Divya Bhanu Pothavajhyula

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Education

University of Michigan, College of Engineering — Ann Arbor, MI
Master of Science in Engineering in Computer Science (Sequential Program) — *Jan. 2026 – Dec. 2026*

University of Michigan, College of Engineering – *Grad. Summa Cum Laude* — Ann Arbor, MI
Bachelor of Science in Engineering in Computer Science, Minor in Physics — *Aug. 2022 – Dec. 2025*

Experience

Software Engineering Intern — May 2025 – Present
Lockheed Martin — *Grand Prairie, TX*

- Designed and delivered a Python-based, AI-powered document-to-code automation system to transform engineering requirements into compliant code, reducing manual engineering effort by 70%
- Translated ambiguous requirements into actionable technical specifications, aligning product goals with constraints
- Partnered with engineers, program managers, and stakeholders to evaluate tradeoffs across accuracy, scalability, and runtime behavior; communicated results to technical and non-technical audiences
- Defined validation criteria / performance constraints to ensure correctness, compliance, and production readiness

Graduate Student Instructor – Intro. to Computers & Programming — Aug. 2023 – Present
University of Michigan — *Ann Arbor, MI*

- Lead weekly labs and office hours for 75+ students, simplifying complex concepts and fostering collaboration
- Conveyed complex technical concepts to diverse audiences, adapting explanations based on background and goals

Teaching Assistant – Medlytics Course — Summer 2023 – Present
MIT Beaver Works — *Cambridge, MA*

- Instruct 40+ students in machine learning fundamentals (e.g., supervised learning, CNNs, and model evaluation)
- Guide capstone projects involving end-to-end ML pipelines and performance debugging

Projects

Real-Time Object Detection for Construction Safety | *PyTorch, TensorFlow, Git, AWS* — Dec. 2024 – Present

- Led classification and inference stages of the pipeline, owning model selection & system-level design decisions
- Evaluated CNN and transformer-based architectures (e.g., YOLOv8) under latency, accuracy, and real-time deployment constraints; determined targets with stakeholders and drove system changes accordingly
- Collaborated cross-functionally to integrate classification module into end-to-end production system
- Analyzed performance bottlenecks across data ingestion, inference, and post-processing achieving 88%+ accuracy

Distributed MapReduce System | *Python, Sockets, Multithreading* — Fall 2024

- Designed and built fault-tolerant MapReduce framework with a manager–worker architecture, supporting dynamic task scheduling, worker crash recovery, and correctness / scalability under concurrent workloads
- Defined execution flow, failure handling, & synchronization mechanisms; implemented socket-based communication / multithreaded coordination to enable reliable distributed execution across simulated cluster nodes

Virtual Memory Pager | *C++, Linux* — Fall 2025

- Implemented a demand-paged virtual memory system supporting multiple processes with swap & file-backed pages
- Designed page fault handling, lazy allocation, eviction (clock replacement algorithm), and copy-on-write semantics
- Reasoned about tradeoffs across memory usage, disk I/O, and latency to optimize pager

Technical Skills & Additional Information

Languages: C++, Python, C, Java, Shell, JavaScript
GPU / Parallel Computing: CUDA (self-learning), GPU execution model, parallel programming
Systems & Performance: Operating systems, concurrency, synchronization, scheduling, fault tolerance
AI / ML: Transformers (& ViTs), CNNs, model optimization, LLMs, PyTorch, TensorFlow, reinforcement learning
Frameworks / Tools: Git, Linux, PowerPoint, SQL, MapReduce, AWS (EC2, S3), debugging & profiling, React
Achievements & Coursework: UMich Engineering Dean's Honor List (all terms), Research Project Team Lead (since 2024) Richard Earhart Scholarship; Scalable Systems for Agentic AI, OS, ML, AI, Technical Program Management
Outside Interests: Video editing, driving, reading (mystery), traveling, trying new foods (especially desserts)