KETAKI DABADE

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EDUCATION

Columbia University, New York City, United States of America **Expected: December 2025**
Master of Science in Computer Science

Dr. Vishwanath Karad MIT-WPU, Pune, India **Expected: July 2025**
Bachelor of Technology in Computer Science and Engineering **(CGPA: 8.9/10)**

PROFESSIONAL EXPERIENCE

AI4M Technology Private Limited, Pune, India | *Deep Learning Engineer Intern* **July 2024 - December 2024**

- Leveraged DeepStream SDK using YOLOv7 and YOLOv8 to detect defects in real-time using videos collected from Raspberry Pi cameras and sensors in a car manufacturing factory on the NVIDIA Jetson GPU with the deployment done on Triton.
- Learning and collaborating to create real-time factory simulations using Physics Informed Neural Networks (PINN), NVIDIA Modulus, and NVIDIA Omniverse, integrating data from water flow meters, chemical dosing systems, and temperature sensors to design smart skid systems.
- Building an internal project using Google workspace and Looker Studio to optimize company's progress and automate FDS (Functional Design Specifications) document.

ViLA EmachWirken Private Limited, Pune, India | *Data Analyst Intern* **June 2022 - December 2022**

- Streamlined reporting processes using Excel, SQL and Python and developed clustering models analyzing customer purchasing behavior and visualized using Grafana for products including self-priming, pressure-boosting systems, shadow-well, and borewell pumps.
- Developed interactive Grafana dashboards tracking KPIs for pump efficiency rates and MTBF across product lines, improving operational visibility by 30%.

RESEARCH

AI and ML Lab of NITTTR - Siemens Centre of Excellence, Bhopal, India | *Trainee* **February 2024 - March 2024**

- Led a team to develop a Machine Learning system using ensemble models that analyzes correlations between music genre preferences and mental health indicators across age demographics achieving an accuracy of 93.19%.
- Utilized advanced classifiers including RandomForest, GradientBoosting, Bagging, AdaBoost, and Multi-Layer Perceptron to predict and analyze performance evaluation using precision, recall, and F1-score metric.

ACADEMIC PROJECTS AND PAPER

EEG-Powered Brain-Computer Interface for 3D Hand Gesture Control

- Developed an EEG-powered Brain-Computer Interface (BCI) model to translate neural signals of hand movements into control mechanisms for a 3D hand model simulation by utilizing the Emotiv EPOC X 14-channel EEG headset to record raw brainwave data.
- Achieved a cross-validation accuracy of 97.63% using the K-Nearest Neighbors (KNN) classifier for classifying EEG-based motor imagery gestures, outperforming other traditional and deep learning models.
- Integrated the classified EEG data with a 3D hand model in Blender for movement simulation, establishing a proof-of-concept for BCI technologies in enhancing user interaction with digital environments.

ViziAssist

- Set up a road-obstacle detection system (ADAS) using NVIDIA Jetson Nano with Yolov7 to effectively categorize seven road obstructions, including vehicles and pedestrians, achieving a mean Average Precision (mAP) of 0.681.
- Presented the paper titled "ViziAssist: Visual Assistance for Visually Impaired Drivers" at the 9th International Conference on Computer Vision and Image Processing, in December 2024 with further publication in Springer's Communications in Computer and Information Science.
- Advanced to the Pre-Finale round of KPIT Sparkle in 2022, placing the project among the top 100 teams nationwide.
- Qualified for the 2024 Smart India Hackathon at college level with ViziAssist being an official entry in the competition.

SkillSet Sherpa

- Built a career guidance chatbot utilizing a pre-trained large language model; the system featured a comprehensive web interface, with Python Flask powering the backend.
- Performed a comprehensive OCR model testing and used the EasyOCR model with an accuracy of 0.552 that extracts information from transcripts, while incorporating Holland Test (RIASEC) results and prompt engineering.
- Presented the paper titled "SkillSet Sherpa: Career Counselling with Large Language Models" at the ICT4SD conference, 2024 held in Goa which is published in Springer's Lecture Notes in Networks and Systems series.
- DOI : *https://doi.org/10.1007/978-981-97-9523-9_23*

CanMan
- Constructed and implemented a canteen management system, using Full Stack technologies, a recommendation system, and Natural Language Processing for streamlining food ordering and vendor management along with a user-friendly Chatbot.
- Employed technologies such as Python Flask, MongoDB, HTML, CSS, JS, NLTK, and D3.js for system operations.
- Achieved 2nd place in HACKMITWPU 2024 Entrepreneurial Hackathon for the innovative startup concept "CanMan".

OneView
- Involved in the development of a web-based event management application with image-capturing and previewing capabilities.
- Integrated Python Flask, MongoDB, HTML, CSS, and JS for interface and DBSCAN for facial data clustering.

Machine Learning and Game Theory in Team Sports Strategy
- Conducted research on applying machine learning and game theory in sports, focusing on match outcome prediction, player performance analysis, and strategic decision-making.
- Explored frameworks such as Markov games to model dynamic interactions in team sports.

Spotify-themed Portfolio Website
- Developed and deployed my personal portfolio website with a Spotify based theme. Used HTML, CSS, JS and incorporated a chatbot functionality within the web page.
- Link - https://ketaki-dabade-portfolio.vercel.app/

TECHNICAL SKILLS
- Languages: C, C++, Python, SQL, R, CUDA
- Web Technologies: HTML, CSS, JavaScript, Flask
- Tools and Platforms: Git, Linux, MongoDB, Docker, PINN
- NVIDIA Platforms and Frameworks: DeepStream, Triton, Omniverse, Modulus
- ML: Computer Vision (Yolov7, Yolov8), PyTorch, TensorFlow
- Data Science: Data Visualization, Data Analysis
- Others: Computer Networks, Operating Systems, Data Structures and Algorithm

COURSES AND CERTIFICATIONS
- Google Project Management Professional Certificate (November 2024) - Google, Coursera
- Machine Learning Specialization (July 2024) - DeepLearning.AI, Stanford Online
- Accenture North America Data Analytics and Visualization Job Simulation (March 2024) - Forage
- Introduction to AI in the Data Center (February 2024) - NVIDIA Deep Learning Institute
- Google Data Analytics Professional Certificate (December 2023) - Google, Coursera
- Mastering Data Structures and Algorithms using C and C++ (September 2023), The Git and Github Bootcamp (February 2024) - Udemy

EXTRACURRICULAR ACTIVITIES
- Won the badminton women's singles and mixed doubles at the National Academic Immersion Program at NITTTR, Bhopal (2024)
- Served as a volunteer at BC Girls Hostel (orphanage), teaching English and dance to support children's development. Also introduced python programming to girls of 7th, 8th, and 9th grade. (2023)
- Volunteered and led a team of 20+ people to help organize the Solapur Marathon. (2023)
- Worked at TEDxMITWPU in content creation and AAROHAN: THE Cultural Fest in designing and implementing themed decorative concepts. (2022)
- Writing a frequently updated poetry and sports blog on WordPress, combining creative writing with analytical sports coverage. (2021- Present)