PROF. VARSHA R

Assistant Professor | Department of Machine Learning (AI & ML)

B. M. S. College of Engineering, Bengaluru, Karnataka

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PROFESSIONAL PROFILE

Academic professional in Artificial Intelligence and Machine Learning with four years of teaching experience, student mentoring, curriculum delivery, project supervision, and academic coordination. Areas of teaching and research include machine learning, deep learning, natural language processing, image processing, and generative AI. Currently pursuing a Ph.D. in Generative AI. Committed to outcome-based education, project-based learning, continuous improvement in teaching, and translating AI methods into practical applications.

ACADEMIC QUALIFICATIONS

Qualification	Specialization / Discipline	Institution	Year / Status
Ph.D. (Pursuing)	Generative Artificial Intelligence	Visvesvaraya Technological University (VTU)	Pursuing; registered 2025
M.Tech.	Computer Science & Engineering – Machine Intelligence	PES University, Bengaluru	2022
B.E.	Information Science & Engineering	Don Bosco Institute of Technology, Bengaluru (VTU)	2020

TEACHING EXPERIENCE

Assistant Professor | Department of Machine Learning (AI & ML), BMSCE, Bengaluru | Four years of teaching experience.

- Teaching and laboratory instruction across AI, machine learning, deep learning, data structures, design and analysis of algorithms, data analytics, and related computing courses, as allocated.
- Use of outcome-based education practices, project-based learning, flipped-classroom activities, quizzes, coding exercises, debugging tasks, and online coding platforms.
- Student mentoring, project guidance, assessment design, course documentation, and academic feedback-based improvement.
- Development and evaluation of programming and application-oriented assignments to strengthen conceptual understanding and practical implementation.

RESEARCH INTERESTS

Machine Learning; Deep Learning; Natural Language Processing; Image Processing and Computer Vision; Generative AI and Large Language Models; Retrieval-Augmented Generation (RAG).

RESEARCH PUBLICATIONS AND SCHOLARLY OUTPUT

- Varsha R, Rashmi S. G., Shilpa K. N., and Manasa, “Intelligent Laptop Assistance Chatbot Using Retrieval Augmented Generation,” 4th IEEE International Conference on Knowledge Engineering and Communication Systems, 2026.
- Varsha R, Shridevi Sali, Tejaswini M, and Chaithra H. N., Foundations of Machine Learning: Concepts and Techniques, book, 2025.
- Varsha R, Amit, Chetan S. Yamakanamardi, and Naveen M. Kamagoud, “READ-EASY: Automating PDF Interaction Using LangChain,” IJIRT, Volume 12, Issue 6, November 2025.
- Varsha R, Pranava C. Hiremath, Sreenivas Gurram, and Rohit B, “SPEAR (Split Panel Engine for Automated Rendering): An Innovative AI-Powered Web Development Assistant,” 11th National Conference on Advancements in Information Technology (NCAIT 2025), JSSATEB.
- Varsha R, Ryan Gupta, Yuktha B. Ramji, and Suja Jayan, “AI-Powered Chatbot for Food Ordering System,” 11th National Conference on Advancements in Information Technology (NCAIT 2025), JSSATEB.
- Varsha R and Likitha P, “Applying Machine Learning for Prediction of IVF and Selection of Blastocyst Images,” International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET), 2022.
- G. S. Gowramma, Shantharam Nayak, K. Rakshitha, R. Varsha, and T. Jayashree, “Development of Robust and Real Time Web Based IVF Success Rate Prediction Using Machine Learning,” ICDSMLA 2020.

STUDENT PROJECT GUIDANCE AND ACHIEVEMENTS

- Guided the student project "Tumour Growth Monitoring Using Dynamic Imaging," which received first place in the One-Day State-Level Project Competition – Innovate, Exhibit and Archive 2025, organized by the Department of Computer Science and Engineering, Bangalore Institute of Technology (BIT), as stated in the BMSCE faculty profile.
- Guided and mentored student projects involving machine learning, AI-enabled applications, and software prototypes.
- Project Open Day and project-review coordination, including mentoring teams on implementation, testing, presentation, and documentation, as applicable to assigned responsibilities.

