

Ketaki Dabade

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EDUCATION

Columbia University

Master of Science in Computer Science

New York, NY

Aug 2025 – Dec 2026

Dr. Vishwanath Karad MIT-WPU

Bachelor of Technology in Computer Science and Engineering, 3.74/4

Pune, IN

Jul 2021 – Jul 2025

RESEARCH EXPERIENCE

Complex Resilient Intelligent Systems Laboratory, Columbia University

New York, NY

Research Assistant under Professor Venkat Venkatasubramanian

Sept 2025 – Present

- Developing hierarchical Sparse Autoencoder (SAE) framework to decompose LLM internal representations, implementing PyTorch training pipelines and analyzing feature activation patterns across transformer layers to identify interpretable circuits in GPT-2 and Qwen3 models

AI and ML Lab of NITTTR - Siemens Centre of Excellence

Bhopal, IN

Research Assistant

Feb 2024 – Mar 2024

- Spearheaded ensemble ML models analyzing music-mental health correlations, achieving 93.19% accuracy through Random Forest and Gradient Boosting algorithms

WORK EXPERIENCE

AI4M Technology Private Limited

Pune, IN

Deep Learning Engineer Intern

Jul 2024 – Dec 2024

- Engineered real-time defect detection system using YOLOv7/YOLOv8 with DeepStream SDK on NVIDIA Jetson GPU, designing REST APIs for model inference and CI/CD pipeline that reduced detection latency by 25% across 3 production lines
- Architected multi-threaded Python backend with TensorRT optimization and Docker containerization, implementing unit tests achieving 85% code coverage for seamless production deployment

ViLA EmachWirken Private Limited

Pune, IN

Data Analyst Intern

Jun 2022 – Dec 2022

- Built clustering models analyzing customer behavior and created Grafana dashboards tracking KPIs, enhancing operational visibility by 30% and presented analytical findings to management through comprehensive reports

PROJECTS

CanMan - Full-Stack Canteen Management System | Flask, MongoDB, React, D3.js, HTML/CSS

2024

- Led a team of 5 to design a full-stack system with an interactive frontend (HTML/CSS) and Flask backend, featuring an NLP chatbot and D3.js visualizations
- Won 2nd place at HACKMITWPU 2024

SkillSet Sherpa - Career Guidance Platform | Flask, LLM, EasyOCR, HTML/CSS

2024

- Architected a Flask-based platform with a responsive frontend (HTML/CSS), integrating GPT-3 LLM, RIASEC aptitude assessment, and EasyOCR for resume parsing
- Published in Springer LNNS. DOI: [10.1007/978-981-97-9523-9_23](https://doi.org/10.1007/978-981-97-9523-9_23)

ViziAssist ADAS | NVIDIA Jetson, YOLOv7, Raspberry Pi Camera

2022

- Directed team of 4 members to construct road-obstacle detection system achieving 0.681 mAP. Published in Springer CCIS. DOI: https://doi.org/10.1007/978-3-031-93688-3_6
- Communicated technical concepts and secured top 20 team ranking at national level KPIT Hackathon 2022

EEG Brain-Computer Interface | Python, KNN, Emotiv EPOC X, Blender

2025

- Engineered BCI achieving 97.63% accuracy utilizing KNN to translate neural signals into 3D hand gesture control through Blender software and final output shown using Unity integration.
- Gathered data from participants ranging from ages 20 to 22 using the Emotiv EPOC X Headset

SKILLS

Languages: Python, C/C++, JavaScript, R, HTML/CSS, SQL

Software Development: REST APIs, Flask, React Native, Git, Linux, Docker, PostgreSQL

ML/AI Frameworks: PyTorch, TensorFlow, HuggingFace, Keras, OpenCV, Scikit-learn, LangChain, NLTK, Streamlit

Tools: Azure, Grafana, Apache Hadoop, NVIDIA DeepStream, NVIDIA Triton, TensorRT