

Akshay Shivkumar

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EDUCATION

University of California, Berkeley | Expected May 2027

GPA: 3.70/4.00

B.S. Electrical Engineering and Computer Science

Relevant Coursework: Circuits, Devices, C, RISC-V, DSP, Data Structures, Algorithms, Discrete, Probability, Mechanics

PROFESSIONAL EXPERIENCE

iSono Health – YC-Backed MedTech Company

South San Francisco, CA

Embedded Software Engineer

Jun 2025 – Aug 2025

- Automated stepper-motor calibration process for a 3D breast-ultrasound scanner, cutting setup time 90% (3hr→30min)
- Built precision calibration tools using laser metrology, computer vision, and Python for automated alignment/validation
- Programmed embedded motor-control and driver firmware (C, C#) to achieve smooth, stable rotational imaging
- Enhanced imaging pipeline, boosting resolution 2.5x, reducing scan time 55%, and minimizing vibration-induced artifacts

Scaled Entelechy – SBIR-Funded AI Startup

San Jose, CA

Software Engineer

Jun 2024 – Jul 2024

- Developed an anomaly detection machine learning algorithm for an automatic speech recognition model (Python, NLP)
- Applied masked language modeling and BERT transformer methods for precise next-word prediction

Data Engineer

Jun 2022 – Sep 2022

- Led 4 interns through 3 project phases: linked data graph design, ETL for assessment data, and data annotation
- Automated data engineering workflow, improving team efficiency by 150% (Protégé, Python, Postman)

RESEARCH & ENGINEERING

Berkeley Sensor and Actuator Center

Berkeley, CA

Undergraduate Researcher, Liwei Lin Lab

Jun 2025 – Present

- Utilized piezoelectric micromachined ultrasonic transducers (pMUTs) to create a novel tactile sensor capable of detecting normal, shear, and deformation forces (abstract accepted for IEEE MEMS '26 Oral Presentation)
- Designed, fabricated, and brought up custom PCBs for two projects (KiCad, Eagle, Fusion360):
 - Compact electrochemical impedance spectroscopy (EIS) board to enable Apple Watch sweat sensing
 - Power supply board to drive a wearable ultrasound neuromodulation (tFUS) device

Neurotech@Berkeley

Berkeley, CA

Electrical Engineer

Sep 2024 – Present

- Designed, fabricated, and brought up custom PCBs for two projects (KiCad):
 - 16-channel, 4-layer electromyography (EMG) board to control a 4-degree-of-freedom robotic arm
 - Compact Hall-effect tactile sensing boards with piezoelectric haptic actuators and wireless BLE communication

Silicon Valley Cybersecurity Institute

San Jose, CA

Research Intern

Jun 2021 – Aug 2021

- Evaluated ECG noise as an entropy source for hardware true random number generation (HRNG) applications
- Applied the NIST statistical test suite in Ubuntu to assess randomness and cryptographic suitability

AWARDS & LEADERSHIP

- Awardee of Livermore Eagle Scout Scholarship
- First Place Winner - Mountain View Hacks 2023, “Most Innovative” Winner - KTHacks 2023
- President's Volunteer Service Award Gold Level (175+ Service Hours Completed)
- Team Captain (2023-2024) & Medalist (25 Medals, 2020-2024) for Mountain View Science Olympiad

SKILLS & INTERESTS

Hardware: PCB Schematic/Layout/Bring-Up, Microcontrollers (ESP/STM32), Comm. Protocols (I2C, SPI, CAN), Electronic Instrumentation (Oscilloscope/Network Analyzer/Waveform Generator)

Software: C, RISC-V, LTSpice, Logisim, Python, Java, C++, Fusion360, MATLAB

Projects: RF Walkie Talkie, pMUT Tactile Sensor, Magnetic Tactile Sensor, Quantum HRNG, Multichannel EMG, & More

Interests: Tennis, Fingerstyle Guitar, Backpacking, Board Games, Philosophy, Renewable Energy, Movies, R&B Music