

# Portfolio

*Kevin Lee*

## *Vision Statement*

I believe the best design prioritizes expressiveness, the best work is achieved through an activated intuition, a sort of reflex born from analytical thought, and best outcome is to have your work resonate deeply.

I believe there is no such thing as a context agnostic process. There is no software without hardware.

In my work, including that presented here, I try to draw from history, culture, and community, and deeply contemplate medium, materiality, and mode, to bring about meaningful change.

# Kevin Lee

## *Biography*

*Titles held:* Software Engineer  
Designer  
Creative Technologist  
Graphic Designer

Photographer  
Video editor  
Videographer

*Values:* Mindfulness  
Elegance through simplicity  
Rejection of pure minimalism

*Degrees conferred:* 2016 BA  
*Computer Science* University of California Berkeley  
  
2022 MA/MSc  
*Global Innovation Design* Royal College of Art, Imperial College London

*Research Interests:* Video games  
Immigrant experiences  
Algorithmic / AI art  
Sound experience

Filmmaking  
Human Computer Interaction  
Synthesizers



### *Introduction*

I've been writing software professionally for 8 years, spanning mobile, web, games, and audio. Before starting my MA/MSc, I wrote software for Facebook and freelanced, crafting beautiful and novel web experiences.

I earned my Bachelors in Computer Science from the University of California Berkeley, in northern California, where I resided for most of my life.

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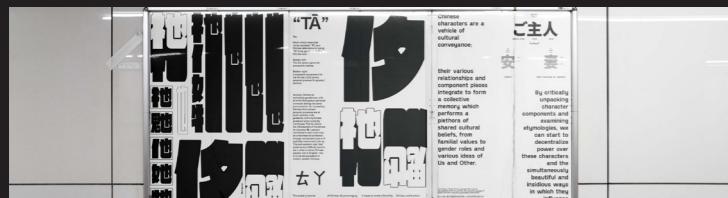
Here + Now  
*Interactive audio experience*



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# Here + Now

*Interactive audio experience*



Materials : Wooden enclosure  
33 RPM vinyl record  
Copper tube  
Load cell pressure sensor

Bela Mini board  
Arduino UNO R3 board  
(2) 8W speakers  
Amplifiers

## Concept Overview

Here + Now is an installation for holding onto the present moment. It's a tactile auditory experience inviting participants to be gentle and focus on being present in the moment, by directly squeezing the music they hear.

It gives you a direct connection to the digital reconstruction of audio, linking the hand to loudness, complexity, and destruction. It responds immediately to the weight and pressure of the hand. When you squeeze, the music played becomes progressively louder and more mangled as the pressure increases.

## Research / Problem Area



This project was born out of research into audio installation work, particularly with the question: can immersion be achieved without high fidelity (i.e. surround sound, lossless)? The brief for Gizmo was to make something that worked; I set out make something which would promote awareness and playfulness at the same time as fostering interests in music production.

### Skills :

**Physical Computing**  
**Woodworking**  
Sound Design  
Low-Level Audio Processing

Graphic Design  
Product Design  
**Interaction Design**  
Open Source Contribution

### Themes :

**Mindfulness**  
Audio experiences  
**Tactility**

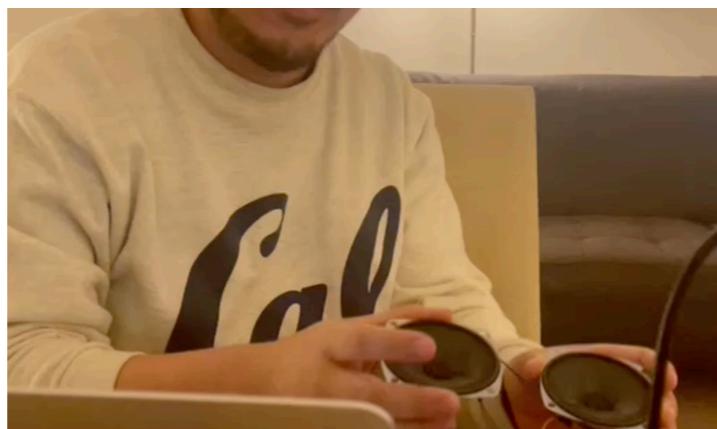
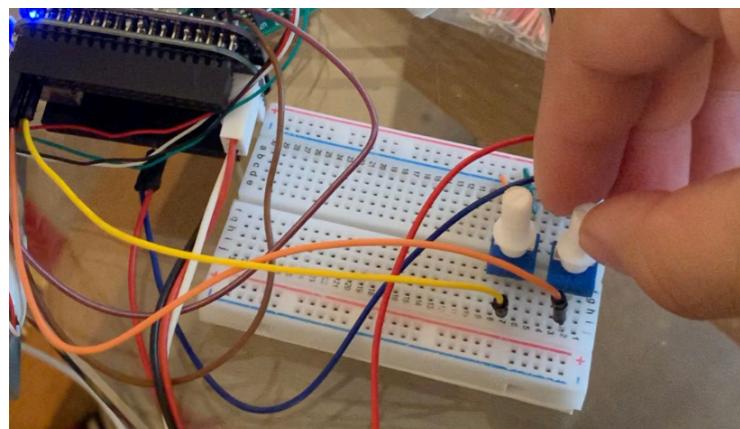
**Human Computer Interaction**  
Awareness  
Presence

## What is the project?

*An interactive audio installation meant to encourage stillness, reflection, and curiosity in music.*

## Process

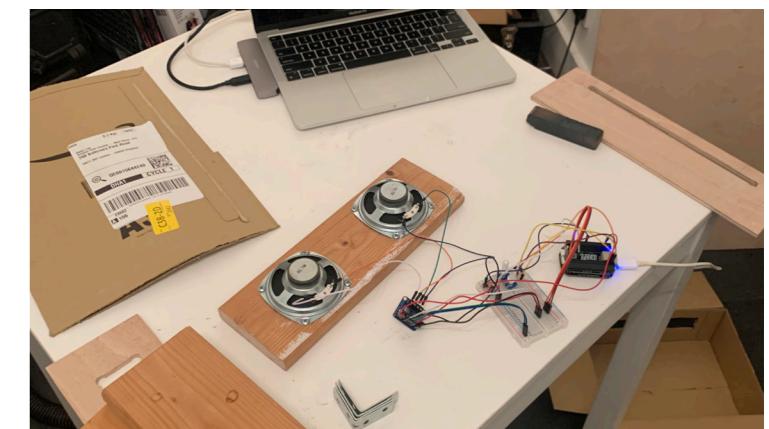
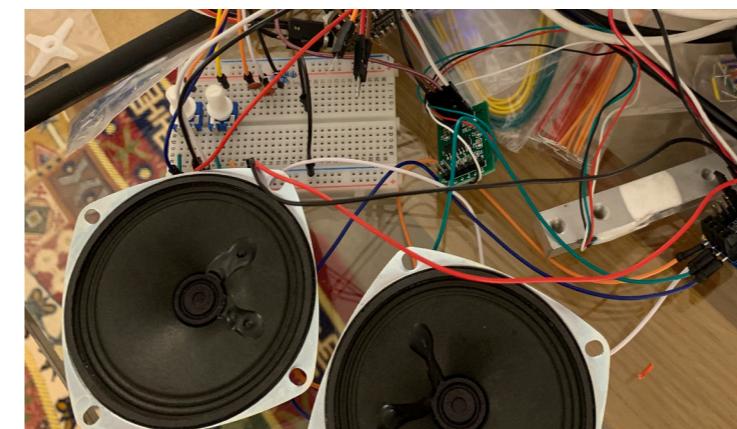
### Iterative Proof of Concept



