Arhan Chaudhary

+1 (510) 203-0896 | San Francisco Bay Area, CA | chaudh65@purdue.edu | github.com/ArhanChaudhary | linkedin.com/in/arhan-chaudhary | arhan.sh

Education

Purdue University West Lafayette, IN

B.S. Computer Science, Minor in Electrical & Computer Engineering *Aug 2023 — May 2027*

- Cumulative GPA: 3.55/4.0 | Dean's List (x4)
- Relevant Coursework: Compilers, Operating Systems, Data Structures and Algorithms, Computer Architecture, Linear Algebra, Electrical Engineering Fundamentals I & II, Digital System Design

Work Experience

Machine Learning Intern May 2026 — Aug. 2026

Zscaler *San Jose, CA*

- Replaced re2 with Hyperscan, a SIMD multi-pattern regex library: 3x throughput, 80% lower p99 latency under Locust load tests.
- Built a Kubernetes-based ML model conversion pipeline using Ray and ArgoCD, converting PyTorch models on S3 to ONNX.

Compiler Engineer Intern May 2025 — Aug. 2025

EnCharge AI *Santa Clara, CA*

- Developed an NPU model binary disassembler in C++ for custom chip hardware, used for analysis in the compiler.
- Designed an efficient and queryable binary interface tool for visualizing hardware simulation output, emphasizing accounting for feedback from prospective internal users. Integrated into the hardware simulation workflow.

Backend Software Engineer Intern May 2024 — Aug. 2024

SPAN *San Francisco, CA*

- Developed an internal tool for aggregating data into a database sink, with extensive documentation on user usage.
- Deployed a highly customizable retry handler for an internal workflow orchestration framework.
- Troubleshooted issues with DataDog and performed general sysadmin debugging.

Projects

Qter (qter.dev) Sept. 2024 — Present

- Architected a computer system that turns the Rubik's Cube into a computer: humans can physically perform computations by following instructions on which moves to perform. Led a team of 4 members to write 60k+ lines of code.
- Built a domain specific optimal twisty puzzle solver. Utilizes multi-threading synchronization using channels and atomics, SIMD programming, pruning techniques, group theory, and novel computer algorithms. Wrote 20k lines of Rust.
- Assembled a custom Rubik's Cube robot from scratch to execute Qter programs, featuring custom firmware and a web app that performs computer vision written in Rust. Used NEMA 17 motors and flexible couplers to achieve 20 turns/second.

NAND (nand.arhan.sh) June 2023 — July 2024

- Programmable 16-bit computer made entirely from NAND gates emulated on the web. Reached #1 Hacker News; 600+ GitHub stars.
- Built custom IDE, programming language, operating system, compiler, and CPU. Authored extensive README writeup.
- Utilized compiled Rust to WebAssembly and multithreaded web workers for performance. Served on a Svelte frontend.

TimeWeb (github.com/ArhanChaudhary/TimeWeb) Oct. 2019 — June 2023

- Conceptualized a passion project and developed a homework management web app that visualizes, quantifies, and prioritizes daily school assignments using Django and JavaScript. Wrote 20k+ lines of code over 3.5 years.
- Created user guide, managed database and migrations, and organized 35+ releases.
- Launched in 2022 with multiple presentations to 250+ students, gaining 700+ users. Currently shut down.

Achievements

- Open source: 7k+ public GitHub commits since 2019; 25+ merged pull requests to open source projects that are not my own.
- CTF competitions: 1st place Starphish CTF at DEFCON 31; 1st place b01lersctf 2023 Purdue division; 10th place SquareCTF 2023 (won $200); top 50 national CTFtime team 2023.
- Technical blogging (arhan.sh/blog): authored 20k+ words over 10+ blog posts; posts reached #1 on Hacker News and Lobste.rs.
- Hackathon (devpost.com/software/gitme-amuryi): won 3rd place at "HelloWorld @ Purdue Fall 2023"
- Rubik's Cube (worldcubeassociation.org/persons/2018CHAU01): personal best solve time of 6.48s; can also solve blindfolded.

Skills

- **Programming Languages**: Rust, C, C++, TypeScript, JavaScript, Python, Java, HTML/CSS
- **Technologies**: Kubernetes, Snowflake, Terraform, Linux, PostgreSQL, GCP, AWS, Cloudflare, Protobuf, Svelte, Flask