SMVITM

**Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal**

*The Department of Artificial Intelligence & Machine Learning presents*

# AI PULSE

## Newsletter

**Vol 2 Issue 1 Year 2023-24**


**Prepared by**

*Dr. P Vaidehi Nayantara, Asst. Professor*

*Dr. Rashmi Samanth, Asst. Professor-Selection Grade*

# HOD's message

Dear Students, Faculty, and Esteemed Visitors,

It is with great pleasure that I welcome you to the Department of Artificial Intelligence and Machine Learning at Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal, Udupi. As the Head of this dynamic department, I am excited to lead a community of passionate learners, accomplished faculty, and dedicated professionals in the realms of AI and machine learning.

At the heart of our department's mission is the pursuit of excellence in the fields of Artificial Intelligence (AI) and Machine Learning (ML), we envision a future where our students become leaders and innovators, applying their skills to solve real-world problems and contribute to the advancement of technology.

Our department is committed to providing an innovative and intellectually stimulating environment that encourages curiosity, critical thinking, and hands-on exploration. The rapidly evolving nature of AI and machine learning demands a curriculum that is both comprehensive and adaptive, ensuring our students are well-prepared for the challenges of the digital era.

I am proud to lead a team of distinguished faculty members who are not only experts in their fields but are also passionate about imparting knowledge and mentoring the next generation of professionals. Our faculty members bring a wealth of industry experience and research accomplishments, providing students with a holistic and enriching educational experience.

Research is at the core of our department's identity. Our faculty and students engage in ground breaking projects, pushing the boundaries of AI and machine learning. We are committed to contributing to the global body of knowledge and developing solutions that address the complex challenges of our time.

Recognizing that our students are the future leaders in AI and machine learning, we have designed our programs to be student centric. From collaborative projects and hackathons to internship opportunities with industry leaders, we strive to provide a holistic educational experience that extends beyond the classroom.

Whether you are a prospective student, a current member of our community, or a visitor interested in our work, I invite you to explore the exciting opportunities that the Department of Artificial Intelligence and Machine Learning has to offer.

Thank you for choosing to be a part of this journey. Together, let's embark on a transformative experience in the fascinating world of AI and machine learning.

**Mr. Nagaraja Rao**

# ABOUT DEPARTMENT

Welcome to the Department of Artificial Intelligence and Machine Learning at Shri Madhwa Vadiraja Institute of Technology and Management (SMVITM), Bantakal, Udupi. Our department is dedicated to fostering a stimulating learning environment, where students explore the frontiers of AI and machine learning, and faculty members engage in cutting-edge research.

The Artificial Intelligence and Machine Learning Engineering in SMVITM was started in the academic year 2021-22 offering an undergraduate program with an intake of 60 students per year. The field of artificial intelligence has been an interdisciplinary endeavour, requiring deep knowledge of both computational and human sciences. Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves. Artificial Intelligence (AI) and Machine Learning (ML) are changing whole businesses and sectors by utilizing data to make choices. AI and machine learning are paving the way for tomorrow's living, from self-driving vehicles to Google Brain. Businesses may benefit from data-driven intelligence thanks to cross-cutting techniques, algorithms, and deep learning neural networks. Learning the fundamental principles of machine learning and deep learning, including supervised and unsupervised learning, while pursuing a B.E. in artificial intelligence and machine learning with advanced learning solutions. Students will specialize in building intelligent systems, software, and apps to solve a specific problem. Advancements in machine learning and deep learning are creating a paradigm shift in virtually every sector of the tech industry. Moreover, the growing impact of AI on society demands that graduates are capable and ethical collaborators, able to ensure the safe and effective adoption of new technologies across domains.

The Department of Artificial Intelligence and Machine Learning Engineering has well qualified and motivated faculty members who are highly committed to the overall development of the students. Along with the regular curriculum, the Department organizes various guest-lectures/invited talks by eminent faculty from reputed institutions/industry experts to keep students up-to-date about the latest technological developments.

