Aaron Silman

aaron.silman@gmail.com · (415)548-3226

Work Experience

Sandia National Laboratories — Livermore, CA
Electronics Engineer, R&D — Dec 2016 | Present

- Lead Engineer in four person R&D project with $150K budget to develop novel low power, low false alarm, embedded security systems.
- Designed and implemented high reliability security system in SystemVerilog for detecting threats and communicating information to various peripherals.
- Performed formal verification analysis with SystemVerilog Assertions language and OneSpin Formal Verification tool to ensure maximum reliability of HDL.
- Maintain Department of Energy Q-Level security clearance.

Lab 228, LLC — San Francisco, CA
Software Engineering Intern — Jul 2013 | Jan 2015

- Developed filter chain and decision system in Python for extracting clean signal from photoplethysmography data for use in with Bluetooth Low Energy wearable activity tracker and heart rate monitor.

UC Davis Physics, Dr. Mulhearn Lab — Davis, CA
Undergraduate Research Assistant — Jun 2012 | Jun 2013

- Assisted development of FPGA-based high-speed custom trigger electronics responsible for filtering particle jet data for further scrutiny.
- Characterized various SRAM and FRAM ICs radiation hardness at Crocker Nuclear Laboratory.

Education

University of California, Davis — Davis, CA
MS Electrical and Computer Engineering — Sep 2015 | Dec 2016

- Full scholarship through Sandia National Laboratories Critical Skills Masters Fellowship Program
- Thesis: Intercalation as Functional Molecular Dopant for DNA-based Devices

University of California, Davis — Davis, CA
BS Applied Physics — Sep 2011 | Jun 2015

- Graduated Cum Laude
- Minor in Computer Science

Skills

Languages:	Python, C, SystemVerilog
Frameworks:	NumPy, SciPy, Pandas, Tensorflow, scikit-learn, ROS, Flask
Software Tools:	Git, Gazebo
	Intel Quartus, Microsemi LiberoSoC, Aldec Riviera-Pro, ModelSim, OneSpin
	Altium, KiCAD
Processors:	STM32, MSP430, Nordic nrf52
Lab Tools:	Software Defined Radio, Oscilloscope, Spectrum Analyzer
	Signal Generator, Logic Analyzer

Projects

Point Cloud Classification *ROS, Gazebo, Scikit-learn*
Udacity Robotics Engineer Nanodegree
Programmed robot in simulation to identify individual objects on table via semantic segmentation and scikit-learn classifier trained on point cloud and color data from simulated RGB-D camera.

Bartomaton *Raspberry Pi 3, Flask, React, KiCAD, SolidWorks*
https://gitlab.com/Silman/Bartomaton
Robotic cocktail bartender using React front end to take orders which talks to Flask back end to control servos and pumps. Custom PCB designed to interface to Raspberry Pi 3. Custom parts designed in SolidWorks and 3D Printed.