Areg Hovumyan

ahovumyan@cpp.edu (818) 376-9166 U.S.Citizen

Portfolio: https://portfolio-steel-six-92.vercel.app
LinkedIn: https://www.linkedin.com/in/areg-hovumyan/
GitHub: https://github.com/arhovumyan

Professional Summary

Full-stack and robotics engineer with 4+ years of experience in C/C++, Python, and ROS2 development object recognition systems and real-time communication systems. Proven record of optimizing applications for speed and scale, debugging complex systems, and integrating cloud-based AI solutions. Strong background in PC architecture, embedded systems, and Linux environments, with hands-on experience across the full software lifecycle from design to testing and deployment.

Education

California State Polytechnic University, Pomona   **Sep 2023 – Jun 2027**

Bachelor of Science in Computer Engineering

Related Coursework

Data Structures and Algorithms, Computer Architecture, Operating Systems for Embedded Applications, Digital Logic Design, Intro to Microcontrollers, Object-Oriented Programming, Robotics, Digital Signal Processing, Digital Circuit Design Using Verilog

Experiences

MedusaVR — Full-Stack Software Engineer   **May 2025 – Present**

- Save storage 99% costs by rewiring the entire API infrastructure from previous ($99 - 225GB) to Bunny.net ($1 - 100GB).
- Built end-to-end AI companion platform in Python/Node.js, scaling to 10,000+ concurrent sessions with <100ms latency.
- Implemented safety guardrails, debugging pipelines, and monitoring tools to ensure reliable AI outputs.
- Collaborated with product managers and designers to iterate on features, improving user engagement metrics by 54%..
- Implemented safety measures for AI-generated outputs, including moderation APIs and guardrails, reducing harmful outputs by 30%.

ASTRA/SUAS — Lead of Machine Learning and integration team   **Sept 2025 – Present**

- Develop efficient ROS2 nodes to get real-time camera streams from a live drone. Use python and c++.
- Sped up image processing time by 60% by integrating a new model and reconfiguring the whole infrastructure.
- Created a connection between 2 models (YOLOv8s and MobileNetV3), for image processing and object classifications.
- Taught the whole project system to the new members and delivered a production-level ready product to a competition.
- Ranked 4th among all U.S. teams in the international SUAS UAV Competition.

Independent Projects

Mock Interview WebApp   **Feb 2024 – Mar 2024**

Developed a web application for conducting mock interviews with AI-powered feedback and analysis.
- Designed and deployed a webapp using Next.js, Node.js, and Python scripts to deliver real-time AI feedback.
- Implemented secure authentication with Firebase (Firestore + Auth) and role-based session management.
- Built real-time interview interactions using Next.js and Node.js, deployed on Vercel.
- Optimized UI/UX with React, Tailwind CSS, and dynamic tech stack icons to improve user engagement.

Real-Time Chat App   **Jan 2023 – Feb 2024**

- Created a Socket.IO messaging system supporting live user presence and sub-100 ms latency.
- Secured endpoints with JWT, bcrypt, and Express middleware; maintained 0 security incidents.
- Integrated Zustand for client-side state management, reducing unnecessary re-renders by **25%.**
- Optimized MongoDB queries with compound indexes, cutting average response time from 200 ms to 50 ms.

Skills

- Programming: C, C++, Python, Java, JavaScript (React.js, Node.js, Express), TypeScript, Shell scripting
- Operating Systems: Linux, UNIX, Embedded RTOS
- Databases: PostgreSQL, MySQL, MongoDB
- Cloud/DevOps: Docker, AWS (S3, Lambda), Azure (familiar), CI/CD, Railway, Vercel
- Debugging & Security: Git, GitHub, Perforce (familiar), OAuth2, JWT, TLS/SSL, testing & debugging methodologies
- Architecture & Embedded: PC/CPU architecture, Arduino, ESP32, Microcontrollers, FPGA (Vivado), Verilog
- AI/ML (additional): OpenAI API, Gemini AI integration, PyTorch, TensorFlow basics, Hugging Face

Membserships and affiliations

Member of MEP, IEEE, DIGITAL, ASTRA,
Machine Learning and Artificial Intelligene