INVITED TALKS, RESOURCE PERSON CONTRIBUTIONS AND OUTREACH

- Resource person, "Generative AI for Civil Engineering Students," Techmiya programme conducted in collaboration with the Civil Engineering and Machine Learning departments, 2026.
- Guest lecture, "Recent Trends and Applications in Machine Learning," SJBIT, Bengaluru, 2025.
- Resource person, One Week Staff Development Program on "Python for Machine Learning," BMSCE, 7–11 July 2025.
- Resource person / technical contributor on "Modern Deep Learning Techniques for Data-Driven Intelligent Systems."
- Technical talks and knowledge-sharing sessions on "Recent Trends and Applications in Machine Learning," "Data Structures and Its Applications," "Machine Learning for Civil Engineering," and "How to Integrate Artificial Intelligence in Business."
- Resource person for Hackaphasia during Phase Shift 2024, the international-level annual technical symposium at BMSCE.
- Industrial training: Government Tool Room and Training Centre (GTTC), Programmable Logic Controller and Industrial Internet of Things; Techmiya Solutions, Generative AI with LlamaIndex, LangChain, and RAG.

FACULTY DEVELOPMENT PROGRAMMES AND PROFESSIONAL DEVELOPMENT

Selected programmes evidenced by the uploaded certificate collections; dates and exact programme names should be checked against each certificate.

- IUCEE Felder–Brent Effective Teaching and Learning (FBTL) Course 2025–26 — certificate of passing.
- FDP on Emerging AI Technologies: From Machine Learning to Generative AI, BGSCET, 27–31 January 2026.
- FDP on Research Methodology and Pedagogy for Academic Excellence, Sir M. Visvesvaraya Institute of Technology, 9–14 February 2026 (verify end date from certificate).
- FDP on Indian Knowledge Systems, BMSCE, 4–9 August 2025.
- Empowering Educators through Emerging IT Technologies, BMSCE, 28 July–1 August 2025.
- FDP / workshop on Generative AI and Large Language Models, SJBIT (certificate uploaded; verify exact title and dates).
- Workshop on Emerging Trends in AI and Machine Learning, Brainovision / AICTE-related programmes (verify exact title and dates from certificates).
- Additional professional development certificates include Outcome-Based Education, Computer Vision, Full Stack Development, recent trends in machine learning, Python programming, AI for cybersecurity, AI in space exploration, and other teaching/technical workshops.

ACADEMIC AND INSTITUTIONAL RESPONSIBILITIES

- Department Academic Audit Committee (DAC) member, Department of Machine Learning (AI & ML), BMSCE, as listed on the department website.
- Board of Examiners (BOE), CIE question-paper scrutiny, and department SEE audit-related responsibilities, as assigned.
- Codetantra SPOC; Project Coordinator; Timetable Coordinator; Induction Coordinator; Gradient Club Coordinator.
- Faculty coordination for student induction, project reviews, project exhibitions, academic activities, and student mentoring.
- Contribution to course planning, assessment preparation, laboratory exercises, student performance monitoring, and academic documentation.
- Co-Principal Investigator, NexEng AI (include project details and appointment evidence if required).

TEACHING AND LEARNING PRACTICES

- Outcome-Based Education (OBE): course outcomes, assessment alignment, attainment review, and action planning.
- Project-Based Learning (PBL): application-oriented student projects and iterative reviews.
- Flipped classroom, peer learning, Think–Pair–Share, quizzes, coding challenges, code debugging, and guided online learning.
- Continuous assessment and feedback-informed improvement in course delivery and laboratory practice.

TECHNICAL AND PROFESSIONAL COMPETENCIES

Artificial Intelligence and Machine Learning; Deep Learning; Natural Language Processing; Generative AI; Large Language Models; Retrieval-Augmented Generation; LangChain; LlamaIndex; Python programming; algorithmic problem solving; AI application development; outcome-based teaching and assessment.