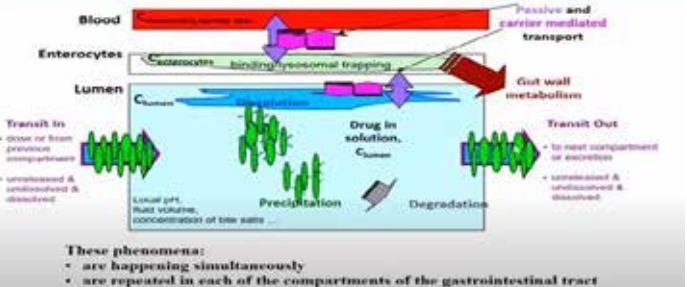
Materials and Method

5

AI in field of Pharmacy

- It is one of the top technologies **shaping the future of pharmacy.**
- Pharma industries has been developing cure & treatment for centuries. Traditionally the design & manufacturing of drug requires several years, lengthy clinical trials & huge costs.
- With the rise of 21st century technologies, this has been changing.
- In future we will see completely **different drug designs, manufacture & clinical trials.**

6

Why AI in Pharma is a good idea ?

- Pharmaceutical industry can accelerate innovation by using technological advancements.
- The recent technological advancement that comes to mind would be artificial advancement such as **visual perception, speech recognition, decision-making** & translation between languages.
- An estimate by IBM shows that entire healthcare domain has approx. **161 billion GB of data** as of 2011.
- With humongous data available in this domain, AI can be of real help in analysing the data & presenting results that would help out in decision making, **saving human effort,time,money** & thus help save lives

7

Imagine a Future where,

- AI is able to **design new drugs**
- Find **new drug combination**
- Deliver **clinical trials within minutes**
- Drugs are not tested on real humans or animals ,but on **virtual model** that are engineered to mimic the physiology of organs.
- Robots help in the **manufacturing of medication** as well as their distribution
- Counterfeiting drugs become almost impossible.
- Block-chain technology secures the entire distribution channel.
- Local pharmacists **3D prints** personalised drugs in any shape & desired dosage

8

Investments in AI

Last year, Verdict AI asked businesses how vital artificial intelligence will be in their respective industries and over **70% of them thought it would be very important**. From the same group, only 11% of businesses have not considered investing in AI technology.

Furthermore, according to Narrative Science, **61% of companies** investing in innovative strategies are using AI to identify opportunities that they would have otherwise missed. For pharmaceutical businesses that thrive on innovation, this is an important statistic to understand.

9

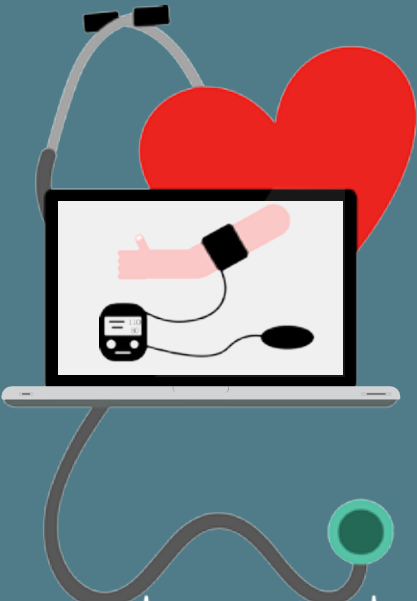## 10 AI Applications That Could Change Health Care

APPLICATION	POTENTIAL ANNUAL VALUE BY 2026	KEY DRIVERS FOR ADOPTION
Robot-assisted surgery	$40B	Technological advances in robotic solutions for more types of surgery
Virtual nursing assistants	20	Increasing pressure caused by medical labor shortage
Administrative workflow	18	Easier integration with existing technology infrastructure
Fraud detection	17	Need to address increasingly complex service and payment fraud attempts
Dosage error reduction	16	Prevalence of medical errors, which leads to tangible penalties
Connected machines	14	Proliferation of connected machines/devices
Clinical trial participation	13	Patent cliff; plethora of data; outcomes-driven approach
Preliminary diagnosis	5	Interoperability/data architecture to enhance accuracy
Automated image diagnosis	3	Storage capacity; greater trust in AI technology
Cybersecurity	2	Increase in breaches; pressure to protect health data

11

STEP 1
A new drug is introduced to the market. Patients begin to use it

STEP 2
Our system scans various data resources to find adverse reactions of the new drug

STEP 3
The AI algorithm recognizes **forum** and **social media** entries about adverse drug reactions

STEP 4
The system analyzes and summarizes the information and presents it in a form of a **human-readable report**

Applications
of AI

13
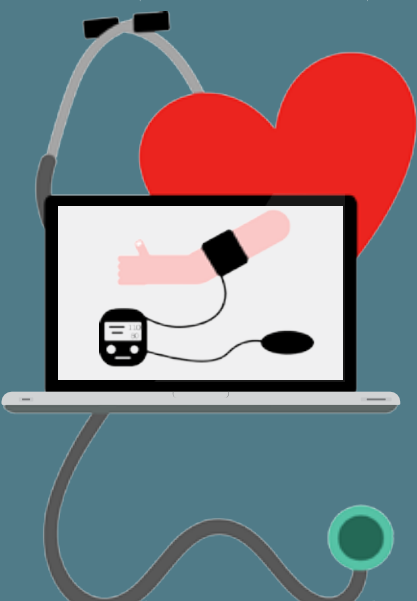
- **Disease Identification**

- **Radiology And Radiotherapy**

- **Clinical Trial Research**

- **Drug Discovery**

- **Personalized Medicine & Rare Disease Identification**

14

Disease Identification

Berg, an innovative US biopharma company, is using AI to research and develop **diagnostics and therapeutics** in the fields of **oncology, endocrinology, and neurology.**

Their unique AI-based Interrogative Biology platform combines patient biology and AI-based analytics to identify differences between **healthy and disease environments.**

15

Radiology & Radiotherapy

This is an area in which AI has been speculated to play a major role in the future.