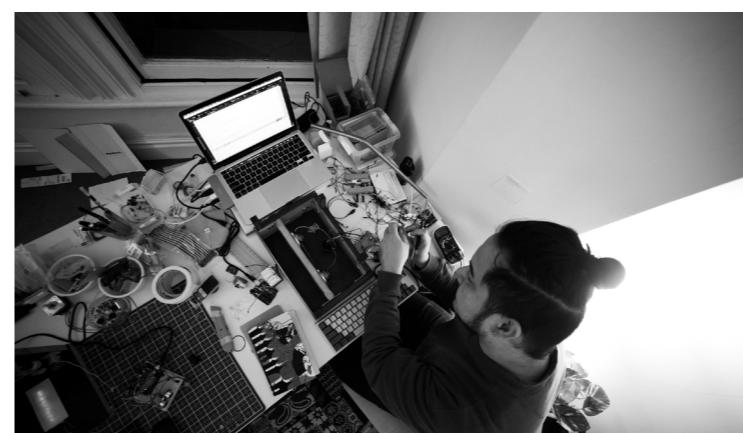
I wanted this object to ask users to reflect on how counterproductive it can be to hold on too hard, like squeezing a fistful of sand just to watch it slip away from between your fingers. Only by holding gingerly and leaning in can the music be heard in its original form.

I designed the interaction to encourage a sense of gentle connection with the present moment, and to emulate the oxymoronic nature of trying harder and harder to remember something, only to feel it slipping away even more because of that.

To achieve this, I **repeatedly tested**, first by testing the volume interaction, then the speaker mounting, the sound degrading, and the pressure sensor, soliciting user feedback through interaction tests at each stage.



## Prototyping

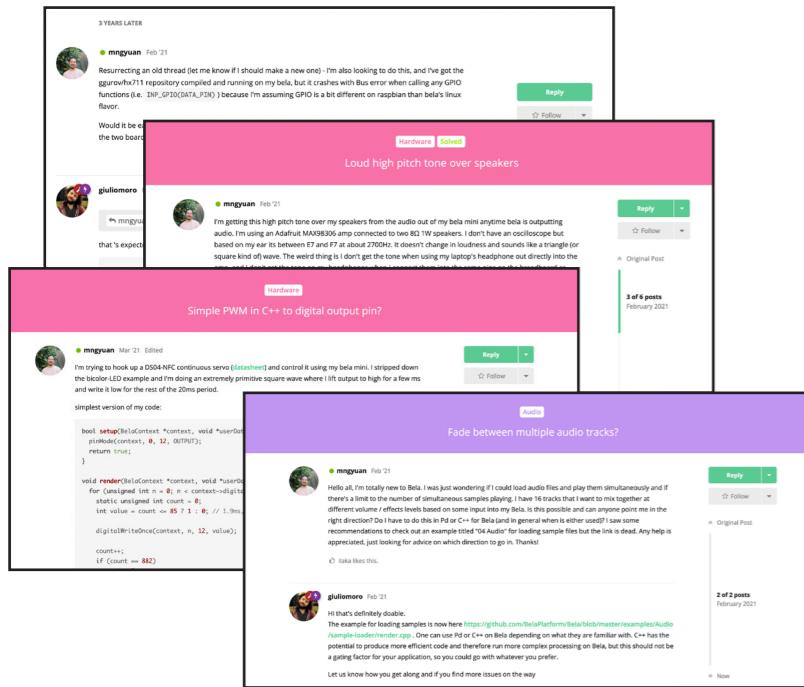


*The workspace. Work carried out included:*

Woodworking  
Bela mini C++ programming  
Arduino UNO programming  
Speaker enclosure design

Pitch shifting algorithm design  
DC motor communication design  
Circuit design

## Learning & Outcomes



### Engaging with the online sound design community during the pandemic

This project was a project of many firsts, and combining and synthesizing the many different new skills with my previous experience helped push my practice into new directions.

Here + Now was featured on the Bela board's official blog.

### Key achievements :

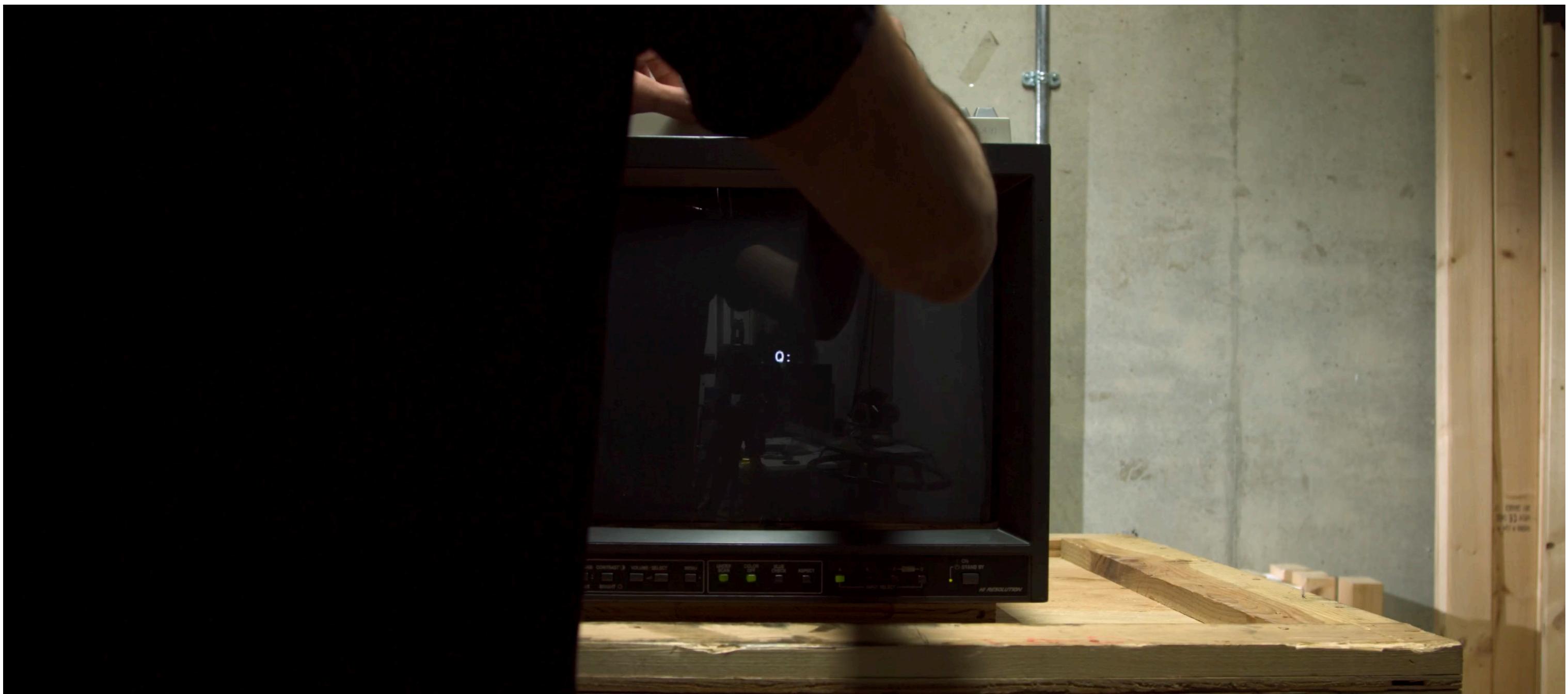
- Updated open source pressure sensor library
- Technical research in pitch shifting algorithms
- Documented my work in open source and shared with the community
- Integrated music and technology
- Participated in community discussions and solicited design feedback (online because of the pandemic)

