

Akshay Trivedi (he/him)

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Professional Experience

Astera Labs, Firmware Engineer Jun 2025—Present
San Jose, CA

Developed firmware for PCIe Gen6 switches that play a significant role in Astera's rack-scale AI and compute platform. Worked at all three layers of PCIe - Transaction, Data Link, and Physical. Gained detailed knowledge of the PCIe 6.0 and PIPE 6.0 (PHY interface for PCIe) standards.

Astera Labs, Software Engineer Intern May 2024—Aug 2024
Santa Clara, CA

Created a toolchain for configuring ASIC firmware, and developed testing infrastructure for pre-silicon ASICs in an emulation platform. Used Jenkins, pytest, I2C. Gained some familiarity with the PCIe 6.0 standard.

TabaPay, Software Engineer Intern May 2023—Aug 2023
Mountain View, CA

Designed and implemented an internal database for TabaPay employees to quickly view their clients' API configuration state. Used Golang and MySQL.

Learned how the card acceptors industry works and gained valuable experience working in a fast-paced and dynamic startup environment.

About Me

I am a systems programmer. I believe that planning, testing, and benchmarking are critical steps in making software. I design solutions that use available hardware resources efficiently.

I am drawn to systems programming because I enjoy tackling problems under constraints. In high school I used Desmos, an online graphing calculator with limited computing features, to build a UI for the game Connect 4 in which I included intelligent computer opponents. This project exemplifies the nature of challenges I aspire to solve in the future.

I am a fast learner; I'm good at understanding documentation and detailed requirements to determine the best solution to a problem.

I also know that I cannot solve the hardest problems on my own, and I often need to work with others to get things done. I am a team player, and I am good at asking for and giving help in a positive manner.

Education

University of Maryland, B.S in CS and Math Aug 2022—May 2025
College Park, MD

Networks (CMSC711, CMSC417), OS (CMSC412), Architecture (CMSC412), Cryptography (CMSC456), Parallel Computing (CMSC416), Algorithms (CMSC451), Data Structures (CMSC420). Num. Analysis I (AMSC466), Lin. Alg. (MATH405), Combinatorics & Graph Thy (MATH475), Axiomatic Set Thy (MATH446), Abstract Alg. (MATH403), Adv. Calc. I (MATH410), Prob. Thy (STAT410).

GPA: 4.000.

Skills

Programming Languages: Zig, Python, Rust, C/C++, Golang, Java.

Linux-based operating systems.

Graphics programming using Vulkan, OpenGL, and WebGPU.

PCIe 6.0 and PIPE 6.0 standards.

Projects

Mixed Messages, Term Research Project 2025
CMSC711 Computer Networks @ UMD

Collaborated with two undergraduate classmates on a research term project on the topic of metadata-private distributed communication protocols.

Stannox, Individual Hobby Project 2021—Present
A cross-platform [voxel](#) art editing and rendering application with a client/server architecture designed for collaborative creation. Through its many iterations, this project taught me Zig, Rust, Vulkan, OpenGL, and WebGPU.

Awards

Dean's List; Fall 2022 to Spring 2025 - University of Maryland

[Grant Family Outstanding Achievement Undergraduate Student Award in Computer Science and Mathematics](#); May 2025 - University of Maryland