Presently, **Google's DeepMind Health** is working on machine learning algorithms to detect differences between healthy and cancerous tissues.

The goal is to improve the **accuracy** of radiotherapy planning while **minimizing damage to healthy organs** at risk.

16

Clinical Trial Research

Advanced predictive analytics can **analyze genetic information** to identify the **appropriate patient population for a trial.**

Artificial Intelligence can also **determine the optimal sample sizes** for **increased efficiency** and **reduce data errors** such as duplicate entries.

17

Drug Discovery

A study published by the Massachusetts Institute of Technology (MIT) has found that only **13.8% of drugs successfully pass clinical trials**. Furthermore, a company can expect to pay between **$161 million to $2 billion** for any drug to complete the entire clinical trials process and get FDA approval.

With this in mind, pharma businesses are using AI to increase the **success rates of new drugs while decreasing operational costs at the same time.**

Ideally, this would also translate to **lower drug costs** for patients, all while offering them more treatment choices.

18

Personalized Medicine & Rare Disease Identification

Using AI, body scans can **detect cancer** and other diseases early, as well as predict health issues people might face based on their genetics.

Although far from perfect, **IBM Watson for Oncology** is currently the

leader in AI for personalized treatment decisions in the oncology space. It uses each patient's medical information and history to optimize the treatment decision-making. Recently, Watson correctly diagnosed a rare form of leukemia in a patient originally thought to have acute myeloid leukemia. It reportedly examined millions of
oncology research papers in 10 minutes after which it successfully diagnosed the patient and recommended a personalized treatment plan.

19

Scope for Further Research
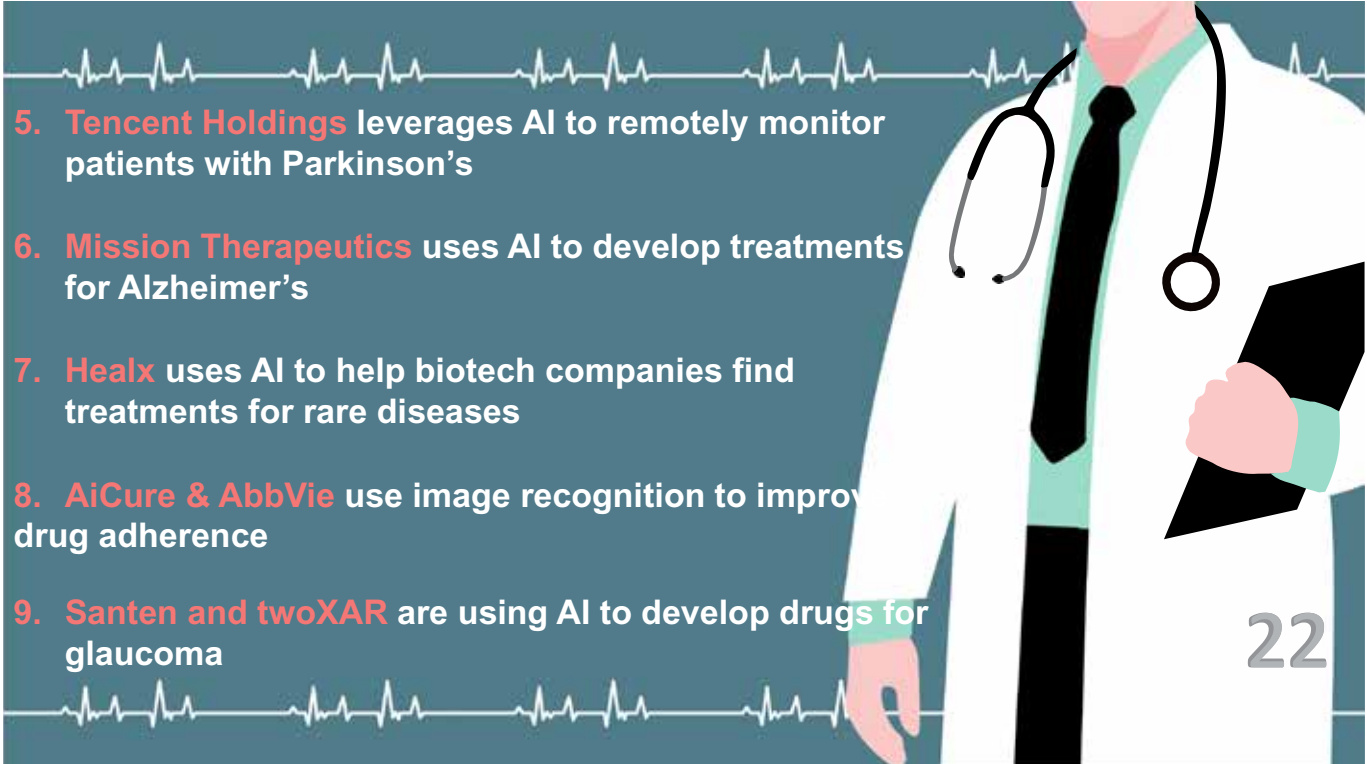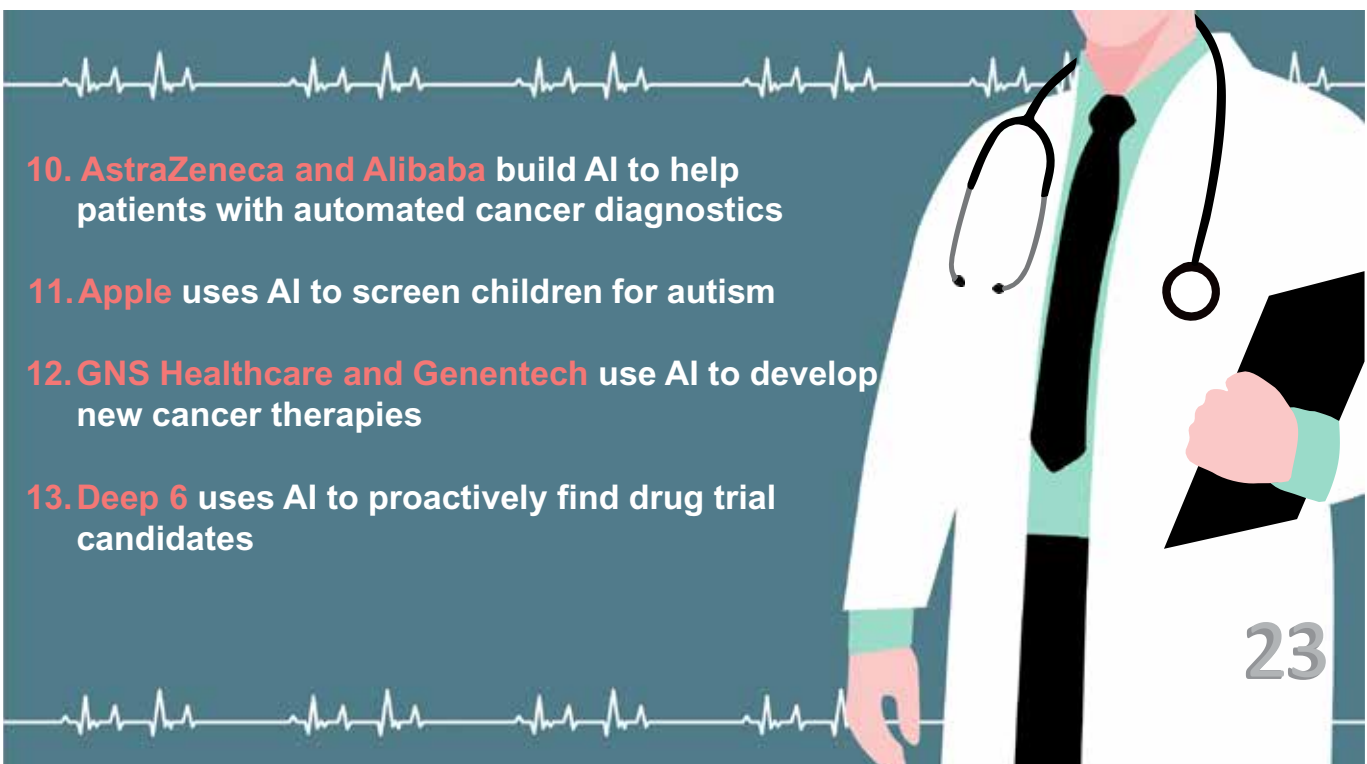
Recent AI Adoptions