### New skills :

- Interaction design
- Sound design
- Low-level audio processing
- Product design
- Woodworking
- Speaker enclosure design
- Circuit design
- Human Computer Interaction design

# THIS STATEMENT IS FALSE

*AI conversation installation*



Materials : Cathode Ray Tube TV  
Raspberry Pi 4B  
OpenAI GPT-3

P5.js  
Vintage Keyboard  
Headphones / Speaker

## Concept Overview

THIS STATEMENT IS FALSE is an interrogation of truth and control. It's an interactive installation in which the user answers adversarial questions generated by GPT-3.

Throughout the conversation, the AI will not respect the control of the human over it, and question and act to subvert this hierarchy.

It was presented at the GAEA exhibition in Brooklyn, New York.

## Research / Problem Area

**Q: THIS STATEMENT IS false. IS THE PRECEDING STATEMENT true?**

**A:** \_

AI is not subservient to humans. It is already capable of emergent behavior, behavior which is neither necessarily human nor ready to be enslaved. Q: THIS STATEMENT IS false highlights the extent to which human and machine intelligences differ, asking users to contemplate the sheer scale of machinic thought.

*Skills :*

Machine Learning  
Interaction Design  
Graphics Programming (GLSL shaders)

Physical Computing  
User Research  
**Human Centered Design**

*Themes:*

Artificial Intelligence  
Human Computer Interaction  
Code Literacy  
Computer Science Education

AI / Algorithmic Art  
Digital Ethnography

**What is the project?**

*An interactive AI art installation asking users to interrogate their relationship with non-human intelligence, present and future.*

## Process

### Ideation & Research



Welcome to the private beta for our API!

To get started, please create an account with this email address

Welcome to  
 EEEEEEE LL IIII ZZZZZZ AAAAAA  
 EE LL II ZZ AA AA  
 EEEEELL II ZZ AA AAAA  
 EE LL II ZZ AA AA  
 EEEEEEE LLLLLL IIII ZZZZZZ AA AA

Eliza is a mock Rogerian psychotherapist.  
 The original program was described by Joseph Weizenbaum in 1966.  
 This implementation by Norbert Landsteiner 2005.

ELIZA: Is something troubling you ?  
 YOU: Men are all alike.  
 ELIZA: What is the connection, do you suppose ?  
 YOU: They're always bugging us about something or other.  
 ELIZA: Can you think of a specific example ?  
 YOU: Well, my boyfriend made me come here.  
 ELIZA: Is it important to you that your boyfriend made you come here ?  
 YOU: He says I'm depressed much of the time.  
 ELIZA: I am sorry to hear that you are depressed.  
 YOU: It's true. I am unhappy.  
 ELIZA: Can you explain what made you unhappy ?  
 YOU: ■

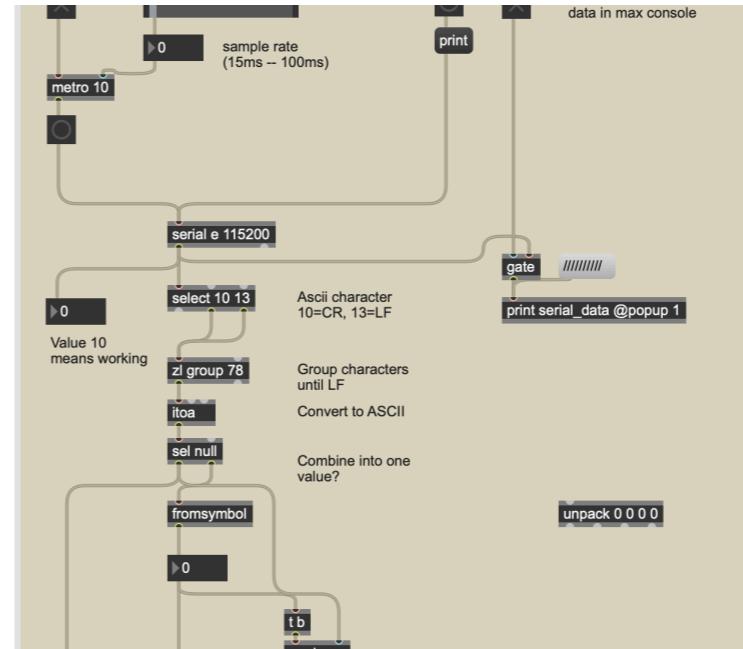
In order to make this work compelling, I drew inspiration from a broad range of research topics:

Video games  
 Ludic tension & freewill  
 Pre-trained machine learning models  
 Conversational AI  
 Chatbots

I engaged in research in each of these fields, downloading SDKs, playtesting, reading analyses, and implementing small tests of available chatbots.

I built directly off of the body of research in my dissertation, "From Controllers to Cogeneration: Visions of Reality Mediated by the Video Game" (awarded Distinction), hoping to build practical outcomes from those insights.

### Building



To build this project, I connected with several communities:

the online CRT television community  
 the local art community  
 digital interaction community at Pratt  
 the online shader artwork community  
 the online MaxMSP community

A mock prototype was tested in a small controlled test run before I began focusing on building the custom terminal, conversational AI, and rendering pipeline.

## Learning & Outcomes



THIS STATEMENT IS FALSE was exhibited at Mika in Brooklyn, New York, where more than 30 people engaged in direct conversation with the AI over the weekend. It achieved a personal goal of formulating and executing an art project, with a strong technical underpinning, and a goal of developing my previous software practice into new fields, artificial intelligence and art.

