Sanjay Ravishankar

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EDUCATION

Carnegie Mellon University   Pittsburgh, PA
Bachelor of Science in Electrical and Computer Engineering   *Expected May 2029*
Relevant Courses: Intro to ECE (18-100), Intro to Computer Systems (18-213, anticipated spring 2026), Discrete Mathematics (21-127), Linear Algebra/Vector Calculus (21-254), Philosophy of AI (80-249)

Edison Academy Magnet School   Edison, NJ
High School Diploma (Overall GPA: 4.70 · Rank: 2/41)   *June 2025*
Relevant Courses: Mechanical Engineering, AP CSA, AP Physics C (Mech, E&M), AP Chemistry, AP Biology, AP Statistics

EXPERIENCE

Research Assistant   *September 2025 - Present*
The ∀ (For All) Lab   Pittsburgh, PA
- Working in a small research team contributing to firmware, electronics, and data visualization for predictive monitoring of hot flashes in postmenopausal women
- Optimizing EmotiBit firmware on Adafruit ESP32 Feather through PlatformIO to maximize photoplethysmography (PPG) sensor sampling rates for heart rate variability measurements and implement motion artifact correction
- Visualizing sensor data using Matplotlib and enabling real-time monitoring via a lab streaming layer (LSL) reader

Agentic AI Intern   *June 2025 - July 2025*
DotSolved Systems
- Built ChatDrive, a multimodal RAG ingestion pipeline and chatbot enabling querying across OneDrive/Google Drive directories for internal use at DotSolved
- Engineered chat history, deduplication, and custom document reader frameworks to extend LlamaIndex multimodal capabilities and reduce query response time by 30%
- Developed a full-stack interface with React + FastAPI to deliver a streamlined and intuitive user experience

PROJECTS

MySewa · React, Vite, Express, socket.io, Sanity.io, Postgres, AWS   *June 2023 – Present*
- Developed an all-in-one volunteer hours tracking and event management system for 400+ users across the Central New Jersey Sewa International Chapter
- Streamlined previously unsynchronized signup workflows, saving parent volunteers ~1 hour per event
- Deploying full-stack architecture with AWS EC2/Amplify and Supabase

Supermic · Verilog, FPGA, xschem, OpenROAD   *July 2024 - August 2024*
- Collaborated with five students to develop an open-source PDM microphone beamforming solution using SkyWater 130nm PDK, tested on Basys FPGA and synthesized through Tiny Tapeout
- Designed a circular buffer delay-line architecture in Verilog to correct spatial and temporal offsets across eight decimated SDR input signals

Mayflower · React Native, Expo, Three.JS, GPT-3.5, Eleven Labs   *August 2023 – March 2024*
- Developed a mobile application to facilitate ATS-optimized resume creation and interactive interview prep
- Awarded 1st Place in the Congressional App Challenge for New Jersey's 1st District
- Invited speaker at Congressional Hackathon 7.0 on AI-driven accessibility of Congressional materials

SKILLS — Python, C, C++, Rust, TypeScript, SQL, Git, SVN, MATLAB, Simulink, Verilog, VHDL, Unity, Unreal, PlatformIO, Arduino, ESP32, Raspberry Pi, STM32, FPGA, OpenROAD, Magic VLSI, xschem, Verilator, Altium, KiCAD, EasyEDA, React, React Native, Expo, Vite, Angular, Svelte, Figma, Tauri, Node.js, FastAPI, Axum, Docker, Postgres, AWS, Excel, PowerPoint

INTERESTS — Drawing, singing, baking, Lo-Fi music