1. **Novartis** **uses AI to predict untested components researchers should explore to find new cures**

2. **IBM Watson** **helps match patients with the right drug trials**

3. **Verge Genomics** **uses AI to predict the effect of new treatments for patients suffering from ALS & Alzheimer's**

4. **Bayer and Merck & Co** **uses AI algorithms to identify pulmonary hypertension**

5. **Tencent Holdings** leverages AI to remotely monitor patients with Parkinson's

6. **Mission Therapeutics** uses AI to develop treatments for Alzheimer's

7. **Healx** uses AI to help biotech companies find treatments for rare diseases

8. **AiCure & AbbVie** use image recognition to improv̶ drug adherence

9. **Santen and twoXAR** are using AI to develop drugs for glaucoma

22

10. **AstraZeneca and Alibaba** build AI to help patients with automated cancer diagnostics

11. **Apple** uses AI to screen children for autism

12. **GNS Healthcare and Genentech** use AI to develop new cancer therapies

13. **Deep 6** uses AI to proactively find drug trial candidates

23

Risks & Disadvantage Associated with AI

- As theoretical physicist Prof.Stephen Hawking had said that *human efforts to create machines that can think are a huge threat to the existence of human race* & the race to develop a complete human AI could mean that the human race would come to an end in the future.

- **High cost** - creation of AI requires huge costs as they are very complex machines

- **Unemployment** - AI can cause unemployment as things would be automated in this system as there is need of less human labour

- No Match For Human Brain Intelligence
- No Improvement With Experience
- No Original Creativity

Conclusion

AI is doubtless the **next big thing** for pharma. Companies that are more flexible and adopt AI faster will likely gain a strategic advantage. In fact, experts anticipate that implementing AI will soon be necessary to compete in the industry.

However, the transformation will not happen overnight. Instead, it will gradually occur over the **next 10 or 20 years**.
By then, AI is expected to be integrated into most, if not all, pharma R&D operations. In turn, this should theoretically improve the drug development success rate and streamline R&D efforts.

International conference on AI for Sustainable Development - 2022 published in "Girijana Samsruthi News" Telugu Daily on 28/6/22 for conference publicity in Domestic Level.

