

JYOTHI RAVILLA

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EDUCATION

Washington University in St. Louis — B.E., Computer Science
Arcadia University — B.Sc., Computer Science

Expected May 2027
May 2025

TECHNICAL SKILLS

Languages: Java, C++, Python, SQL, Bash/Shell Scripting

Web & Data: ReactJS, NoSQL, PostgreSQL, BigQuery, LaTeX

Cloud & Platforms: Google Cloud (Vertex AI, Compute Engine, BigQuery), AWS Cloud Architecture, Cloudflare Workers & Pages

Systems & Embedded: Stepper motor control (TMC2160 driver), firmware algorithm design, Linux

Tools & Security: Git, JIRA, Confluence, Tableau, Kali Linux, Metasploit, Penetration Testing

PROFESSIONAL EXPERIENCE

Software Engineering Intern — Bausch + Lomb

Jun 2026 – Aug 2026 | St. Louis, MO

- Designed and implemented closed-loop stepper motor control firmware using the TMC2160 driver on a solid-state illumination board, enabling precise iris positioning to control laser aperture in an ophthalmic surgical device.
- Built a stall-detection homing algorithm using the driver's StallGuard feedback to identify end-of-travel position in place of a physical limit switch, then debugged and iterated on the control loop to eliminate intermittent stall failures and deliver a stable, production-ready implementation.
- Authored software requirements specifications, architecture design documents, and detailed design specs for the Ileos glaucoma laser platform, aligning firmware development with medical-device design-control standards.
- Wrote and expanded automated test suites for the next-generation Stellaris/Innova surgical laser platform to increase verification coverage ahead of release.
- Performed peer code reviews across the embedded software team to uphold code quality and design consistency.

Technology Resiliency Business Analyst Intern — Altice USA

May 2024 – Aug 2024 | Long Island, NY

- Co-developed a multi-agent LLM system on Google Vertex AI with a steering agent that routed queries between BigQuery-search and RAG-search agents to answer questions from unstructured documents.
- Built a Tableau dashboard backed by a daily scheduled BigQuery query, automating data refresh and removing a manual reporting step.
- Created a JIRA dashboard to organize and filter large datasets, improving team visibility into resiliency workstreams.

Software Developer Intern — Eventide Asset Management LLC

May 2023 – Aug 2023 | Boston, MA

- Analyzed and transformed large-scale JSON datasets in Python, building preprocessing pipelines for downstream use.
- Implemented a data validation and push-notification system to catch data-quality issues and alert stakeholders in real time.
- Managed and optimized PostgreSQL databases while developing production Linux and Bash scripting skills.

PROJECTS

- Food Delivery App** — Built a full-stack app for a nonprofit that lets administrators track deliveries, identify delays, and monitor driver locations in real time, improving delivery accountability.
- Discord ChatBot** — Built a Discord bot with slash commands for polls, rock-paper-scissors, greetings, and avatar generation for student communities.
- TryHackMe Labs** — Completed hands-on security labs covering penetration testing, Active Directory, and Metasploit.
- Portfolio Website** — Designed and deployed a personal portfolio site (JavaScript, HTML, CSS) via Cloudflare Pages on a custom domain.

LEADERSHIP EXPERIENCE — ARCADIA UNIVERSITY

- Career Peer Mentor:** Conducted résumé and cover letter reviews and guided students on career resources and LinkedIn optimization.
- Resident Assistant:** Facilitated community engagement and resolved conflicts while managing administrative and emergency-response duties.
- Student Leader:** Led orientation activities and campus tours to support incoming and prospective students.

CERTIFICATIONS & HONORS

- AWS – Cloud Architecting
- Google Data Analytics
- Distinguished Dean's Honors List