(661) 607-6935
Santa Clarita, California
jsickafoose@outlook.com

Jacob Sickafoose

R&D Electrical Engineer

Links:
linkedin.com/in/jacobsickafoose
jsickafoose.github.io

Skills

Technical Skills	Reading/writing and comprehending electrical schematics, Technical report writing in LaTeX and Office, Computer skills, Soldering, 3D Printing, CNC Routing, 3D Modeling, Simulation, Hobbyist Home/Automotive Repair
Programming Languages	C, Python, Verilog, Java, MIPS Assembly
Tools	LabVIEW, LaTeX, PSpice, Altium, KiCad, MATLAB, Git, MarkDown, SOLIDWORKS, Adobe Suite

Work Experience

Research & Development Electrical Engineer **February 2023 — Present**
Avation Medical — Biotech Start-up Company *Valencia, CA*

- Wrote invention disclosures leading to patent applications.
- Modified unit tests as firmware requirements evolved.
- Participated in an ISO audit as the company's sole electrical engineer and local office's quality representative.
- Worked closely with the Principal Firmware Engineer to identify and fix issues as well as make improvements.
- Interviewed, led and mentored a team of 2-3 engineering interns to complete projects, leveraging and developing each of their skills.
- Generated countless Python scripts to assist in data filtering and analysis.
- End-to-end developed test systems through each stage: Generated requirements, designed electrical schematics to interface systems with data acquisition devices, used LabVIEW and Python to take readings.
- Wrote and executed V&V system test cases.
- Extensive GitHub project management and issue tracking both as a firmware tester as well as a developer.
- Developed signal processing techniques in Python/MATLAB then implemented them in firmware.
- Improved the existing Electromyography based closed-loop control system by altering the signal processing algorithm to boost detection accuracy.
- Modified existing device firmware and hardware to research system improvements and finalize next generation goals.
- Authored and edited technical reports, ensuring accuracy and clarity of the procedures followed.
- Assisted in clinical trial data filtering and analysis with SQL and Python.
- Performed extensive long-term device reliability and durability testing.
- Various other tasks were performed as needed in a fast-paced and heavily collaborative start-up environment.
- First intern in the company's 30+ intern history to be promoted to a full time position.
- First full time employee with <7 years of engineering experience.
- First full time employee hired in 2 years and during a hiring freeze due to a lack of funding.

Frame Modeling and Manufacturing **September 2019 — June 2021**
UCSC Slugbotics — University Robotics Team *Santa Cruz, CA*

- Designed the Remotely Operated Vehicle (ROV) frame with SOLIDWORKS, working with other sub-teams to accommodate the design requirements of each.
- Machined the frame using CNC routing, 3D printing, etc.
- Assembled and disassembled the final ROV and various subsystems such as the claw assembly.
- On-boarded new members, educating them on standard operating procedures, 3D modeling, how to use tools, etc.

Education

University of California, Santa Cruz **Graduated August of 2022**
Bachelor of Science, Major in Robotics Engineering, Minor in Electrical Engineering
3.02/4.0 GPA

Notable Courses:

- Senior Design Project: Tactile Stimulation
  - Created a haptic feedback system using an electrical nerve interface. This required circuit design and modeling, iterative prototyping, additive manufacturing, and firmware programming to implement constant current biphasic waveforms for transcutaneous nerve stimulation.
- Logic Design
  - Created a video game on an FPGA using VGA display protocols, implemented using Verilog.

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- UAV Theory and Practice
  - Implemented a Python 3D UAV simulator utilizing state-space representation and control in addition to PID loops. The simulated UAV was capable of autonomous navigation to commanded positions with full wind modeling as well as target following and circling.
- Sensing and Sensor Technologies
  - Wrote microcontroller code in the C language to extract usable data from raw sensor inputs. This required software & hardware filters, custom calibration, and setting the embedded system control registers to create custom firmware drivers for each sensor. The microcontroller's control registers had to be manipulated to implement interrupt driven communication protocols SPI, UART, and I2C. No hardware abstraction layer or any code was provided.

West Ranch High School, Valencia **Class of 2017**
Honor Society
4.02/5.0 GPA