సెప్టెంబరు 9, 10 తేదీల్లో అంతర్జాతీయ సదస్సు

జీడిమెట్ల, ఆగస్టు1: మల్టీపర్పస్ అవేర్ నెస్ సొసైటీ ఆధ్వర్యంలో మినిస్ట్రీ ఆఫ్ మైక్రో స్మాల్ మీడియం ఎంటర్ప్రైజెస్ సహకారంతో సెప్టెంబరు 9, 10 తేదీల్లో నగరంలోని తాజ్ మహల్ హోటల్లో 'కృత్రిమ మేధతో సుస్థిర అభివృద్ధి' అంశంపై అంతర్జాతీయ సదస్సు నిర్వ హించనున్నట్లు మల్టీపర్పస్ అవేర్నెస్ సొసైటీ ప్రెసిడెంట్, కాన్ఫరెన్స్ కన్వీనర్ బోడ నాగేశ్వరావు తెలిపారు. సోమ వారం జీడిమెట్లలోని మల్టీపర్పస్ అవేర్ నెస్ సొసైటీ కార్యాలయంలో ఏర్పాటు చేసిన విలేకరుల సమావేశంలో ఆయన వివరాలను వెల్లడించారు. ఈ సంద ర్భంగా ఆయన మాట్లాడుతూ ఈ సద స్సులో విద్యార్థులు, పారిశ్రామికవేత్తలు, ఉద్యోగులు, ఎన్ఆర్ఐలు పాల్గొని విజ యవంతం చేయాలని, వివరాలకు 8985758649 ఫోన్ నంబరును సంప్ర దించాలని ఆయన కోరారు.

INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE DEVELOPMENT 2022

Multipurpose Awareness Society is going to organise two days' international conference on Artificial Intelligence for Sustainable Development (ICSDAI-22) at Hotel Taj Mahal, Secunderabad, Hyderabad, Telangana which is sponsored by Ministry of MSME New Delhi.Many International speakers will be sharing their presentations and expressing their views. Various college Students, industry employees ,Professors and Teachers will be participating. Different type of Participants and learners will be Body Smart (Kinesthetic), people Smart (Interpersonal), word Smart (Linguistic), Logic Smart (Logical), Nature Smart (Environmentalists), Self-Smart (Interpersonal), Picture Smart (Visual), Music Smart (Auditory). The mode of Interactive sessions will be both Synchronous and Asynchronous. This conference is being organized to host representatives from Industry and colleges whose active participation helped in discussions and deliberations at the event to identify scientific gaps and raise economic and social issues that the world needs to focus on today. Speaking at a curtain raiser event, Sri Boda Nageswara Rao, President of Multipurpose Awareness said that this International Conference will be completed by establishing peace in world by Communication, Creativity, Critical Thinking, Collaboration, Digital Citizenship, ICT and Entrepreneurial. All seventeen Sustainable development goals should be taken care off. There should be no poverty, food for everyone, Good Health and wellness, Peace Justice and Strong Institutions Partenerships for the Goals etc.

Shri Boda Nageswara Rao
President,

సెప్టెంబర్ 9, 10న కృత్రిమ మేధ-సుస్థిర అంతర్జాతీయ సదస్సు

దిశ, బేగంపేట : సెప్టెంబర్ 9,10 తేదీలలో సికింద్రాబాదులో తాజ్ మహల్ హోటల్ రెండు రోజుల పాటు కృత్రిమ మేధతో సుస్థిర అభివృద్ధి అంశంపై అంతర్జాతీయ సదస్సును నిర్వహిస్తున్నట్లు మల్టీపర్పస్ అవేర్నెస్ సొసైటీ ప్రెసిడెంట్ కాన్ఫరెన్స్ కన్వీనర్ బోడ.నాగేశ్వరరావు ఒక ప్రకట నలో తెలిపారు. ఈ సదస్సులో ముఖ్య అ తిథులుగా వివిధ దేశాల చెందిన ఇం జినీర్లు, బిజినెస్ నిపుణులు, పారిశ్రామిక వేత్తలు, పర్యావరణ వేత్తలు, విద్యావేత్తలు, పరిశోధకులు, అభ్యాసకులు, పారిశ్రామిక వేత్తల పాల్గొంటారన్నారు. అంతర్జాతీయ జాతీయ విధాన రూపకర్తలను ఉమ్మడి వే దికపైకి తీసుకురావడమే ఈ అంతర్జాతీ య సదస్సు ఉద్దేశం అన్నారు. తక్కువ ఖ ర్చుతో అధిక లాభాల వైపు వెళ్లడానికి ఆ టో మోషన్ టెక్నాలజీ, వర్చువల్ రోబో టిక్ టెక్నాలజీ, బిజినెస్ ఇంటెలిజెన్స్ టె క్నాలజీ ఎంతో దోహదపడతాయన్నారు.

అంతర్జాతీయ సదస్సును విజయవంతం చేయాలని కోరారు. వివరాలకు 91-898 5758649 లేదా ఈమెయిల్ icadai22 @gmail.com సంప్రదించాలన్నారు.