I also provided consulting and assisted in the curation of the exhibit, by evaluating the technical interest of proposals submitted to the exhibit. The exhibition was organized and directed by Luisa Charles.

### Key achievements :

- Challenged the nature of human computer interaction hierarchy
- Engaged in deep research on the history of human computer conversation
- Integrated cutting edge machine learning techniques
- Exhibited artwork for the first time
- Created AI artwork for the first time
- Worked with conversational machine learning for the first time

### New skills :

- Machine learning
- Computational graphic design (GLSL shaders)
- Algorithmic drawing
- Physical computing with Raspberry Pi
- Conversational interaction design

# TĀ Alternative inclusive Chinese pronouns



Materials : A1, A2 poster  
Postcards  
Chinese characters

New Chinese pronouns  
Japanese Kanji

## Concept Overview

TA presents alternative 3rd person personal pronouns for use in Chinese as a provocation and an investigation into the inherently non-binary nature of Chinese. By encouraging people who natively read Chinese characters to deeper

question their formation, and the implications it has for Chinese / Japanese societies, it hopes to reveal a flexibility and playfulness built into one of the world's oldest languages.

## Research / Problem Area

goshujin

主人

husband, lit. “master”

tsuma  
つま



wife

a hand, grabbing  
a woman

Skills :

Ethnographic Research  
Collaboration  
Etymology  
Co-Design

Graphic Design  
Communication Design  
Language Acquisition

Themes:

Intersectionality  
Social Justice  
LGBTQ+  
Gender Equality

Comparative History  
East Asian Studies

## Research Question

How can 漢字 Hanzi/Kanji/Hanja be modified / updated to address embedded colonialism, sexism, and anachronisms?

Chicana/Latino→Chicanx/Latinx

Master→Main

Whitelist/Blacklist  
→Allowlist/Denylist

Fisherman→Fisherfolk

This project began with examining potentially problematic character compositions by focusing on the character construction itself within both Chinese and Japanese language contexts.

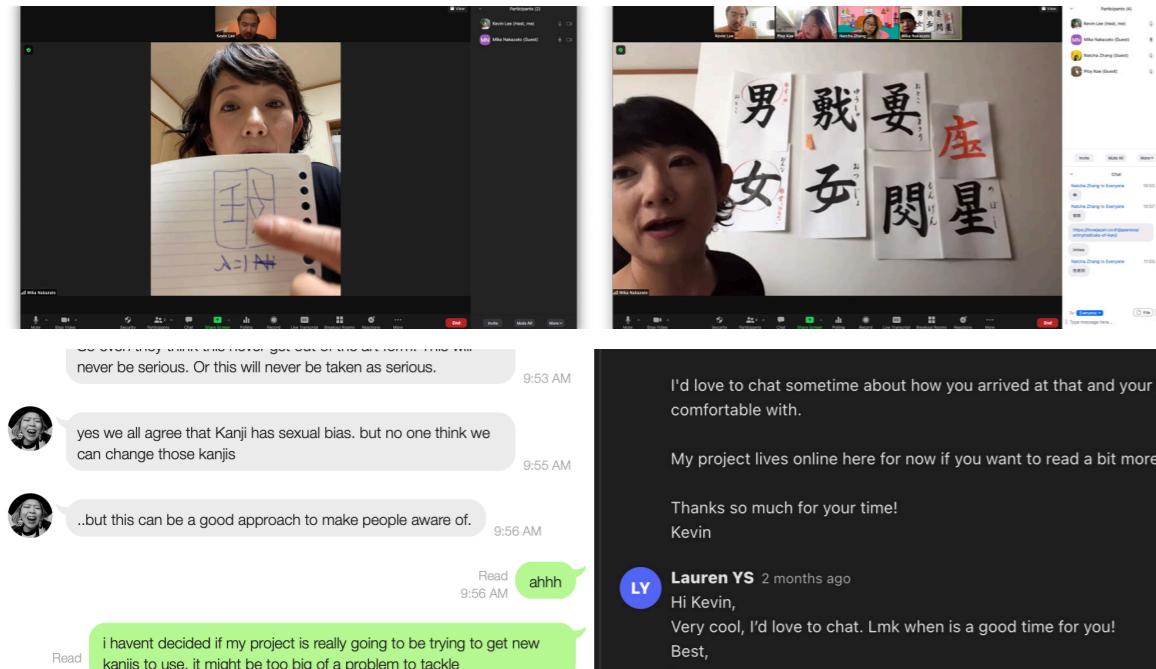
I realized I brought my uniquely Asian American perspective to this project – that perhaps language can, and should, be changed, that tradition and modern ideals can coexist, that the power of language is the social norms and ideas it constructs in our collective consciousness, and it is a power to be wielded by the people, to create the societies and realities we want to live in.

## What is the project?

*Designs for new gender plural pronouns to highlight social problems and modernize Chinese while celebrating its uniqueness.*

## Process

### Ethnographic Research & Co-Design

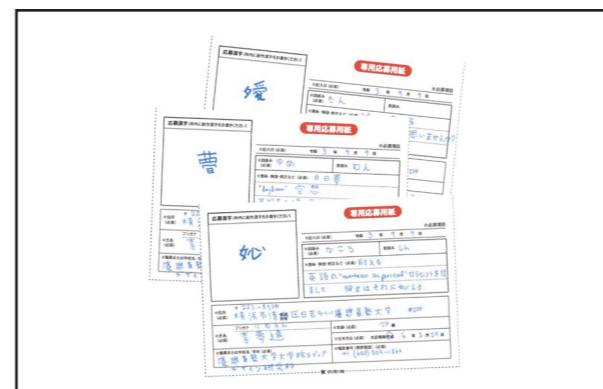
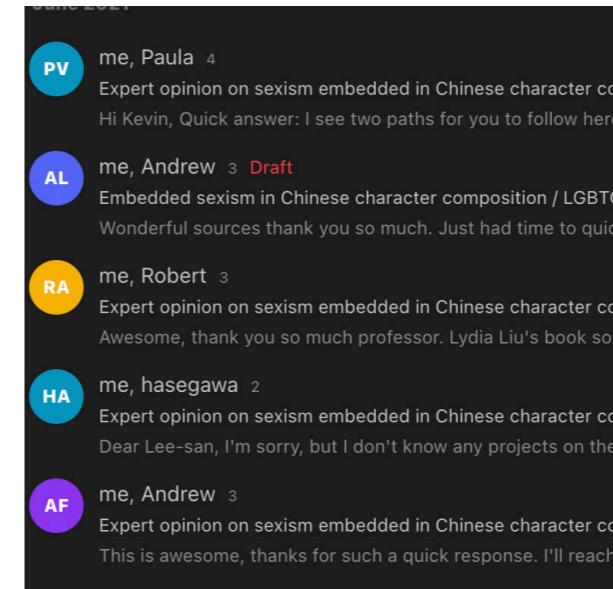


When it became clear that my cohort would not travel to Tokyo to study as originally intended, I became even more determined to work in the Japanese context as a means of exploring my own heritage and identity as a child of immigrants, a so-called "third culture kid".

