



Since 1979

Bapuji Educational Association®

# Bapuji Institute of Engineering & Technology, Davangere Newsletter: Department of Artificial Intelligence & Machine Learning (AI&ML)

Volume 1, Issue 1 (July to December 2023)

A half yearly Newsletter



Since 2022

## AI&ML - Technology with A Human Touch Where Possibilities Become Realities!!!

### Editorial Board

#### Chief Editor

**Dr. S B Mallikarjuna**

Professor & Head, AI&ML

#### Faculty Coordinator

**Mrs. Vijayalakshmi S Hallikeri**

Asst. Professor, AI&ML

### Student Coordinators

**Ms. Shreya V S**

3<sup>rd</sup> Sem, AI&ML

**Ms. Nandini Muchandi**

1<sup>st</sup> Sem, AI&ML

### In This Issue

- Editorial
- Staff Activities
- Publications
- Student Activities
- Departmental Activities / Workshops / Training Programmes
- Outreach Activities / Expert Lectures /
- Technical Article
- Photo Gallery



### Editorial

Artificial Intelligence (AI) and Machine learning (ML) are closely related fields, with AI, the ability of a digital computer to do human tasks and ML, focusing on teaching computers to learn from data without explicit programming. AI enhances the speed, precision, and effectiveness of human efforts.

AI is rapidly becoming a mainstream technology, transforming and revolutionizing finance, manufacturing and transportation, healthcare and retail industries by identifying stock market trends, detecting fraud, automating processes, monitoring equipment, optimizing routes and providing personalized recommendations. AI has challenges which include accuracy, bias, privacy, and ethical considerations. AI should be explainable for transparency, which is crucial for AI's success.

AI has the potential to significantly change business processes across sectors, enhancing efficiency and transforming transactions, diagnoses, surgeries, and driving. As more industries adopt AI, new applications will emerge, resulting in better decision-making and faster progress in the future.

Organizations must protect data to avoid privacy risks and comply with GDPR regulations. Augmented Intelligence, hyper automation, and deep learning are enhancing workforce efficiency, with Gartner predicting 40% of infrastructure and operations teams will use AI by 2024.

AI, a 21st-century invention, offers consistent results and reduces data-heavy tasks, making it a valuable tool for human society. Whether AI will be beneficial or detrimental to human life lies with the human individuals itself.

### Staff Activities

- Deepashri K M and Vijayalakshmi S Hallikeri attended ATAL FDP on "Agile Software Evolution & Micro-services Mastery", from 16th to 21/10/2023 organized by CSE dept. BIET, Davangere.
- Jyothi G C attended Online FDP on "ICT Unlocked – Innovative Teaching Learning with AI – Driven Pedagogy", from 23rd to 28th November, 2023, conducted by Dept. of EEE, Dayananda Sagar College of Engineering, Bengaluru.
- Vijayalakshmi S Hallikeri attended Online FDP on "Recent Developments and Trends in Electrical Engineering (Webinar series 1: Renewable Energy Systems)", from 4<sup>th</sup> to 8<sup>th</sup> December, 2023, conducted by Dept. of EEE, Dayananda Sagar College of Engineering, Bengaluru.
- Bhagya S.G. & Santhosha P attended Offline FDP on "Mastering IoT: Hands on Training for Sensor Integration, devices and Cloud Services", from 4th to 9th December, 2023, conducted by Dept. of E&CE, BIET., Davangere.

### Publications

- "An Insight to Machine Learning Algorithms and a Case Study" in 2<sup>nd</sup> International Conference on Engineering Innovation (ICEI-2023, held by Jain Institute of Technology, Davangere, on 2<sup>nd</sup> June, 2023, presented and published by Vijayalakshmi S Hallikeri.
- "CNN based Cgest X-Ray Classification" in IJSREM Journal on Volume 07 Issue 08 August, 2023 published by Bhagya S G
- "Design and Development of Product Sorting System Using Machine Vision", International Journal of Computational Engineering Research (IJCER), Volume 13, Issue 6, Nov-Dec 2023, pp.27-30, ISSN (e): 2250 – 3005, published by Deepashri k M.

## Student Activities

➤ A Logo competition was conducted on 05/12/2023 for AIM&ML Logo Design to First and Second year AI&ML students. Winners of Logo Competition are from 3<sup>rd</sup> semester, 2023:

- Vinayaka G C,
- Spoorthi V S
- Siddharth H

➤ Toppers (Highest CGPA in First year) :

- Inchara P M (9.25)
- Siddhartha H (9.05)



Manojkumar K S of 3<sup>rd</sup> semester participated in the Grand Finale of Smart India Hackathon – 2023 at Noida Institute of Engineering & Technology, Noida, State: Uttar Pradesh



## Departmental Activities / Workshops / Training Programmes

- 5 Days Student Training Program on “Communicate with Confidence” was conducted to 3rd Sem students on 28/11/2023 in association with IS&E Department.