మెగాసిటీ

సోమవారం 23 మే 2022

కృత్రిమ మేధ- సుస్థిర అభివృద్ధి అంశంపై అంతర్జాతీయ సదస్సు (ఇంటర్నేషనల్ కాన్ఫరెన్స్ ఆన్ ఆర్టిఫిషియల్ ఇంటెలిజెన్స్ ఫర్ సస్టైనబుల్ డెవలప్మెంట్)

మెగా సిటీ హైదరాబాద్ ప్రతినిధి:

మల్టీపర్పస్ అవేర్నెస్ సొసైటీ ఆధ్వర్యంలో విసిస్ట్రీ అఢ్ పైత్, స్కూల్.మీడియం ఎంటర్ప్రైజెస్. గవర్నమెంట్ ఇండియా సహకారంతో సెప్టెంబర్ 9,10 తేదీలలో హైదరాబాదులో రెండు రోజులపాటు క్యూత్రిమ మేద తో మనర అభివృద్ధి అంశంపై అంతరాశీయ సమసును నిర్వహిస్తున్ను మల్టీపర్పస్ అవేర్నెస్ సొసైటీ ప్రెసిడెంట్ శిండి కార్యక్రమ చర్చకర్ బొద జగన్మోహనరావు తెలిపారు. ఈ సదస్సులో నముఖ అతిథులుగా వివిధ దేశాల చెందిన సంశోధన్యుదారులైన సభ్యులు, పరిశ్రమ నేతలు, పర్యావరణ నేత్లు.విద్యా నేత్లు. పరిశోధకులు, అధ్యాపకులు, పరిశ్రమవేత్తల సాంకేతిక. అంతర్జాతీయ మరియు ఆసియా విధాన రూపకర్తలను ఎన్నో సరికొత్త విషయాలను ఈ అంతర్జాతీయ సదస్సు ఎత్తేను.స్థిరమైన అభివృద్ధి లక్ష్యాలు మరియు స్థిరమైన వ్యాపార నిర్వహణ కోసం కృత్రిమ మేధస్సుతో ప్రయాసరింపడం. ఈ సదస్సు ఆర్టిఫిషియల్ ఇంటెలిజెన్స్ తో సుస్థిర అభివృద్ధి సాధించటం.పర్యావరణ పరరక్షణ కోసం అద్వాన్స్ విద్యాలయం అంశాలపై చర్చలు ప్రసంగిస్తారు.సుస్థిర అభివృద్ధి లక్ష్యలను సాధించడం పర్యావరణబాన్ని కలుషితం కాకుండా కాపాడటం అంశాలను అంశాలను ఎత్తేంచి పరిశోధకులు సైన్స్ అండ్ విద్యాకి సంబంధించిన ల్లాప్రశ్రేయు ప్రసంగించనున్నారు.

ఈ సమావేశం లో ఆర్టిఫిషియల్ ఇంటెలిజెన్స్(కాంతి వ్యవస్థల రూపకల్పన మరియు విస్తరణలో వర్గించే సామాజిక అభివృద్ధి. పర్యావరణ పరిరక్షణ మరియు ఆర్థిక వృద్ధికి సంబంధించిన వివిధ అంశాలను కవర్ చేస్తు, స్థిరమైన శిఖా×శ×పై కృష్టి సారిస్తుంది.

ఈ సదస్సులో విద్యార్థులు.పరిశ్రమవేత్తల పరిశ్రమ ఉద్యోగులు. ఐటి కంపెని ఉద్యోగులు సాఫ్ట్ వేర్ ఉద్యోగులు. చిన్నతరహా వ్యాపారవేత్తలు. సామాజిక కార్యకర్తలు వివిధ రంగాలకు చెందిన నిపుణులు   ఎక్కువ మెగ్గంలో పాల్గొని అంతర్జాతీయ సదస్సును విజయవంతం చేయాలని కోరుదుచ్చారు. మరిన్ని వివరాల కోసం మొబైల్ నంబర్ 8985758649 లేదా ఇమెయిల్ అడ్రస్ ఇ ఃంఎం-ఃపంః2ఃప్ఃఎంఃర్ఢి.ఎస్ఏః సంప్రదించవలెను.

International Conference on AI for Sustainable Developmet-3 Information is published m "MEGA CITY" Telugu Daily on 23/5/20 for Information and publicty.

sd/-
Conference Convenor
ICAISD-20

MSME sponsored international conference on artificial intelligence for sustainable development being conducted under chairmanship of Boda Nageswararao in city

(By Our Skyline Staff Reporter)

Hyderabad, Sept.9: An International Conference on Artificial Intelligence for sustainable Development-2022 (9th -10th September,2022), Sponsored by Ministry of Micro, Small and Medium Enterprises,New Delhi Chaired by Mr.Boda Nageswara Rao, President, Multipurpose A w a r e n e s s S o c i e t y (M A S), Hyderabad. The Conference was inaugurated with Lightening Lamp from all the keynote speakers from India and other countries like Taiwan, Canada, Bhutan and Nepal. In the inaugural words Mr.Boda Nageswara Rao spoke about the importance of the conference and briefed about the details of the conference . He added that this is the second International Conference of its kind we are conducting in association with MSME. He also welcomed different dignitaries and participants from various sectors. Ms. Meena Jha, Faculty of Bio-Technology, Lincoln University, Malaysia gave welcome note on this occasion.

MSME Additional Director Siva Ram prasad participated as chief guest and explained the schemes implemented by Ministry of Micro ,Small and Medium Enterprises The first key note session was addressed by Mr. Jesse Arlen Smith, Global AI and Data Consultant, Business Leader, AI researcher and Speaker from Ethical Development and Development of AI, Canada. He spoke about understanding the ethical outcomes for operationalizing principles in AI Development with the help of real time use cases. The next session was addressed by Ch.Srinvasa Rao, CEO, AI Robo Hub Consulting Services Pvt Ltd, Hyderabad, India. He discussed about the automation ECO systems like RPA, AI and ML. The later address was by PAO-ANN-HSIUNG, Dean, Information Technology, Director, Taiwan-India Joint Research center of Artificial Intelligence, Director, research Centre on Artificial Intelligence & Sustainability, Professor, Department of Computer Science and Information Engineering, National Chung Cheng University, Chiayi Taiwan on trustworthy artificial Intelligence for sustainable smart city development. Before Lunch the session was regarding Artificial Intelligence in the field of Pharma and Health Care System which was addressed by Dr. Kumara Swamy Gandla, Professor & Head, Department of Pharmaceutical analysis, Chaitanya(Deemed to be) University, H a n u m a k o n d a , Warangal, Telangana. The post lunch session