The Department has state-of-the-art laboratories equipped with high-end computers and other required peripherals to meet the academic needs of students. The Department has the most sophisticated and state-of-the-art computer labs aimed at giving hands-on training to the students in the most advanced areas in programming and software development. In addition to the existing labs, an internet lab as a central facility is being developed.

Join AI and Machine Learning clubs, participate in hackathons, and attend workshops to enrich your academic experience and connect with like-minded peers. Explore hands-on learning experiences through internship programs with leading tech companies, bridging the gap between academia and industry.

## OUR VISION

To be recognized as a center of eminence in the field of Artificial Intelligence for holistic engineering education and research on current technologies.

## OUR MISSION

1. To impart quality and value-based education and contribute towards the innovation of computing, expert systems, Artificial Intelligence and Machine Learning.

2. To build a data intensive system through socio-economic aspects by promoting crossdisciplinary thinking that expands expertise in cutting edge technologies and acquire professional ethics.

3. Promote the overall personality development of the students through activities that have high credibility and societal impact.

## PROGRAM EDUCATIONAL OBJECTIVES

| | |
|---|---|
| PEO-1 | Graduates will have the ability to adapt, contribute and innovate new technologies and systems in the key domains of Artificial Intelligence and Machine Learning. |
| PEO-2 | Graduate will establish himself/herself as effective professionals by solving realworld problems using investigative and analytical skills along with the knowledge acquired in the field of Artificial Intelligence and Machine Learning |
| PEO-3 | Graduates will have the ability to explore research areas and produce outstanding contribution in various areas of Artificial Intelligence and Machine Learning. |
| PEO-4 | Graduates will be ethically and socially responsible solution providers and entrepreneurs in the field of Artificial Intelligence and Machine Learning. |

# PROGRAM OUTCOMES

| PO No. | Graduate Attribute | PO Statement |
|---|---|---|
| PO 1 | Engineering Knowledge | Apply the knowledge of mathematics, Science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems. |
| PO 2 | Problem analysis | Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. |
| PO 3 | Design/ Development of Solutions | Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations. |
| PO 4 | Conduct investigations of complex problems | Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. |
| PO 5 | Modern Tool Usage | Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations. |
| PO 6 | The Engineer and Society | Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice |
| PO 7 | Environment and Sustainability | Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development |
| PO 8 | Ethics | Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice. |
| PO 9 | Individual and Teamwork | Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings. |
| PO 10 | Communication | Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions |
| PO 11 | Project Management and Finance | Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments |
| PO 12 | Life-long Learning | Recognize the need for and have the preparation and ability to Engage in independent and life- long learning in the broadest context of technological change. |

# PROGRAM SPECIFIC OUTCOMES

| | |
|---|---|
| PSO-1 | Ability to apply technical and research skills to design and develop algorithms using modern software tools to provide the sustainable solutions to Artificial Intelligence and Machine Learning problems related to the society and environment. |
| PSO-2 | The capacity to build computational knowledge and project development abilities in the fields of Computer Vision, Deep Learning, Machine Learning, and Artificial Intelligence using cutting-edge tools. |

# CONTENTS

# DEPARTMENT ACTIVITIES

### 1. Workshop on "Making Resume and LinkedIn Profiles"

Department of AI-ML & AL-DS conducted a comprehensive two-hour session on professional development aimed at equipping students with insights and tools necessary for their professional growth. This session was specifically tailored for students of the fifth semester 2021 Scheme. The Workshop on "Making Resume and LinkedIn Profiles" was held on 12th January 2024, from 2:00 pm to 4.00 pm in Department of AI- DS/ML, SMVITM.


During the session, the resource person Dr. Manjunath guided crafting effective resumes, emphasizing the importance of grammar and individual strengths while cautioning against falsifying information. An assignment-like activity spanning the following week tasked students with creating resumes and sharing them with faculty members.