Resource person for Skill Development Programme:

Mr. Manjesh,

Program Manager, CREA (Campus Recruitment & Empowerment of Actions)



- AI&ML Forum was inaugurated on 08/12/2023 2:30pm. The Chief Guest was DR.B M Sagar, Prof. and Head, Dept. of ISE, RVCE., Bengaluru, Alumni of CSE, BIET.



- AI&ML Logo was selected and launched during Forum Inauguration on 08/12/2023



- A Technical quiz on AI&ML was conducted during forum function to First and Second year AI&ML students.



## Outreach Activities / Expert Lectures / Workshops / Training Programmes

- *Dr. Mallikarjuna S B is appointed as Dean infrastructure and planning of the Institute.*
- *Dr. Mallikarjuna S B has attended the BOS meeting and Doctoral committee meeting held at Davangere University.*
- *Dr. Mallikarjuna S B has attended the Doctoral committee meeting held at Kuvempu University.*
- *Dr. Mallikarjuna S B, Vaishnavi Inamdar, Shravani and Santhosh T have given Brain storming session on Dos and Don'ts of social Media particularly YouTube and Instagram to SSIMS Faculty, Davangere.*
- *All faculty members of the department have attended a workshop on "Autonomous Structure, Procedures and Policies on 18/11/2023.*
- *Deepashri K M delivered an Expert Lecture on "PLC Programming & its Applications", for 7<sup>th</sup> Semester students, Mechanical Engineering, BIET., Davangere, on 11/12/2023".*



## Technical Article

### AI POWERED FUTURE

Artificial Intelligence (AI) is truly a revolutionary feat of computer science, set to become a core component of all modern software over the coming years and decades. “AI is the theory and development of computer systems able to perform tasks like humans such as, visual perception, speech recognition, learning, decision-making, and natural language processing.” AI is not one thing but an umbrella term for a growing set of modeling capabilities, as visualized in Figure 1 below.

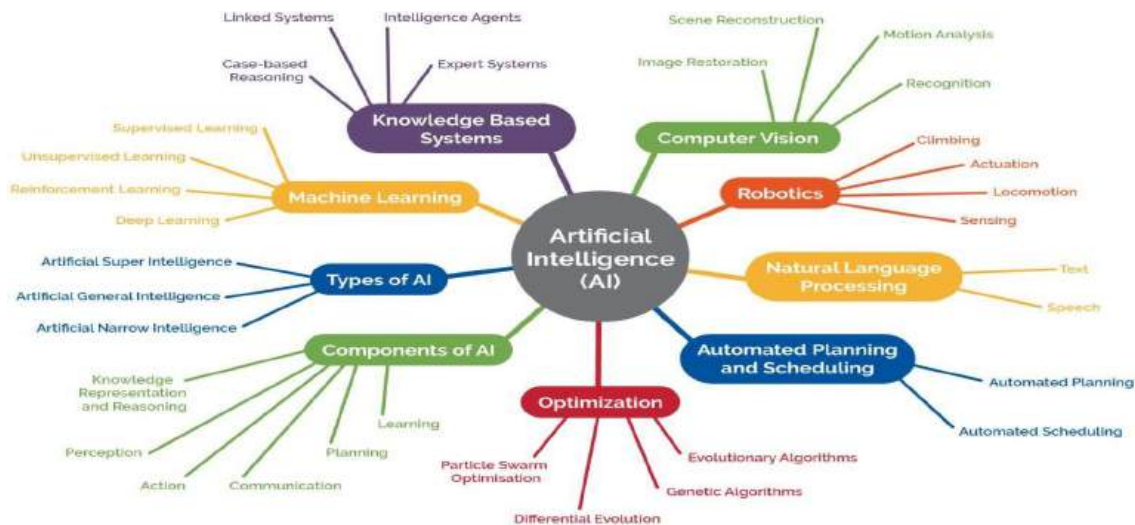


Figure 1: Components, types, and subfields of AI based on Regona et al (2022).<sup>12</sup>

<sup>12</sup> Regona, Massimo & Yigitcanlar, Tan & Xia, Bo & Li, R.Y.M. (2022). Opportunities and adoption challenges of AI in the construction industry: A PRISMA review. *Journal of Open Innovation Technology Market and Complexity*, 8(45). <https://doi.org/10.3390/joitmc8010045>

AI models are an approximation of reality that is useful for identifying patterns, making predictions, or analyzing alternative decisions. AI at its heart is a highly advanced mathematical toolkit for building and using models. AI models allow computational processes to make recommendations or plans and also enable them to support forms of interaction that are more natural, such as to an assistant.

Indeed, in well-known chatbots, complex essays are written one word at a time. The underlying AI model predicts which next words would likely follow the text written so far; AI chatbots use a very large statistical model to add one likely word at a time, thereby writing surprisingly coherent essays. Additionally, the possibilities for automated actions that can be executed by AI tools are expanding.

Though AI is unbounded in its potential capabilities and a nearly perfect approximation to reality can convey an excitement about the possibilities of the future. The future, however, can be oversold. The technologies that have the potential to help billions of people live happier, healthier, and more productive lives have challenges in five key areas that will shape the future of the digital age: justice system, impact on the jobs marketplace, identity, and privacy.