International conference on Artificial intelligence highlights the important of Global Pollution Problems

(By Our Staff Reporter)

Hyderabad, September 11: An International Conference on Artificial Intelligence for sustainable Development-2022 (9th - 10th September,2022), Sponsored by Ministry of Micro, Small and Medium Enterprises(MSME), New Delhi Chaired by Mr.Boda Nageswara Rao, President, Multipurpose Awareness Society(MAS), was started at Hotel TajMahal, Hyderabad. Mr. Siva Prasad, Additional Director, MSME attended as Special Guest. The Conference was inaugurated with Lightening Lamp from all the keynote speakers from India and other countries like Taiwan, Canada, Bhutan and Nepal. In the inaugural words Mr.Boda Nageswara Rao spoke about the importance of the conference and briefed about the details of the conference . He added that this is the second International Conference of its kind we are conducting in association with MSME. He also welcomed different dignitaries and participants from various sectors. Ms. Meena Jha, Faculty of Bio-Technology, Lincoln University, Malaysia gave welcome note on this occasion.

The first key note session was addressed by Mr. Jesse Arlen Smith, Global AI and Data Consultant, Business Leader, AI researcher and Speaker from Ethical Development and Development of AI, Canada. He spoke about understanding the ethical outcomes for operationalizing principles in AI Development with the help of real time use cases. The next session was addressed by Mr. Ch. Srinvasa Rao, CEO, AI Robo Hub Consulting Services Pvt Ltd, Hyderabad, India. He discussed about the automation ECO systems like RPA, AI and ML. The later address was by PAO-ANN-HSIUNG, Dean, Information Technology, Director, Taiwan-India Joint Research center of Artificial Intelligence, Director, research Centre on Artificial Intelligence &Sustaiability, Professor, Department of Computer Science and Information Engineering, National Chung Cheng University, Chiayi Taiwan on trustworthy artificial Intelligence for sustainable smart city development. Before Lunch the session was regarding Artificial Intelligence in the field of Pharma and Health Care System which was addressed by Dr. Kumara Swamy Gandla, Professor & Head, Department of Pharmaceutical analysis , Chaitanya(Deemed to be) University, Hanumakonda, Warangal, Telangana.

The post lunch session was handled by Mr. K.P. Bhusal, Speaker, Sustainable Development, and Nepal. He drew the attention of audience towards the global pollution problems with an example of the great pacific patch and emphasized on the responsibility of the people in the sustainable developments in different fields. The following session was of Prof. Rajesh Kumar, Chairman& Principal, Department of Physical Education, Osmania University, Hyderabad, India, where he addressed the gathering on the importance of Technology in Sports and Games with real time examples.

The conference proceedings were conducted by Ms.EmceeHarshadaKasat, in a diligent and attractive manner. The Conference will be continued till 10th September 2022.

The Day-2 of conference started with the welcome note of Ms. Swetha. The First Session of the day was addressed by Dr. BonthuKotaiah, Senior Assistant Professor, Department of Computer Science and Information Technology, Maulana Azad National Urdu University, Hyderabad. He discussed the significance of Artificial intelligence method like Nuero-Fuzzy to assess the software reliability. The later presentation by Dr.RohitSarawath , Dean, Pharmacy & Research , Sunrise University about the role of AI in protecting Intellectual property rights.The next session is handled by the International Speaker from Bhutan Dr. Jackson Dukpa who is the founder and president of Global Village Connections(GVC) about the importance of AI in the world of ICT.Dr. Y. P. Singh, Director, S(PG)ITM, Rewari delivered the importance of LIFI technology.Dr. Humera Fathima, Associate Professor, School of Management, Osmania University had discussed about the Artificial Intelligence for Sustainable Business Management.The Importance of Block Chain Technology in the world of Internet of Things was well explained by Dr. Kiranmayi, Associate Professor from Malla Reddy College, Hyderabad.Nature Inspired Computation and Swarm Intelligence was the topic covered by Dr. Ramakanta Mohanty from SVIT College, Telangana.Ms. Meena jha From Lincoln University, Malaysia, presented about Sustainable Development using AI in an attractive manner.

కృత్రిమ మేధా సుస్థిరత అంతర్జాతీయ సదస్సు

దిశ, బేగంపేట : కృత్రిమ మేధా సుస్థిర అంతర్జాతీయ సదస్సు శనివారం సికింద్రాబాద్ తాజ్ హోటల్‌లో నిర్వహించారు. మల్టీపర్పస్ అవేర్నెస్ (మాస)అధ్యక్షుడు బోడా నాగేశ్వరరావు అధ్యక్షతన ఈ సమావేశం నిర్వహించారు. మన దేశంతో పాటు తైవాన్, కెనడా, భూటాన్, నేపాల్ వంటి ఇతర దేశాల నుంచి వచ్చిన ముఖ్య వక్తలు ప్రసంగించారు. ప్రారంభోపన్యాసంలో బోడా నాగేశ్వరరావు సదస్సు ప్రాముఖ్యతను తెలియజేశారు. మలేషియాలోని లింకన్ యూనివర్సిటీ బయో – టెక్నాలజీ ఫ్యాకల్టీ మీనా ర్యూ ఎథికల్ డెవలప్‌మెంట్ అండ్ డెవలప్‌మెంట్ ఆర్డెన్ స్మిత్ పై ప్రసంగించారు. ఇన్నోవేషన్ టెక్నాలజీ, డైరెక్టర్, తైవాన్–ఇండియా జాయింట్ రిసెర్చ్ సెంటర్ ఆఫ్ ఆర్టిఫిషియల్ ఇంటెలిజెన్స్, డైరెక్టర్, స్థిరమైన స్మార్ట్ సిటీ డెవలప్‌మెంట్ కోసం నమ్మదగిన కృత్రిమ మేధస్సుపై ప్రసంగించారు. డెవలప్‌మెంట్ నేపాల్ పసిఫిక్ ప్యాచ్ ఉదాహరణతో ప్రపంచ కాలుష్య సమస్యల వైపు ప్రేక్షకుల దృష్టిని ఆకర్షించారు. వివిధ