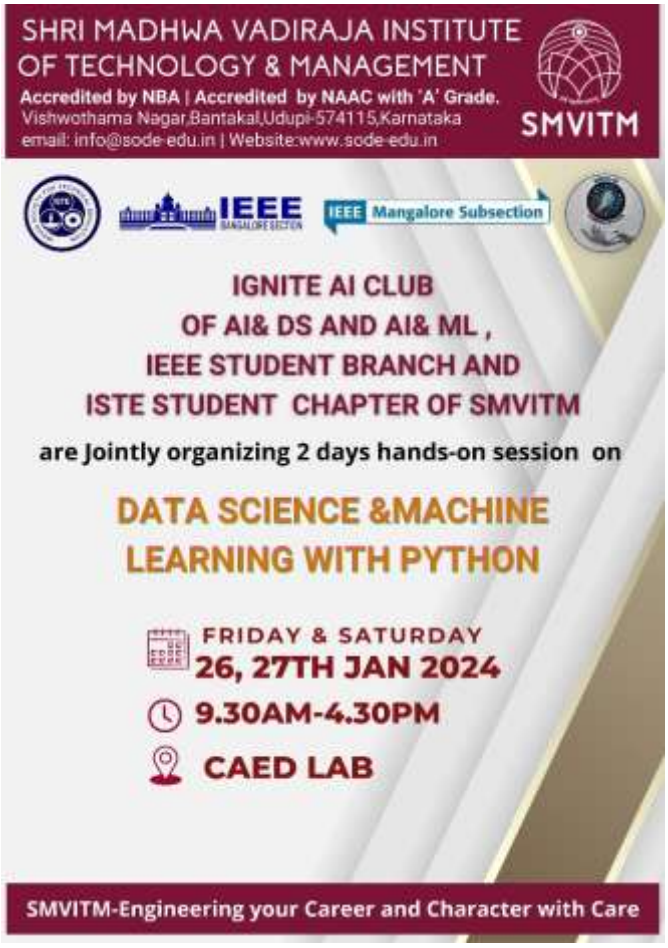
Additionally, the significance of LinkedIn in professional networking was highlighted, with Dr. Manjunath demonstrating its utility in establishing valuable connections and introducing LinkedIn Premium's benefits, including a complimentary one-year trial for college students.

Overall, the session provided invaluable insights into professional development, arming students with practical knowledge essential for navigating the competitive professional landscape. It is recommended to conduct more such sessions regularly to further enhance students' readiness for the workforce. Gratitude is extended to Dr. C K Manjunath for his informative session, with anticipation of future collaborations aimed at enriching students' professional journeys.

### 2. Workshop on "Introduction to AI"

Department of Artificial Intelligence & Data Science and Artificial Intelligence & Machine Learning Engineering of SMVITM jointly organized two days hands-on workshop on "Data Science and Machine Learning with Python" on 26th and 27th January 2024 for First Year and Second Year Students of AIML and CSE.

On Day 1, attendees delved into Python basics and libraries, learning script writing, variables, data types, and essential commands for version control on GitHub. A refresher quiz added an interactive element, fostering engagement. Additionally, a hands-on session on Machine Learning algorithms empowered students to run models using popular tools and evaluate results.





Day 2 focused on data visualization, exploring heart disease prediction with matplotlib and other tools. Linear regression was practiced, emphasizing applications and limitations, followed by a test to review learning. Project work was assigned for further exploration. While the workshop was insightful, some challenges arose, including internet issues and content complexity. The workshop was only for 50 Students based on first come first serve basis through google form.

Suggestions included encouraging students to bring their laptops for smoother setups. Hosted by the IGNITE AI CLUB MEMBERS, the workshop aimed to enhance students' practical skills in AI and ML.

### 3. A peer learning session on "Git and GitHub"

The Department of Artificial Intelligence & Machine Learning/Artificial Intelligence and Data Science Engineering of Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal in association with ISTE, IEEE and Ignite-AI Club organized "A peer learning session on Git and GitHub" which was held on 09th May 2024 in the institute premises.

Mr. Pratham Kamath and Mr. Ramachandra Udupa were the student volunteers. They taught about the understanding of version control systems, specifically focusing on Git and its cloud-based counterpart, GitHub. A Total 125 students of 2nd Semester AI-DS/ML were benefited by the workshop.

The session was divided into various segments : Interactive Session followed by Q&A session and ended with feedback and Conclusion.