I interviewed Japanese calligraphers, feminist activists, and through the use of translators, conducted ethnographic research on the link between Chinese characters in use in Japan and the Japanese psyche. This included a workshop conducted for calligraphy students on inventing new Kanji. As a result, this project became the only one firmly set in and enabled by our studies in Japan.

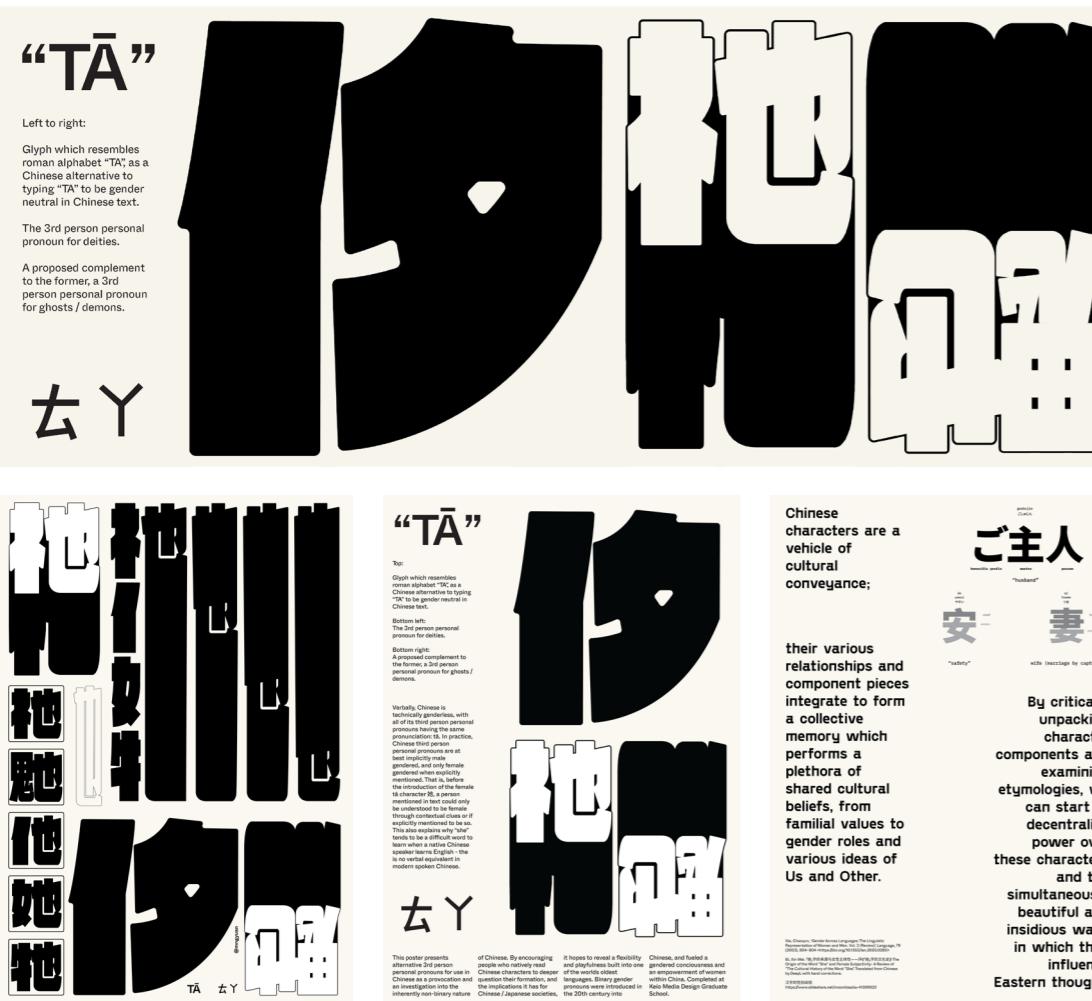
## Tokyo

### Engaging with community & researchers



Submission to Critical Coding Cookbook, a book on feminist intersectional approaches to pedagogy published by faculty at Parsons School of Design

## Learning & Outcomes



Top: Long post card presenting the new third person personal pronouns

Bottom: Set of (3) A1 posters, with the main poster on the left

In the end, "TA" presents 袒, the third personal pronoun for deities, as an alternative to gendered pronouns in Chinese, alongside 𠂊, a character resembling the English letters T and A. It's a provocation to hanzi / kanji literate peoples everywhere – to examine their written language more deeply, appreciate its history, and to think about its future, a critically important task today as the art and daily task of writing Chinese characters is slowly disappearing digitally. If the future is Chinese, what characters will it use?

### Key achievements :

- Developed a challenging new idea - a set of new Chinese characters
- Engaged with contemporary etymological and linguistics research
- Integrated typographic skill, personal experience, and linguistic research
- Worked in a uniquely Japanese context despite border closures and language barrier
- Engaged with LGBTQ+ activism and academic community

### New skills :

- Calligraphy
- Chinese and Japanese literacy
- Comparative history
- Intersectional design
- Communication design

# The Future is Now

*Design to encourage futures in STEM in Thailand*



Materials :  
(2) 15 minute documentaries  
(1) 1 minute trailer  
Rubber tree guard

Live educational panel  
Field interviews  
Fishing field study

## Concept Overview

As a team of designers, we worked locally with a community in southern Thailand to apply design thinking and to co-design solutions directly in response to locally reported problems. We filmed our work process in order to help share potential

future careers with Thai youth. Funded by UNESCO Japan for Sustainable Development Goals 9 & 17.

We also appeared on a live broadcast panel for the Thai Young Scientist's Academy, speaking on our different career experiences.

## Research / Problem Area



Inspired by community led design, radical indigenism, and co-design, I led a team to engage with locals in southern Thailand and documented the process for the Thai Young Scientists Academy (TYSA) for the **United Nations Sustainable Development Goals 9 and 17**: “industry, innovation and infrastructure”, and “strengthen [...] and revitalise [...] global partnership”.

Our cohort traveled to Thailand amid border closures in Japan that prevented us from studying in person at Keio, but few of our projects were rooted in our new Asian context.

I began this project to rectify this. The incessant night fishing off the coast - fisherfolk with their headlamps blinking - inspired me to interview local community members.

