Jake Lee

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Objective

To bring farming robots to small farmers everywhere.

Professional Experience

September 2024 - present	University of California	**Graduate Student Researcher**: Continuation of work for refactoring code and lab manuals for the ECE013 course from PIC32 to STM32-based architectures. Largely involves writing hardware drivers in C and rebuilding libraries/development frameworks with parity to old PIC32-based code.
May 2024 - September 2024	University of California	**Teaching Assistant**: Refactoring code and lab manuals related to the ECE013 course at UC Santa Cruz related to migrating away from PIC32 to STM32 development kits under the direction of Dr. Steve McGuire and Dr. Colleen Josephson.
May 2024 - September 2024	University of California	**Junior Specialist**: Carrying out data collection efforts for the Rolandi Research Group at UC Santa Cruz. This study involved comparing leaf wetness data between biomimetic sensors and real leaves.
May 2023 - July 2024	sachi	**Full-stack Engineer**: Startup building a community platform providing families with supplemental in-home care and educators with supplemental income. Front-end built with React (Next.js, TypeScript), and back-end built using MongoDB (TypeScript). Front-end and back-end brought together by Apollo/GQL and hosted on AWS. Launch date set for December 12th, 2023.
Oct 2022 - May 2023	Google Robotics Ops [via Flakasoft, Inc.]	**Mechatronics Engineer**: Designed, assembled, and tested robotics systems in collaboration with Google's Robotics research group. This involved working with embedded systems, communicating via CAN/EtherCAT/I2C/SPI, designing automated test fixtures, building custom inventory systems, designing robot control systems, and assembly/maintenance. Additionally performed risk assessment analyses. Largely self-managed as an IC, and coordinated with researchers, engineers, and operations personnel to help our team meet ambitious research deadlines.
Dec 2020 - Oct 2022	Google Robotics Ops [via Flakasoft, Inc.]	**Robot Wrangler**: Operated robots for Google's Robotics research group, largely with the Everyday Robot Project. Made operations more efficient by creating software tools (bash, Python), coordinated with engineers and scientists, and managed operations for research projects.
Jan 2018 - Jan 2020	Google Health [via Artech Information Systems]	**Data Collection Engineer**: Managed data collection activities for Google Nest and then Google Health, which involved analyzing/cleaning data, developing data collection frameworks and data ingestion pipelines, designing/building robotic test fixtures, and managing other contractors.
Jun 2017 - Sept 2017	Hartnell College	**Engineering Mentor**: Mentored an undergraduate engineer for a wearable device project. Involved power system, RF hardware, and digital design, plus project management.
Oct 2016 - Dec 2016	University of California, Santa Cruz	**EDA Tools Tutor**: Tutored course on PCB design using the Cadence EDA tool suite.

Relevant Skills

- **Computer Systems and Software Design:** Programming proficiency with Python, bash, React, Next.js, JavaScript/TypeScript, C/C++, Verilog, HTML/CSS/SASS, LaTeX Git; Linux/GNOME. Experienced with ROS. Experienced with unit testing (unittest, pytest) and build frameworks (like blaze). Experienced with integration of code into large codebases.
- **Engineering design:** Designing robotics systems; electrical power systems, analog, RF hardware, high-speed/digital, and mixed-signal design experience as well. Experienced with EDA (Altium, Cadence, Kicad, Eagle) and 3-D design (SOLIDWORKS, OnShape, FreeCAD) tools.
- **Technical:** Soldering for assembly/rework (through-hole, surface-mount). Mechanical assembly/maintenance and machining experience. Electronics testing/debugging experience. 3D-printing. Experienced with test equipment (multimeters, oscilloscopes/logic analyzers, waveform generators, network analyzers/can read Smith charts, spectrum analyzers, PSUs).
- **Spoken languages:** English, Spanish.

Education

M.S. Robotics, Control, and Cyber-Physical Systems, Baskin School of Engineering, University of California, Santa Cruz [2024 - present]
B.S. Electrical Engineering [minor Computer Engineering], Baskin School of Engineering, University of California, Santa Cruz [2017]

Certifications

LEED Green Associate [2021]
Engineer in Training (EIT), Board for Professional Engineers, Land Surveyors, and Geologists [2018]

Additional Interests

- robotics hobbyist
- woodworking hobbyist
- musician: bass guitar, piano, Ableton
- gardening hobbyist
- baker (sourdough)

References available upon request.