

Sam Mansfield

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Education

Bachelors of Science (2013)

University of California, Berkeley
Electrical Engineering and Computer Science

Experience

Researcher at CNMAT at UC Berkeley(2012-2013)

I worked under Adrian Freed designing hardware systems, such as a [mono-chord electric violin](#), which was published for the NIME 2013 conference. I have also worked on a multitouch conductive surface, Open Sound Control objects for [Max](#) to interface with the iPhone, and PCB layouts for the [x-Osc](#) microcontroller using Eagle.

Research under Professor Lee at UC Berkeley (2013)

I worked with Professor Edward Lee to create an ultrasonic (21kHz) transmitter that would be used for semantic localization. The transmitter was built using a microcontroller, speaker amplifier, and ceramic piezo speaker. The receiver was created on top of Kaifei Chen's [BearLoc](#) server.

LED Chandelier (2013)

My partner and I created an infinitely scalable LED Chandelier. A single strand consists of a microcontroller, ultrasonic range finder, custom PCB, voltage regulators, resistors, capacitors, and eight LEDs. Strands can be combined to create an 8x8x8 LED display (or smaller, or larger) that maps distance below to shapes in the chandelier.

Head of IT at Teance (2013-present)

I maintain and setup the necessary electronic devices and systems at Teance. I have done such things as transferred the POS from Quickbooks to Square. I Manage wireless devices, such as routers, cordless phones, and wireless music players, to minimize interference. I also do general troubleshooting such as diagnosing and fixing non working devices.

Web Application for Rancho Rinconanda (2013)

I created a web application with a group of five students for the non-profit Rancho Rinconanda using Ruby on Rails, HTML, and Javascript.

Graphics Processor (2012)

My partner and I created a three stage MIPS processor that could output graphics to a standard monitor. We programmed the processor using an FPGA using Verilog.

Research at the Animal Flight Laboratory at UC Berkeley (2012-2013)

I worked under Dr. Dennis Evangelista creating a microphone phased array to track humming birds. The system consisted of many microphones connected to a gain stage, fed into a data acquisition stage, and then into a computer to process the data. This project was presented as a poster at the SICB 2013 conference.

Publications

1. ["Old" is the new "New": a Fingerboard Case Study in Recrudescence as a NIME Development Strategy](#), Freed, Adrian; Uitti, Frances-Marie; Mansfield, Sam; MacCallum, John, NIME, Daejeon Korea, (2013)
2. [Design of a phased array acoustic tracking system for flight biomechanics tracking studies](#), Mansfield, Sam; Evangelista, Dennis, SICB, San Francisco (2013)