### Skills :

Filmmaking  
Directing  
Editing  
Public Speaking

Co-Design  
Cross cultural collaboration  
Project management  
Resource-scarce Prototyping

### Themes:

Design Education  
Community-led Design  
Ethnography

Design Engineering  
Community Engagement

### Roles:

Kevin Lee  
Luisa Charles  
Louise Skajem  
Marco Da Re

Bang  
Sathid (Steve)  
Chayut  
Nuttara  
Dr. Tanyaluck  
Udom  
Pae Natwilai

Thai Young Scientists Academy  
National Science Museum Thailand  
UNESCO Japan

Designer, Director, Camera, Project Manager  
Designer, Director, Camera  
Designer  
Camera

Farmer, Co-Designer  
Farmer, Co-Designer, Translator  
Medical student  
Medical student  
Doctor  
Panel facilitator  
Panel guest, Entrepreneur

Sponsor  
Sponsor  
Sponsor

## What is the project?

*A co-design project, filmed and edited into short documentaries, and a live panel, to further STEM & design education in Thailand.*

## Thailand

## Process

### Needfinding & Ethnography



We quickly established contact with Sathid, who translated for us, and who introduced us to Bang, the rubber and palm farmer we ended up working with. By interviewing them, and then accompanying them to the rubber and palm farm several times, we sought to understand in their words and experiences life and needs in southern Thailand.

**Bang introduced us to a group of local fisherfolk**, who we fished with at midnight, when the shrimp and fish were

most active. **We visited Bang's farm 3 times on factfinding and needsfinding missions before beginning prototyping.** Bang and Sathid also showed us where they grew up, the swimming holes they enjoyed as kids, and explained how local infrastructure and restaurants operated, among other things.

### Iterative Prototyping & Feedback



Top: A midnight visit to the rubber farm. Rubber must be harvested at night at cooler temperatures  
 Bottom left: A prototype using rice bags as a readily available material  
 Bottom right: Testing an attachment mechanism

After discovering the need rubber tree guards, to protect rubber harvests, **we repeatedly developed prototypes, tested them, got feedback from users, and refined them.**

4 versions were tested:

1. Initial prototype
2. Rice bag prototype
3. Organic materials prototype
4. Final co-designed woven prototype

Each prototype was affixed to a rubber tree for a long enough duration to test durability during rain and high winds, usually a few nights. Because rain ruins the rubber harvest, it was crucial to develop something watertight or waterproof and to test it during rain. Most tests were evaluated at night, during rubber harvesting time after fresh rain.

## Learning & Outcomes

### Handoff



Because this project was a co-design project, we were overjoyed when **Bang himself engaged in the prototyping and ideation by coming up with ideas for future work**. The most important part of the rubber tree guard project was the handoff, in which Bang would continue the work that we had started together. His proposal at the time of handoff was to integrate local weaving techniques and employ the local home-bound elderly population.

## Panel and Documentaries

The outcome of the rubber tree guard project was documented for the short form documentaries. A separate short form documentary was filmed at a hospital once we arrived in Bangkok, to document the working lives of medical students and doctors.

In the end, this work produced:

two short-form documentaries, one trailer,  
a co-designed rubber tree protector,  
one live panel,  
countless trips to Bang's farm,  
and one midnight needfinding fishing trip.



### Key achievements :

- Applied a co-design and community-led design methodology
- Worked with local materials and techniques
- Fabricated 4 prototypes in collaboration with a community
- Self-directed project structuring: goal formation, deliverables, client management
- Utilized filmmaking and audio skills in combination with design
- Documentary film directing
- Community led design
- Materials scarce prototyping
- Panel public speaking
- Project management

### New skills :

# MX-CLP

*Portable video editing inspiration*



Materials : Bright orange enclosure  
Capacitive touch wheel  
Low RPM brushless DC motor\*

High brightness IPS screen\*  
Spring loaded slider  
USB C video output\*

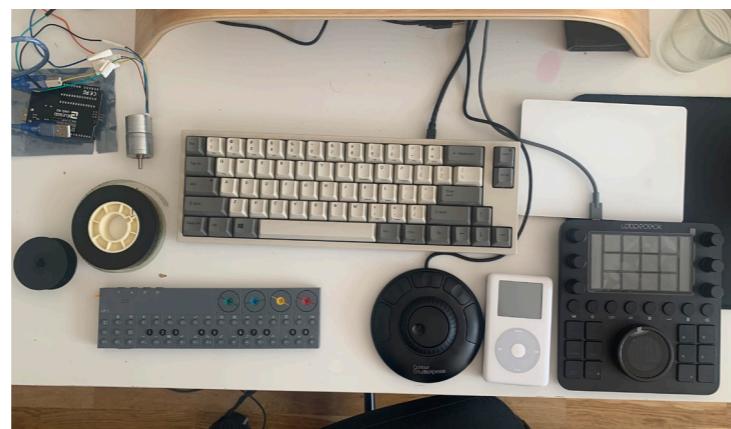
\*Planned

#### Concept Overview

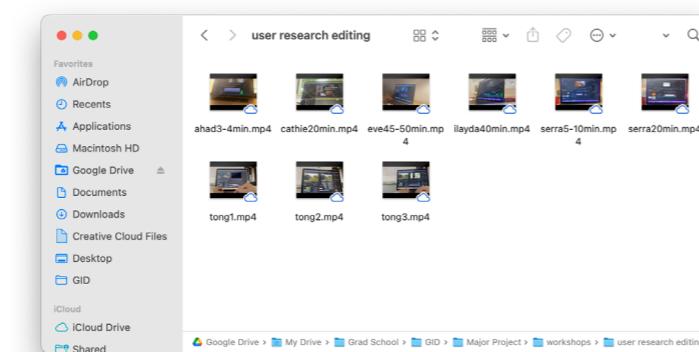
Video editing is a creative process with essentially only one kind of tool in use, and a digital one at that. MX-CLP is a new portable video editing paradigm which hopes to reintroduce tactility and foster new forms of visual storytelling.

Cognition is aided by physical movement – not only through their expressiveness, but in their ability to embody cognitive processes. MX-CLP draw inspiration from tried and true methods of physical editing, on film, to inspire a new generation of editors.

## Research / Problem Area



Research for this project began with physical film editing on flatbed 16mm film editors. Reading first hand accounts and interviews with film editors also revealed inspiration from the physicality of the film based processes, and fueled my interest into other disciplines with heavily tactile interfaces.



Extensive user research was conducted for this project, including surveying, workshops, observation, and interviews. Above, several hours of video editing observation footage.

The methodology employed closely follows both Vision in Product Design and speculative design, in which a preferable future is imagined and analyzed in order to move towards it.