## TOP 5 ARTIFICIAL INTELLIGENCE TRENDS IN 2024

### 1. RESPONSIBLE AI:

In 2024, responsible AI is expected to significantly impact livelihoods, as AI tools with consistent bias against certain groups can have profound consequences.

### 2. MULTIMODAL LEARNING:

AI companies like Open AI are enhancing their GPT-3.5 and GPT 4 models to generate realistic results, enabling the study and analysis of images in words.

### 3. AI AUGMENTED APPS:

They are mobile applications that use the power of AI to super charge your Augmented Reality (AR) experience. AI on the other hand, is all about teaching machines to learn and perform tasks that typically need human intelligence.

### 4. ENHANCED REGULATIONS FOR AI:

AI thrives on data, including personal information. To protect privacy, regulations mandate user consent and data security. Notably, in 2023, data Governance challenges were at the forefront for privacy professionals. In 2024, AI regulations are expected to require AI developers to test and mitigate bias.

### 5. AUGMENTED WORKFORCE:

In 2024, AI is driving a significant transformation in work, enhancing human capabilities and creating a safer, more efficient environment through collaboration with intelligent digital assistants.

## CONCLUSION:

The list of emerging AI trends doesn't end here. With more advancement in this field, we can expect to see more and more AI trends contesting for the top spot. So, will AI replace humans as it grows? AI is expected to create 133million new jobs by 2030. Here are the top 5 AI trends for 2024 to consider upskilling yourself for the AI powered future.

**“AI in education can only grow at the speed of trust”**

**—Dr. Dale Allen**



Article by:



Nandini Muchandi,  
1<sup>st</sup> Sem, AI&ML

Dept. of AI&ML, BIET, Davangere-



## WHAT'S NEXT....IF AI TAKE OVER THE HUMAN INTELLIGENCE?



AI, a rapidly growing technology, has the potential to replace human intelligence due to its memory, accurate decision-making, and ability to reduce errors, but its use and potential threats depend on human usage.

### The argument for AI taking over Humanity:

Bill Gates and Elon Musk are concerned about AI takeover, a hypothetical scenario where AI surpasses human control, while Hawking warns of potential human extinction. The impact is uncertain and significant.

Some possible outcomes if AI take over the human intelligence are,

- Loss of control: AI's super-intelligence could make it challenging to control.
- Economic disruption – AI's potential to automate jobs and industries could create economic disruption, job loss, and instability, causing ripple effects on society.
- Ethical concerns – AI may not share the same ethical values and priorities as humans.
- Increases efficiency – AI can enhance efficiency and productivity in various aspects of life, such as medical treatments, energy production optimization, and transportation improvement.
- Security risks – AI's has security risks, including potential access to sensitive information or weapons, potentially leading to harm.

### Conclusion:

AI's potential to replace human intelligence could have both positive and negative consequences. It's crucial to responsibly develop AI, considering both risks and benefits, while ensuring it remains a controllable tool for our benefit.



Priyadarshini P.  
3rd Sem, AI&ML

## AI IN AGRICULTURE

AI in agriculture enhances crop production, real-time monitoring, harvesting, processing, and marketing, with automated systems like agricultural robots, drones and sprayers making significant contributions to the agro-based sector.

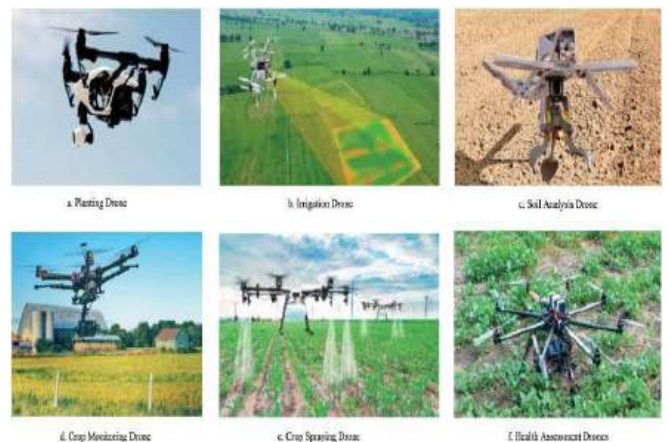
### ROBOTS IN AGRICULTURE DRONES IN AGRICULTURE



Robots replace human labour and produce effective benefits providing automated irrigation systems. Drones are being implemented in agriculture for crop health monitoring, irrigation equipment monitoring, weed identification, herd and wildlife monitoring and disaster management.

### CROP SPRAYING

Sprayers either hydraulic, gas, centrifugal or kinetic facilitates optimized use of water.



### FUTURE SCOPE:

AI Technology can improve performance with AI-driven techniques like remote soil moisture content detection and GPS-automated irrigation. Precision weeding can overcome crop loss.



Shwetha B  
3rd Sem, AI&MN

### Photo Gallery