సదస్సులో పాల్గొన్న వివిధ దేశాల వక్తలు

రంగాలలో స్థిరమైన అభివృద్ధిలో ప్రజల బాధ్యతను నొక్కి చెప్పాలని పలువురు వక్తలు తెలిపారు. ఉస్మానియా యూనివర్సిటీ, హైదరాబాద్, ఇండియా టెక్నాలజీ ప్రాముఖ్యతపై వక్తలు ప్రసంగించారు.

కృతిమమేధ, సుస్థిర అభివృద్ధిపై అంతర్జాతీయ సదస్సు

మన తెలంగాణ/ నాంపల్లి : మల్టీపర్పస్ అవేర్నెస్ సొసైటీ ఆధ్వర్యంలో "కృతిమ మేధ, సుస్థిర అభివృద్ధి అంశంపై అంతర్జాతీయ సదస్సు జరిగింది. కేంద్రం చిన్న, మధ్యతరహా పరిశ్రమల మంత్రిత్వ శాఖ సహకారంలో తాజ్ మెహల్ హోటల్ అంతర్జాతీయ సదస్సుకి వేది కెండి. సదస్సుకి తైవాన్, వియత్నం, భూటాన్స్, నేపాల్, సౌదీఅరేవియా, బెహరాన్ తదితర దేశాల నుంచి ఇంజినీర్లు, వ్యాపారవేత్తలు, పారిశ్రామికవేత్త లు, పర్యావరణ నిపుణులు, పరిశోధకులు పాల్గొన్నారని సదస్సు కన్వీనర్ బోడ నాగేశ్వర రావు తెలిపారు. వివిధ అంశాల గురించి సదస్సులో విస్తృత స్థాయిలో చర్చించారు. సాంకేతిక వ్యాపారం ఇంటలిజెన్స్ వినియోగంలో సుస్థిర అభివృద్ధి వైపు అడుగులు పడనున్నాయని వక్తలు పేర్కొన్నారు. తక్కువ ఖర్చుతో అధిక లాభాలు దిశగా ముందుకు వెళ్లడానికి ఆటోమేషన్ టెక్నాలజీ, వర్చువల్ రోబోటిక్ టెక్నాలజీ బిజినెస్ ఇంటలిజెన్స్ టెక్నాలజీ ఎంతగానో దోహదం చేస్తున్నారు. సైన్స్ అండ్ టెక్నాలజీ రోబోటిక్ సైబర్ సెక్యూరిటీ సాంకేతిక పరిజ్ఞానం వంటి అంశాలను వ్యాపార రంగంలో వినియోగించడం వల్ల పలు ప్రయోజనాలు న్నాయని పేర్కొన్నారు. పర్యావరణం సుస్థిర అభివృద్ధికి దోహదం చేస్తుందని బోడ నాగేశ్వర రావు పేర్కొన్నారు. ఈ సందర్భంగా సావెన్ర్‌సును ఆవిష్కరణ జరిగింది. విదేశీ ప్రతినిధులు స్వీత్, జాక్సన్, బాచల్ తదితరులు పాల్గొన్నారు.

170

INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE DEVELOPMENT-2022

सूक्ष्म, लघु और मध्यम उधम मंत्रालय
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES

www.masindia.org

Certificate of Appreciation

This certificate of appreciation is presented to Mr./Ms./Mrs./Dr …………………………………………………………………… from …………………………………………………………………… for participating as Speaker/Presenter for the International Conference on Artificial Intelligence for Sustainable Development held on 9ᵗʰ & 10ᵗʰ September 2022 at Hyderabad organized by Multipurpose Awareness Society, Hyderabad, Telangana supported by Ministry of Micro, Small and Medium, Enterprises , Government of India, New Delhi.

Mr. JESSE ARLEN SMITH
AI RESEARCHER AND INTERNATIONAL SPEAKER ON THE ETHICAL DEVELOPMENT AND DEPLOYMENT OF AI, VIETNAM

Dr. CHIN-TSAN WANG
DIRECTOR OF SCIENCE & TECHNOLOGY, MINISTRY OF SCIENCE AND TECHNOLOGY (MOST), TAIWAN

Dr. REN-SONG KO
ASSOCIATE PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY, NCC UNIVERSITY, TAIWAN

Mr. CHHEKU DUKPA
FOUNDER & PRESIDENT GLOBAL VILLAGE CONNECTIONS (GVC) BHUTAN

Mr. K. P. BHUSAL
SPEAKER SUSTAINABLE DEVELOPMENT NEPAL

Dr. PAO-ANN HSIUNG
PROFESSOR NATIONAL CHUNG CHENG UNIVERSITY TAIWAN.