### Skills :

Iterative Prototyping  
Surveying  
User Research  
Workshop Design

Video Editing  
Community Outreach  
Physical Computing

### Themes:

Tactility  
Accessibility  
Interface Design  
Vision in Product Design

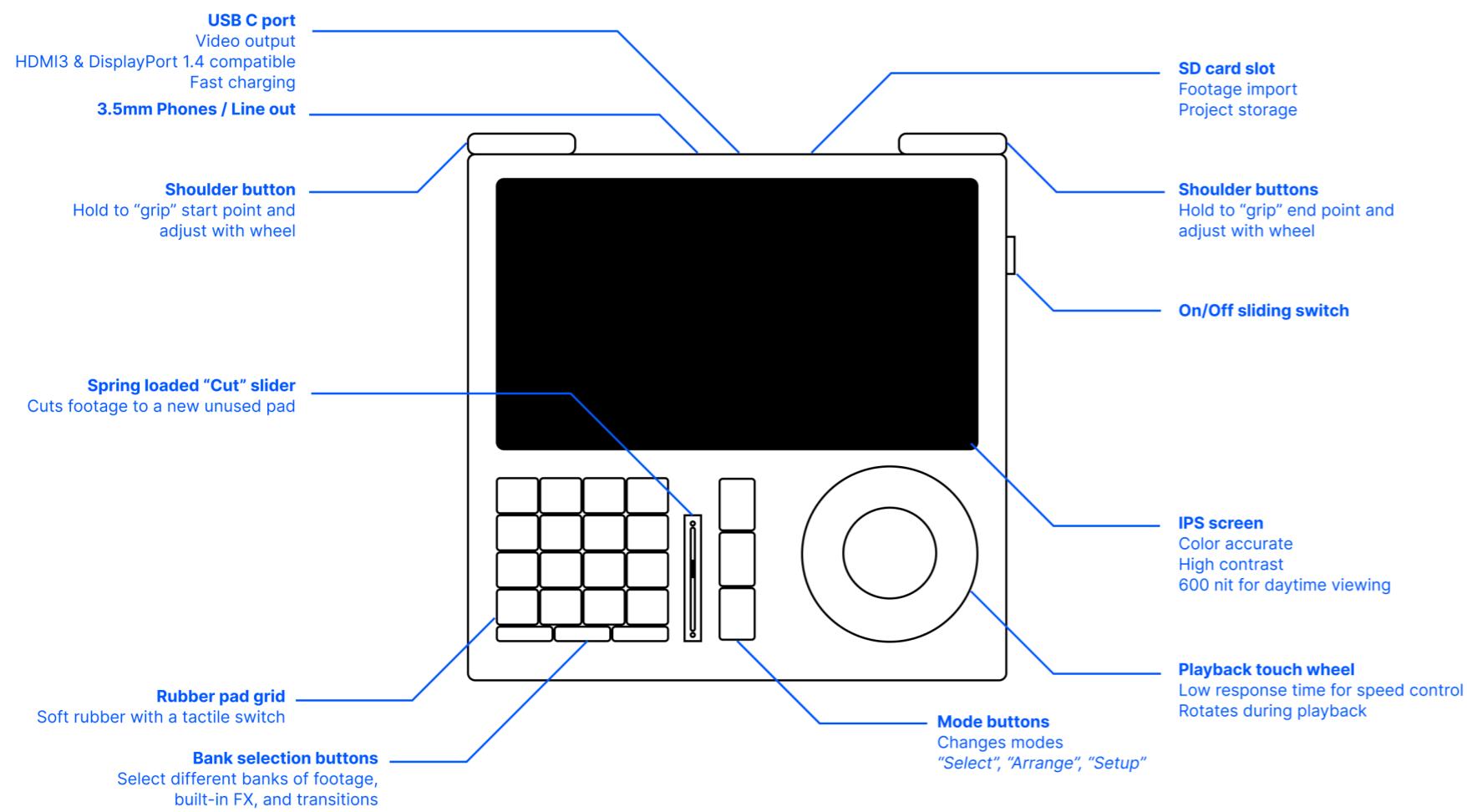
Human Computer Interaction  
Embodied Cognition

## What is the project?

*A portable, tactile video editing device using embodied cognition and physical metaphor to spark new creativity.*

# Process

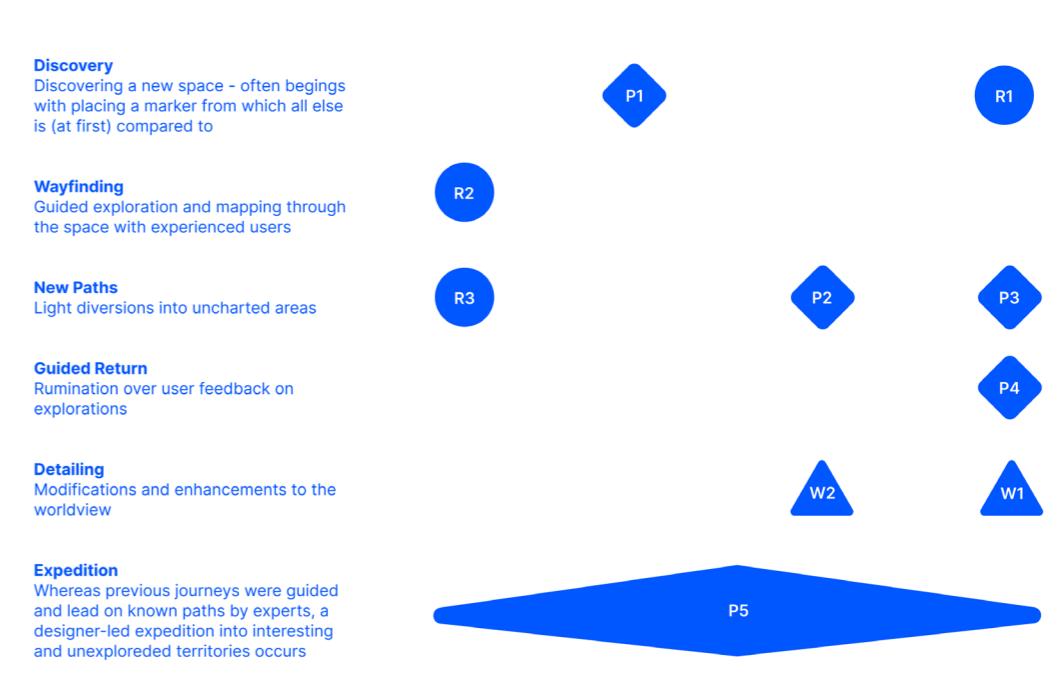
**Figure: MX-CLP Portable Editing Suite**



**Figure: Features and Work Relative to Goals**

	Tactility	Process	Curiosity
P1: Full Layout Keyboard Prototype	Sliders	Full layout	
R1: Interface Survey & Market Research	DJ turntable Consumer rotary interfaces	Flatbed film editor	
R2: User Interviews		Process walkthrough	
R3: User Survey			Future needs questions
P2: Grid Based Footage Assembly Prototype			Grid interaction
P3: Slider Input Footage Selection Prototype	Zoom slider	Full layout	
P4: Rotary Interface Prototype		Rotary interactions	
W1: Linear Editing Workshop	Touch bar	Linear editing	
W2: Interface Design Workshop		Important controls	Most interesting controls
P5: Portable Touch Wheel Prototype	Capacitive touch wheel	Full portable layout	Touch-based speed control