Participants expressed positive feedback about the session, highlighting the clarity of explanations and the practical approach to learning Git and GitHub. The Ignite-AI Club plans to organize more peer learning sessions on advanced topics in software development and version control systems.

Dr. Nagaraja Rao, Associate Professor and HOD - Intelligence & Machine Learning/Artificial Intelligence and Data Science Engineering, coordinated the event. Ms. Vandana U - Assistant Profesor, Ms. Megha Rani R -Assistant Professor were present during the event.


### 4. A Talk on CareerXcel : "Skills to Success"

The Department of Artificial Intelligence & Machine Learning/Artificial Intelligence and Data Science Engineering, Department of Electronics and Communication Engineering of Shri Madhwa Vadiraja Institute of Technology and Management, Bantakal in association with ISTE, IEEE, Technocrators and Ignite-AI Club organized "A Talk on CareerXcel : Skills to Success" which was held on 14th May 2024 in the Admin Block Seminar Hall.

Mr. Pushpendra Singh, who is an Entrepreneur and Director of, Golden bird International, Dubai was the resource person for the event.


The event was conducted in Seminar Hall ,Main Admin Block from 10:00am to 12.00pm. The sessions were conducted in two parts – 10:00am to 10:45am for 4th Sem AI-ML/DS and EC students and 11:00 am to 11:45am for 6th sem AI-ML/DS and EC students. A Total of around 180 students from different sections/semesters attended the session.

The resource person spoke about the 3 phases available in CareerXcel, ie, Technical Education, Non-technical education and also Work experience. Technical Education includes Learning Python, Apps and Web Development using Android Studio, VS code, Adobe XT, Java HTML, CSS.

Non-technical education includes: Top 5 AI tools, E-portfolio, Corporate Communication . Internship details includes Real Industry Projects, Free of cost and will provide with necessary exposure of technology to the students.

Participants expressed positive feedback about the session, highlighting the clarity of The Ignite-AI Club and Technocrators plans to organize more such informative and Learning sessions in the future.


Dr. Guruprasad, Associate Professor and HOD – Electronics and Communication Engineering, coordinated the event. Ms.Vandana U - Assistant Profesor, Mr. Ms. Megha Rani R - Assistant Professor, Ms. Chandana and Mr. Sachin Prabhu were present during the event

## Faculty Accomplishments

Two faculty members have completed their PhDs and received their doctorates.

- Mr. Vignesh Shenoy was awarded Ph.D. degree from MAHE, Manipal on December 16th, 2023 for his thesis titled “Soft Sensing of Multivariable Measurements in a Level Process using Chaotic Observer”.

- Mr. Ganesh Prasad was awarded Ph.D. degree from MAHE, Manipal on 29th January, 2023 for his thesis titled "Modeling and Prediction of Tool Wear in Turning Operation of Nickel-Iron-Chromium Superalloy from Machined-Surface-Images using Deep Learning Technique."

## Faculty Journal/Conference Publications

| Sl. No | Name of the Authors | Title of the paper | Name of the Journal/ Conference |
|---|---|---|---|
| 1 | Raghavendra C. Kamath , G. S. Vijay, Ganesha Prasad, P. Krishnananda Rao, Uday Kumar Shetty, Gautham Parameshwaran, Aniket Shenoy and Prithvi Shetty | Feasibility Analysis of Tamura Features in the Identification of Machined Surface Images Using Machine Learning and Image Processing Techniques | Engineering Proceedings |
| 2 | Abhilash Naik, Anusha, Nikhitha Shetty, Pavan Shettigar, Nagaraja Rao | Hydro Jet- Efficient Rooftop Cleaning System with External High-Pressure Washer Integration | International Research Journal of Engineering and Technology |
| 3 | Kamath R.C., Vijay G.S., Ganesh Prasad, Rao P.K., Shetty U.K., Parameshwaran G., Shenoy A., Shetty P | Feasibility Analysis of Tamura Features in the Identification of Machined Surface Images Using Machine Learning and Image Processing Techniques | International Conference on Recent Advances in Science and Engineering held at MAHE, Dubai |

