Mihir Vador

(614) 208-8510 | mvador@umich.edu | vador.dev | linkedin.com/in/mihirvador | github.com/mihirvador

Education

University of Michigan May 2026

Bachelor of Engineering in Computer Science and Pure Mathematics. Minor in Electrical Engineering *GPA 3.8/4.0*

Courses: Distributed Systems, Operating Systems, Networking, Machine Learning, Data Structures and Algorithms, Computer Architecture, Computer Vision, Probability Theory, Real Analysis, Discrete Mathematics

Experience

Palantir - *Software Engineering Intern* May 2025 – Present

- Gotham - Infrastructure Team

Apple - *Software Engineering Intern* January 2025 – May 2025

- Managed a system of 50000 Macos VMs, processing 5 PB of data and produced 10 TB of artifacts daily. Worked closely with CoreOS and Virtualization teams.
- Led the bring up of our system on new underlying hardware, working with 20+ individuals to ensure correctness, performance, and security.
- Created a distributed tracing system across our services in Swift, increasing visibility by 45%
- Optimized our distributed compute system through data from the distributed tracing and improved performance by 28%
- Discovered numerous OS and Virtualization regressions through distributed tracing and rapid dog-fooding. Leading to performance and security improvements across the board.
- Implemented a new deployment architecture cutting deployment times by 85% across p10 to p999
- Added system metrics logging for our services using Swift and C APIs

Aerovironment - *Software Engineering Intern* June 2024 – August 2024

- Led the integration of the Skydio X2D into Kinesis, involved extensive system design, networking, C++, Java, Kotlin, JNI, multi-threading, and fault tolerance, resulted in a 30% increase in system robustness and a 25% improvement in operational efficiency.
- Worked on drones from AeroVironment, Skydio, Parrot, and Red Cat. Also on Boston Dynamics' Spot.
- Created new libraries and firmware features in C++ making using multi-threading and parallelization, resulting in a 20% increase in system stability and performance.
- Optimized the video streaming platform using UDP, RTP, RTSP, and GStreamer, achieving a 40% reduction in latency and a 50% improvement in video quality and reliability.
- Developed computer vision solutions by creating YOLO models for embedded systems, enhancing real-time object detection and tracking capabilities.

Automotive Research Center - *Machine Learning Research Assistant* January 2024 – Present

- Conducting research with the US Army for video compression and behavioral cloning
- Created a novel video compression method using Tucker decomposition, and achieved 200x video compression and reducing training time by nearly 50%.
- Working on behavior cloning using diffusion models to replicate and predict human-like behavior in video game environments

Origami Risk - *Software Engineering Intern* May 2023 – August 2023

Projects

Diagnosing Multiple Sclerosis | Python, Tensorflow, SciPy, Cuda

- Designed a CNN for 3D and 2D MRI brain scan analysis, resulting in 85% accurate diagnoses across a range of disease progressions.

Thread Library | C++, Multi-Threading, Mutexes, Conditional Variables, Semaphores, Unix

- Implemented a kernel level C++ thread library in Unix, handling CPU booting, thread management, 80+ CPU support, interrupts, atomicity, and FIFO scheduling order. Also implemented spin-locks, mutexes, and conditional variables using Unix context management.

Multithreaded Network Fileserver | C++ , Boost Library, Threads, Sockets

- Built a heavily concurrent, crash consistent network fileserver supporting multiple users and nested files/folders.
- Utilized committing writes to enable crash consistency, Boost threads and upgradeable reader-writer locks to optimize for maximum concurrency, and POSIX sockets to enable network communication with clients.

Technical Skills

Languages: C/C++, Swift, Go, Java, Kotlin, Python, SQL (Postgres), JavaScript/TypeScript, Dart, ARM Assembly, React.JS
Libraries: PostgreSQL, MySQL, TensorFlow, PyTorch, Node.JS, Tailwind
Developer Tools: Git, Docker, AWS, Linux/Unix, Google Cloud Platform, Visual Studio, PyCharm, Eclipse