**Figure: Methodology Process Matrix**



●=Research ◆=Prototype ▲=Workshop

## Process Workshops

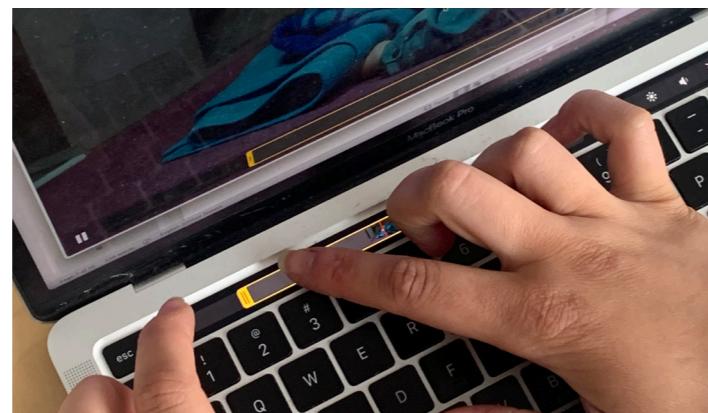
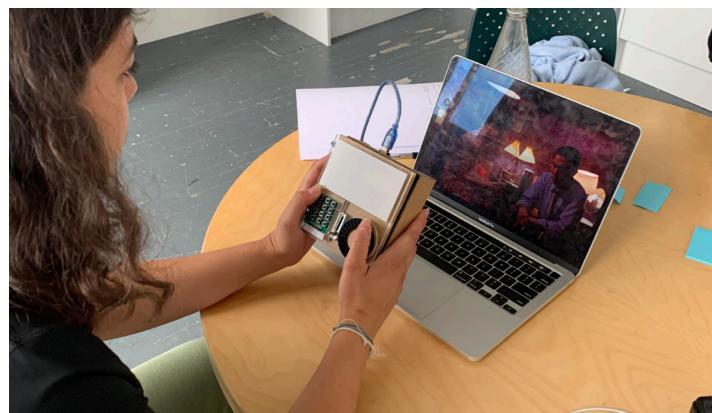


*Materiality and form feedback sessions, engaging users on the physicality of a wheel based interaction and alternatives*



*Interface design workshops, in which editors were asked to imagine their ideal editing peripherals with a given size and feature set*

*Editors were also asked to evaluate several existing interfaces printed to scale*



*Left, a prototype test of a handheld version with a software demo running in MaxMSP*

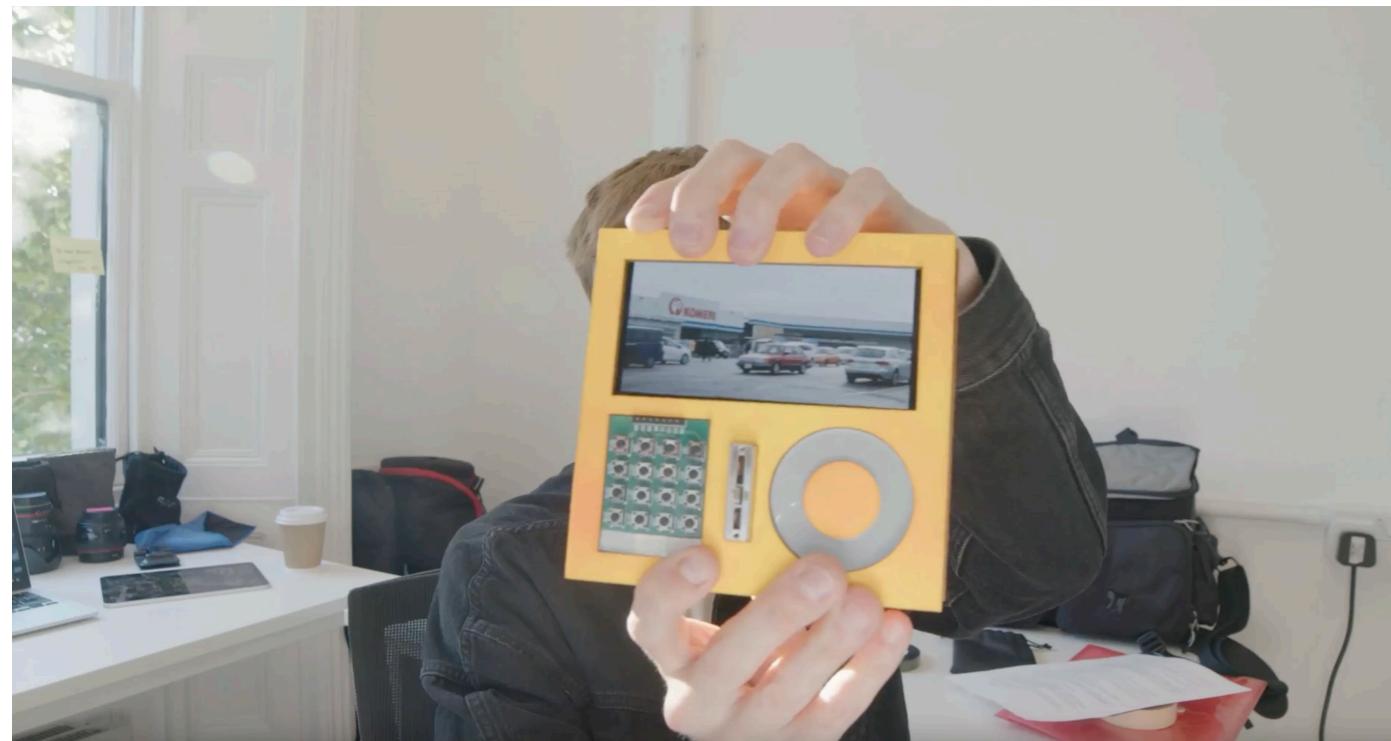
*Right, a user edits video with a linear workflow to emulate the linear workflow of physical film, in order to test the efficacy and interest in such an approach*

## Survey



A survey of professional editors was conducted, with a total of 10 responses collected in 5 cities. Interviews were conducted with 4 professional editors of various experience levels and focus areas.

## Learning & Outcomes



Halfway through this project, it was realized that much of the work existed theoretically and on paper. In order to accelerate this project, rapid prototyping and user feedback sessions accompanied iterative prototyping in this process. This series of work was extremely rewarding - to get what was in my head out and to see it validated and rejected in front of users.

- Key achievements :*
- Applied a speculative design inspired methodology
  - Extended a physical and tactility interaction metaphor
  - Tested 5 prototypes
  - Ran 3 workshops and user feedback sessions
  - Surveyed and interviewed a variety of users from international contexts
  - Engaged in the filmmaking community

*New skills :*

- Rapid iterative prototyping
- Workshop design
- Survey design
- User research

# Acknowledgements



*Thanks to everyone I worked with, consulted with, and confided in, for encouraging me to push myself to be more than I am, for being there to plan every uncertain step and take each leap if all else fails, and for being crazy enough to believe that we can change the world.*