

SAM ZECKENDORF

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ELECTRICAL & COMPUTER ENGINEER

Experience

Space Exploration Technologies Corp. Hardware Design Engineer (Starlink & Dragon 2)

May 2018
Hawthorne, CA

Driving hardware design, validation, and test of prototype phase array antenna for Starlink Dish consumer hardware through production ramp.

Responsible for extensive cross-functional work to ensure comprehensive success of the Starlink Dish program by managing design trades with the mechanical, production, compliance, and software teams.

Worked extensively with third party regulating bodies (e.g. FCC & NASA) to show compliance through analysis and test of a variety of novel hardware ranging from the Dragon 2 spacecraft's power system to the Starlink Dish's compliance with radiated & conducted emissions.

Spearheaded comprehensive validation & test plan for Starlink Dish with tasks apportioned by subsystem and also across holistic integrated performance, identifying several design issues before they caused production stoppages at larger quantity builds.

Google Inc. Hardware Design Engineer (Nest & Daydream VR)

September 2014—January 2018
Mountain View, CA

Designed hardware for Daydream VR wearables team from schematic capture & layout to validation and test. Responsible for 8 separate PCBAs, FPCAs, and cable assemblies within flagship product from cross functional design to factory quality and bringup.

Drove hardware design from marketing requirements to engineering specification, e.g. developing production test tools for measuring "motion-to-photon" latency

Designed several FPCs and PCBs for Nest Secure, driving schematic capture, component selection, layout and bring-up in factory/lab. Identified design/manufacturing issues at factory in OQC/IQC, and pursued through resolution to optimize yields.

Created and maintained MATLAB/SPICE simulations for sensitive circuitry and power modeling to allow data-driven hardware design, e.g. RX for active IR intrusion detector

Wrote and maintained python libraries for interfacing with various internal test equipment over USB/GPIB, governed by web app

Apple Inc. Systems Integration Intern (iPhone)

January 2013—September 2013
Cupertino, CA

Validated internal PMU silicon, identified startup issue and root caused, provided final schematic and layout changes

Verified signal and power integrity in several subsystems, including the novel Touch-ID circuit. Identified issues resulting from FPC physical shape, and helped provided updated designs

Investigated audible noise resulting from piezoelectric properties of ceramic capacitors — designed and fabricated drive and measurement circuitry to stress components under different signal inputs, analyzed resultant audio data

Loopit Inc.
Software Engineer

2012, 2013
Cambridge, MA

Designed web service that aggregates product details across variety of websites and generates growing/adaptive lexicon for use in smart shopping tool

Designed smart comparison tool to bin products into similar categories; company was acquired on merit of software efficacy

Center for Engineering Education Outreach September 2011 — December 2013
STOMP Lego Engineering Fellow Somerville, MA

Part of nonprofit that travels to classrooms in Cambridge and Boston Massachusetts to teach engineering fundamentals to middle and elementary school students

Designed lessons around important and esoteric ideas such as collaborative design, limited materials, abstract problem solving

See More: <http://www.legoengineering.com/about/>

Solar Energy Research
Research Assistant

September 2010 — December 2012
Medford, MA

Investigated thin film Copper(I) and Copper(II) Oxide growth as semiconductor over ITO substrate

Created proof of concept electrodeposition circuit to show possibility of thin film solar cells powered by solar energy

Education

Tufts University
Bachelor of Science in Electrical Engineering

September 2010 - May 2014
Medford, MA

Selected EE Coursework: Feedback-Control Systems, Communication Systems, Microprocessor Architecture & Assembly Code, Digital Logic Circuits, Analog Design I & II, Physics of Solar Cells, Data Structures, Usability Engineering

Selected Other Coursework: Linear Algebra, Discrete Mathematics, Multivariable Calculus, Differential Equations, Music Applications on the iPad, Game Design

Projects

imPact

Created iPhone music application "imPact: Remix", funded by Steinway Music

Squid

Xbox indie game, awarded Indie Gem award on Joystiq.com (affiliate of engadget)

Smart Hydroponics

Intelligent, learning, home-hydroponics system for city dwellers to grow fresh produce. White paper available

*Languages
& Skills*

Cadence (Concept + Allegro)
Altium

C/C++/C#/Objective-C
Matlab

Python
VHDL