Ammar Ateya

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Education

University of Michigan - Ann Arbor **Expected Graduation: Apr 2027**

B.S. in Computer Science and Linguistics, Minor in Mathematics *Ann Arbor, MI*

- **Relevant Coursework:** Data Structures and Algorithms, Operating Systems, Web Systems, Distributed Systems, Machine Learning, Computer Organization, Discrete Mathematics, Linear Algebra, Statistics, Linux Programming
- **Activities and Societies:** V1 Entrepreneurship, Michigan Hackers, Linguistics Club
- **Awards/Programs:** National Merit Scholar, Michigan Seal of Biliteracy in Spanish, 2x Hackathon Winner

Technical Skills

Languages and Frameworks: C++/C, Python, JavaScript, TypeScript, Golang, HTML/CSS, React.js, Next.js, Ruby
Tools and Technologies: Git, AWS, Bash/Linux, SQL, NoSQL, REST APIs, RPCs, Docker/Kubernetes

Experience

GitHub May 2025 – Aug 2025

Software Engineer Intern *San Francisco, CA*

- Spearheaded React rewrite of the Pull Requests Files Changed interface, slashing CPU usage by 12% per request.
- Identified and remediated critical accessibility issues across high-traffic React and Ruby on Rails pages, improving UI/UX for users relying on assistive technology, at least 7% of GitHub users, or 10.5 million active users.
- Led Vitest migration of React packages; identified and removed obsolete code to cut bundle size by 5%.

0xKnowledge Jun 2024 – Aug 2024

Software Engineering Intern *Ann Arbor, MI*

- Developed a full stack Notion-style knowledge base editor in Next.js for clients to manage documentation.
- Managed end-to-end cloud deployment on Vercel, automating the build process with CI/CD pipelines to streamline continuous integration, updates, and minimize downtime.
- Designed and implemented SQL schema, integrated with Supabase to handle real-time data and user authentication, improving query performance by 25% and ensuring efficient data management.

Projects

Thread Library | *C++, Multi-threading, Mutexes, Condition Variables, Semaphores, Unix*

- Implemented a kernel C++ thread library on Unix, handling CPU booting, thread management, management of 50+ CPUs, interrupts, atomicity, and FIFO scheduling order.
- Designed spin-locks, mutexes, conditional variables utilizing advanced Unix context management.
- Enforced comprehensive unit tests to assure the library's soundness, identify and rectify errors, and guarantee optimal performance in diverse scenarios.

Fault-Tolerant Replicated Key/Value Store | *Go, RPC, Concurrency, Distributed Systems*

- Built a distributed key/value store implementing primary/backup replication, crash recovery, and view-based leader election to ensure availability under server failures and network partitions.
- Engineered a custom replication and failover protocol leveraging Go RPCs, goroutines, and synchronization primitives to enforce strong consistency and at-most-once semantics across view changes.

PeteCode: LeetCode Solution Platform | *React, FastAPI, Supabase, GroqCloud, ElevenLabs API, TypeScript*

- Developed a full stack AI-powered platform using React and FastAPI to provide personalized, engaging coaching for LeetCode problems; integrated API responses from GroqCloud (LLaMA 3.2 70b model) and ElevenLabs APIs.

Reddit Machine Learning Classifier | *C++, Naive Bayes Classifier, lldb*

- Developed machine learning classifier in C++, leveraging natural language processing techniques to predict project topics from posts on a general data structures and algorithms learning forum; achieved 92% accuracy.

Computer Vision Fighting Game | *Python, Pygame, OpenCV, MediaPipe*

- Built a desktop game, leveraging OpenCV and MediaPipe to recognize real-time gestures via webcam, and map them to in-game actions such as healing and attacking; won an award at the annual MSU hackathon.
- Designed AI opponents with state-driven logic, allowing for single-player mode, enhancing user interactivity.

Additional

Interests: International Cinema, Film Photography, Language Learning, Track & Field, Soccer, Weightlifting
Natural Languages: English (Native), Arabic (Native), Spanish (Bilingual)