DESIGN WITH SOFTWARE AND
ELECTRONICS

Andy Sigler

About

I'm a designer who uses software and electronics. I use emerging technologies to design novel devices and interactions. I hope to use these tools to bring some magic and playfulness to everyday objects. These days, I'm most interested in finding new forms of interaction at the intersection of machine-learning, hardware, and connected devices.

In addition to my selected works, you can also check out blog posts I've made while making and learning new things.

Work

SOFTWARE / ELECTRONICS / SYSTEMS ENGINEER **2014-'15 & 2016-'19**
@ OPENTRONS LABWORKS

- First employee at hardware startup, writing entire software stack for the company's Kickstarter release
- Designed and developed the Opentrons Python API on a small team
- Lead design and systems engineering of the OT2 liquid-handling machine and pipettes
- Sole electronics designer for the OT2, pipettes, temperature module, and magnetic module
- Lead early product ideation, R&D, testing, and design for all hardware products, focusing on electronics and systems design
- Helped grow factory and production process in Opentrons' Shenzhen factory, growing from 2 employees in 2016 to >50 in 2019

ADJUNCT PROFESSOR **2015-Present**
@ ITP-NYU

- Teaching a course of my own design, entitled Homemade Hardware
- Graduate students from all types of backgrounds learn to design and fabricate DIY circuit boards

ELECTRONICS DESIGN ENGINEER **2015-'16**
@ TOMORROW LAB

- Designed and tested production-ready prototypes and beta runs of wireless devices
- Designed electronics and firmware for devices utilizing wireless protocols, including Bluetooth LE, WiFi, LoRa, and ANT

RESEARCH RESIDENT **2014-'15**
@ ITP-NYU

- Research focusing on internet-of-things design tools, as well as circuit board fabrication techniques
- Mentored graduate students with their projects, as well as held office hours to teach relevant engineering skills
- Created the ITP "Hard-Lab", which is a section of the facility dedicated to circuit board fabrication, using pick-and-place machine, micro-milling machines, reflow ovens, parts management, and diagnostic equipment

Tools and Techniques

- Interaction Design
- Wired/Wireless Systems Design
- Python
- Javascript/NodeJS, HTML5, ES6
- Embedded C/C++, Arduino
- Electronics DFM, Eagle CAD, and DIY PCBs
- Solder, multimeter, tweezers
- Duct tape, Gaffer tape
- MaxMSP/Jitter

Education

MASTER'S DEGREE **2012-'14**
@ ITP-NYU

- Self-lead master's degree, focused on interaction design through emerging hardware and internet technologies
- Presented a master's thesis, Patchbay, a wireless framework for designing wirelessly interoperable toys and musical instruments

BACHELOR'S DEGREE **2006-'10**
@ HAMILTON COLLEGE

- Political science major, and music minor
- Varsity lacrosse player, three years starting at defensive midfield and close defense
- Member of Alpha Delta Phi fraternity