Vaibhav Hawaldar

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EDUCATION

North Carolina State University, Raleigh, NC, USA — Aug 2024 – May 2026
Master of Science in Computer Science — **GPA: 4.0/4.0**
Coursework: Machine Learning, Neural Networks, Parallel Algorithms, Software Engineering, Object-Oriented Design and Development, Data Analysis and Algorithms, IoT Analytics, Computer Networks, Biometrics

NMIMS University, Mukesh Patel School of Technology Management, Mumbai, India — Aug 2020 – May 2024
Bachelor of Technology in Computer Engineering — **GPA: 3.76/4.0**
Coursework: Artificial Intelligence, Operating Systems, Data Structures and Algorithms, Database Management Systems

WORK EXPERIENCE

Software Engineering Intern, Ribbon Communications, Raleigh, USA — July 2025 – Present
- Contributed to real-time communication software, enhancing SIP call processing, WebRTC, and TCP/IP networking
- Integrated C/C++ networking libraries with gRPC and RESTful APIs to deliver high-performance distributed systems
- Leveraged Unix/Linux operating system concepts such as process management and sockets to enhance system reliability
- Executed debugging, testing, and optimization in a production-grade telecommunications environment using Agile and Git

Research Assistant, NC State University — May 2025 – July 2025
- Designed and analyzed multi-institutional datasets for early student success prediction using statistical techniques
- Evaluated feature–performance relationships, identifying variability of predictive features across datasets
- Co-authored *"A Study of Early Student Success Prediction using Programming Log Data"* (under review at SIGCSE).

Machine Learning Intern, **FutureTayari,** Mumbai, India — Dec 2023 – Jun 2024
- Enhanced user engagement by 50% with gamified card quiz using LLM for automated content creation
- Developed React-based front-end with Chakra UI and Framer Motion on a Firebase NoSQL backend
- Automated deployments via a CI/CD pipeline with GitHub and Vercel

PROJECTS

Plant Disease Detection using YOLO | Machine Learning, Image Processing, Computer Vision (Python, Yolo, Flask)
- Established a plant disease detection system using SVM, Random Forest, and YOLOv5 and flask for model deployment
- Transitioned to YOLOv8 to reduce training time by 30% using custom annotated dataset to enhance accuracy by 60%
- Co-authored a research paper currently under peer review: "**Revolutionizing Plant Disease Detection in Agriculture"**

HealthSync | Web Development (LLM, AI, React, Python, Firebase, Nextjs, HTML, CSS)
- Developed a Next.js-based health portal an admin dashboard with ChartJs libraries, and a responsive UI using Tailwind
- Integrated OpenAI & LLM for automated medical report analysis and used NoSQL Firebase for backend
- Implemented CI/CD workflows via GitHub Actions and Vercel, reducing report processing time by 30%

PySpark ETL Pipeline | Python, Big Data, AWS, Docker and Cloud Computing
- Implemented an ETL pipeline using PySpark to extract data from MS SQL Server and load it into an AWS S3
- Used Docker to execute Terraform for provisioning AWS infrastructure, and automated data ingestion using AWS Lambda

Predictive Maintenance System | Machine Learning, Deployment (Python, Scikit-learn, Streamlit, LLMs)
- Trained predictive maintenance models using industrial IoT sensor data for failure detection
- Deployed real-time monitoring dashboard with LLM-powered maintenance insights using Streamlit

IoT Analytics for Environmental Monitoring | Data Science, Probability & Statistics and IoT
- Performed statistical analysis and built regression models to analyze environmental sensor data and improved model

TECHNICAL SKILLS

Programming Languages: Python, C++, Java, TypeScript, HTML/CSS, SQL , MySQL, PostgreSQL
Frameworks/Libraries: NumPy, Pandas, Scikit-learn, TensorFlow, PyTorch, OpenCV, Transformers (Hugging Face)
Tools: Tensorflow, PyTorch, Jupyter , Git, CI/CD, Linux/UNIX, Flask, AWS (incl. Boto3), Azure, Docker, Kubernetes, Spark
AI/ML: NLP, Deep Learning, CV, LLMs, Transformers (Hugging Face), Model Evaluation
Achievements: Finalist – Amazon ML Summer School (Top 0.1%), HackerRank – 5-star problem solver