

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 infrastructure for testing pre-silicon ASIC firmware on 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.

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 Comp. (CMSC416), Algorithms (CMSC451), Data Struct. (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.

Projects

Mixed Messages, Research Term Project

2025

CMSC711 Computer Networks @ UMD

Collaborated with two undergraduate classmates on a research paper on 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.

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, including the ability to play with intelligent computer opponents. This project exemplifies the nature of challenges that 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.

Skills

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

Systems programming (firmware and software).

Graphics programming: OpenGL, Vulkan, and WebGPU.

PCIe 6.0 and PIPE 6.0 standards.

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