Mr. B. NAGESWARA RAO
CHAIRMAN MULTIPURPOSE AWARENESS SOCIETY INDIA

INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE DEVELOPMENT -2022

सूक्ष्म, लघु और मध्यम उधम मंत्रालय
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES

www.masindia.org

Certificate of Participation

This certificate of participation is presented to Mr./Ms./Mrs./Dr …………………………………………………………………… from …………………………………………………………………… for participating in the International Conference on Artificial Intelligence   for Sustainable Development held on 9ᵗʰ & 10ᵗʰ September 2022 at Hyderabad organized by Multipurpose Awareness Society, Hyderabad, Telangana supported by Ministry of Micro, Small and Medium, Enterprises, Government of India, New Delhi.

Mr. JESSE ARLEN SMITH
AI RESEARCHER AND INTERNATIONAL SPEAKER ON THE ETHICAL DEVELOPMENT AND DEPLOYMENT OF AI, VIETNAM

Dr. CHIN-TSAN WANG
DIRECTOR OF SCIENCE & TECHNOLOGY, MINISTRY OF SCIENCE AND TECHNOLOGY (MOST), TAIWAN

Dr. REN-SONG KO
ASSOCIATE PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY, NCC UNIVERSITY, TAIWAN
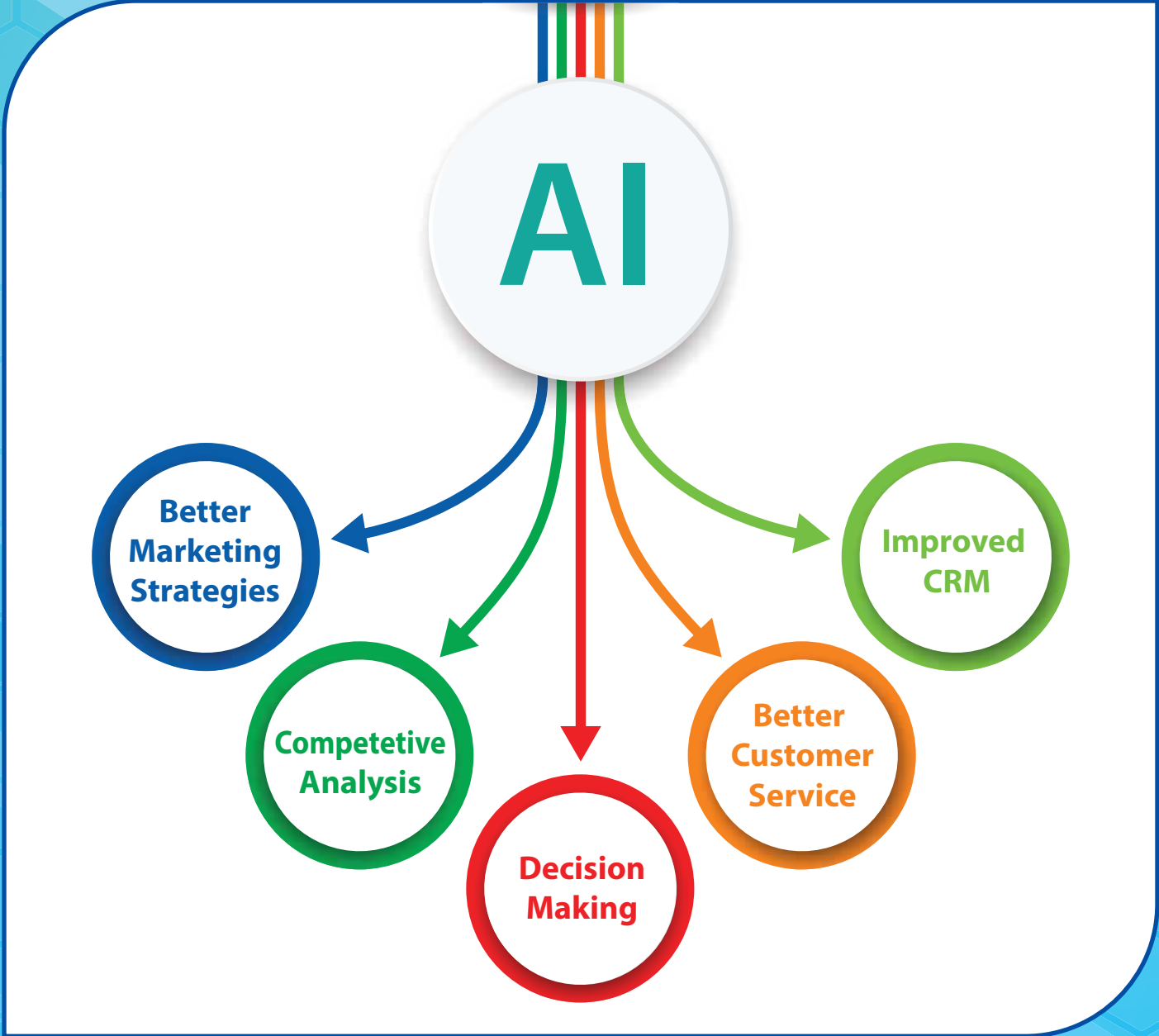
Mr. CHHEKU DUKPA
FOUNDER & PRESIDENT GLOBAL VILLAGE CONNECTIONS (GVC) BHUTAN

Mr. K. P. BHUSAL
SPEAKER SUSTAINABLE DEVELOPMENT NEPAL

Dr. PAO-ANN HSIUNG
PROFESSOR NATIONAL CHUNG CHENG UNIVERSITY TAIWAN.

Mr. B. NAGESWARA RAO
CHAIRMAN MULTIPURPOSE AWARENESS SOCIETY INDIA