Vivek Dhir Rangoju

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Education

Northeastern University — Boston, MA
Masters of Science in Computer Science; GPA: 4.0/4.0 — *Sept. 2024 – May 2026*

Mahindra University — Hyderabad, Telangana
Bachelor of Technology in Computer Science and Engineering — *Oct. 2020 – June 2024*

Skills

Python, C/C++, JavaScript (Nodejs, Expressjs, Reactjs), x86 Assembly, SQL, MongoDB, AWS (EC2, S3, Lambda), Docker, Git, Github, Linux

Achievements

3-Time International Collegiate Programming Contest (ICPC) Regionalist (2022, 2023, 2024)

Voxel51 Visual AI Hackathon @ Northeastern University Winner Developed a real-time collision avoidance system for airports and wind farms, leveraging **computer vision and AI**. (Python, YoloV8, image-processing)

Dining Menu Bot (1500+ Users): Built a Python bot using Hikari and Cron Trigger to provide students with automated daily dining menus, enhancing convenience and reducing manual lookup. (Python, Hikari, Cron-Triggering)

Experience

Software Development Intern* — *Aiden AI, *Hyderabad, Telangana* — *Jan 2024 - Aug 2024*

- Optimized AI Systems and Workflows - Reduced large language model size by 20% using advanced quantization (GGUF, LLaMA.cpp) while maintaining 90% performance and participating in fine-tuning (PEFT) on custom datasets. Built RAG-based knowledge systems, automated workflows, and improved server deployment efficiency using Python and AWS SDK.
- Enhanced Automation and User Experience - developed minutes of meeting, cutting documentation time. Designed and developed a usability rating system by analyzing user interactions.

Software Development Intern* — *Oracle, *Hyderabad, Telangana* — *Jun 2023 – Aug 2023*

- Enhanced bancassurance project by designing UI/UX in Figma, developed backend with Spring Boot, and implementing frontend in Angular to build data visualizations for improving decision-making efficiency and improving customer satisfaction.
- Made an animation video to explain oracle bancassurance. Additionally, streamlined document templates and improved documentation organization.

Research Papers

"Soybean Genome Clustering Using Quantum-Based Fuzzy C-Means Algorithm" presented at The 30th International Conference on Neural Information Processing (ICONIP), China, November 2023. — (First Author)

Projects

OneAIClick.com | *Python, LLMs, PEFT/LoRA*

- Built private LLM pipeline tooling and a node-based GUI for secure fine-tuning and deployment of HuggingFace models with full data privacy and developed infrastructure for agentic RAG and low-parameter fine-tuning workflows, offering cost-effective alternatives to hiring AI specialists.

High Performance Computing Repository | *C/C++, omp.h, x86 assembly*

- Developed parallel algorithms like merge sort and matrix multiplication using OpenMP for CPU-based parallel processing, achieving **10x performance improvement.** Written matrix operation programs with SIMD parallelism optimization for 2048x2048 matrices, prime number identification, GCD/LCM calculations, and polynomial evaluation and designed recursive functions for mathematical computations in 8086 programming.

Prime Plot: Business Location Optimization | *Python, LLMs, Probability, Machine Learning, Javascript*

- Developed a city-simulation tool using **Generalized Voronoi Diagrams (GVDs)**. Integrated and created visualization on maps with spatial, demographic data, probabilistic heatmaps, and ML (Random Forest and K-NN) pipelines for business location choice decision making. Also, designed an explainability module with LLM.

Battleship Bot | *Python*

- Built a bot that plays battleship game optimally in under 49 moves (50% better than random) using a probabilistic heatmap strategy. **Won** at Enigma Battleship Hackathon