Nathan Villicaña-Shaw

Lecturer, Creative Technologist, Installation Artist

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I am a lecturer, tutor, creative technologist, and installation artist that believes in the power of project based education and empowerment through exploration. I enjoy collaborating with driven, dedicated peers, and students, to create innovative solutions to problems that matter.

PROFESSIONAL EXPERIENCE

LECTURER — **California College of the Arts** — **2017-present**

- I am a lecturer for the Interaction Design program at the San Francisco campus of California College of the Arts.
- I teach an upper division class focused on designing tangible user interfaces, creating smart spaces, and how to work with sensors and actuators with the Arduino prototyping platform.

GRADUATE ASSISTANT — **California Institute of the Arts** — **2014-2017**

- Maintains ensemble of 10 mechatronic instruments, a 3D printer, a CNC router, and a CNC mill for the music technology department.
- Lectures on mechatronic electrical engineering, interface design, digital fabrication, and PCB design.
- Tutor for upper-division classes on physical computing, interface design, electrical engineering, and mechatronic music composition.
- Leads team of upper division BFA and MFA students to maintain the Electronics Lab, Machine Lab, Masters Room and Supplies Vault at CalArts.

JUNIOR RESEARCH ENGINEER — **Kadenze Inc.** — **2015-2017**

- Lead developer for the auto-grader on the *Programming Max: Structuring Interactive Software for Digital Artists* class. Worked with Stanford university professors to develop coursework for the class and built software tools to algorithmically grade students on their code.
- Assistant developer and current maintainer for auto-grader on *Sound Synthesis Using Reaktor* which is in its fourth successful run.
- Assists with building and labeling data-sets for machine learning algorithms to assist with various company ventures.
- Co-developed internal data visualization tools for company employees to track user metrics and demographics.

EDUCATION

MASTER OF FINE ART — **California Institute of the Arts** — **Music Technology**

- Studied under mentorship of Dr. Ajay Kapur and Dr. Owen Vallis.
- Research topics include mechatronic musical instrument design, mechatronic music performance and human-circuit interaction.
- President and founder of the Hardware Hacking Club and the Circuit Bending Club.

BACHELOR OF FINE ART — **California Institute of the Arts** — **Music Technology**

- Studies encompassed object-oriented programming, electrical engineering, interface design, concert production, sound synthesis, music performance, machine learning as well as music composition, theory, skills, and history.
- Minor in Digital Arts.

SKILLS

Lecturing, C, ChucK, **Python**, Processing, Pure Data, Max MSP, C++, JavaScript, **EAGLE CAD**, LT SPICE , Ableton Live, Reaktor, Unity, Tutoring, Interaction Design, User Interfaces, Video Editing, Rapid Prototyping, **Raspberry Pi**, Network Design, Physical Computing, Digital Fabrication, Data Visualization, Sound Synthesis, **Mechatronics**, Audio Mixing, Concert Production, **Interface Design**, Music Composition, **Arduino**, Machine Learning