# Faculty Development Programme & Workshops

| Sl. No | Name of Faculty | Title of the FDP/Workshop | Venue/College Name |
|---|---|---|---|
| 1 | Ms. Ashwini K | IUCEE international engineering Educator Certification Program | Online FDP |
| 2 | Dr. Ganesha Prasad | AI Evolution: From Foundations to Generative AI | TechSaksham |
| | | Mongodb -A project based hands on training | Sai Vidhya institute of technology Bangalore |
| 3 | Ms. Megha Rani R | Mongodb -A project based hands on training | Sai Vidhya institute of technology Bangalore |
| | | Computer graphics and fundamentals of Image processing | SJBIT Bangalore |

# STUDENT RESULTS

## Third Semester

**Toppers with SGPA**

| | | |
|---|---|---|
| 1 | Keerthi | 9.14 |
| | Mohammed Umaiz Khalik | 9.14 |
| 2 | Bhoomikha | 9.10 |
| 3 | Hemanth J Shetty | 8.95 |

**Student Pass percentage** 83. 87


## Fifth Semester

**Toppers with SGPA**

| | | |
|---|---|---|
| 1 | Sinchana A R | 9.39 |
| 2 | Shetty Anusha C | 9.17 |
| 3 | Sameeksha Nayak | 8.83 |

**Student Pass percentage** 72. 88


# STUDENT ACHIEVEMENTS

## Technical achievements

- Third year AI & ML students along with CSE students received 2nd runner up among 30 teams in The EG AI Innovation Hackathon 2024, held at the EG Premises in Mangalore for the project titled “Legacy Code to Modern Language Code Converter”.

- Ms. Ananya Bhat (4MW23A1006), Ms. Sameeksha Shetty (4MW23A1044) and Ms. Spoorthy S Bhat (4MW22A1045) won First Place in the VTU Intercollegiate Mangaluru Division Table Tennis Tournament held at K S Hegde Medical College, Deralakatte, Mangaluru on 2nd July 2024.
- Mr. Nishanth A Jattan (4MW22AI028) won second place in Logo Design event during State Level Techno Cultural and Management Fest "SAAVISHKAR" held at Moodlakatte Institute of Technology, Kundapura on 1st and 2nd May 2024.
- The following students have won prizes in various events organized during "TECH YUVA-2K24" at Srinivas Institute of Technology on 26th and 27th March 2024.

| Student details | Event | Prize won |
|---|---|---|
| Rahul Shettigar (4MW23AI039) | Photography | 1st place |
| Anjali (4MW23AI008) | Ideathon | 2nd place |

- Mr. Poornananda (4MW23AI033) won 1st place in Movidea- Photography event conducted during “Incridia-24” held at NMAM Institute of Technology, Nitte, from 22nd to 24th February 2024.
- The students of AIML department were part of the "Yakshasinchana" team of our Institute that won Third prize in "Yakshothsava 2024" held at Shri Dharmastala Manjunatheshwara Law College Mangaluru on 23, 24, 25 February 2024.
- Mr. Ganesh Prasad (4MW21AI016) won second prize for Hasya Vesha
- Mr. Ganesh Prasad (4MW21AI017) got best performer of the team award and won first prize for Raja Vesha.
- Vidhisha Nelli (4MW21AI057), Manish (4MW22AI021), Nishanth (4MW22AI027), Nagendra Pai (4MW22AI017) and Surabhi Jogi (4MW22AI050) also gave excellent performances in the Prasanga "Bhishma Pratigne" on 24th February 2024 and "Sudanva–Arjuna Kalaga" on 25th February 2024.

- Ms. Sameeksha R Shetty (4MW21AI042) was part of the SMVITM women's team that secured 4th place in VTU Mangalore division throwball intercollegiate tournament held on 14 February 2024.

SMVITM

# Newsletter by

## Department of Artificial Intelligence & Machine Learning


**Shri Madhwa Vadiraja Institute of Technology and Management**

**Vishwothama Nagar, Bantakal - 574115**

**Udupi District, Karnataka**

**Phone: 7483031199/ 7483031200 (O), 9945357819 (P)**

**www. sode-edu.in**