

*Design*



*Portfolio*

Maya Chen is a designer  
of **human connections.**

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# *The Forest of Utterances*

Depicting the multi-linguistic contact zone through sound and movement in space.

## **Team**

Individual

## **Medium**

Immersive Installation

Sound

Computer Vision

## Overview



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*Felicia among the 'language trees'. An integral part of the installation is the mounting of two upright screens in the space, upon which visuals of the forest are projected.*

*The Forest of Utterances* is an audiovisual installation that explores the unique ways language is blended, morphed, and recombined when its users wander<sup>1</sup> across land.

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<sup>1</sup> Migration is a central driver of change in one's language structures.



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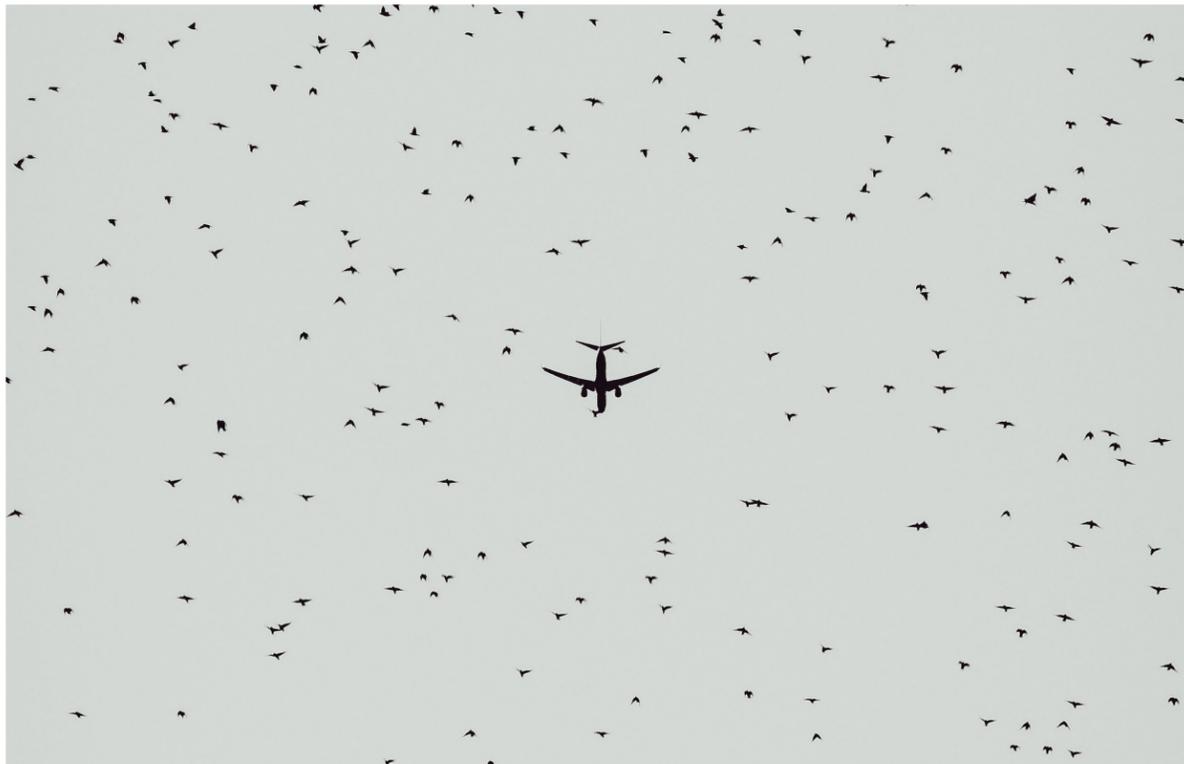
*A moving background - snapshots from Aizuwakamatsu (2016), Shanghai (2015), and Berkeley (2021).*

This project is, at its core, a discussion of hybridized identity through a linguistic lens.

## On Heteroglossia

*“At any time, in any given place, there will be a set of conditions—social, historical, meteorological, physiological— that will ensure that a word uttered in that place and at that time will have a meaning different than it would have under any other conditions.”*

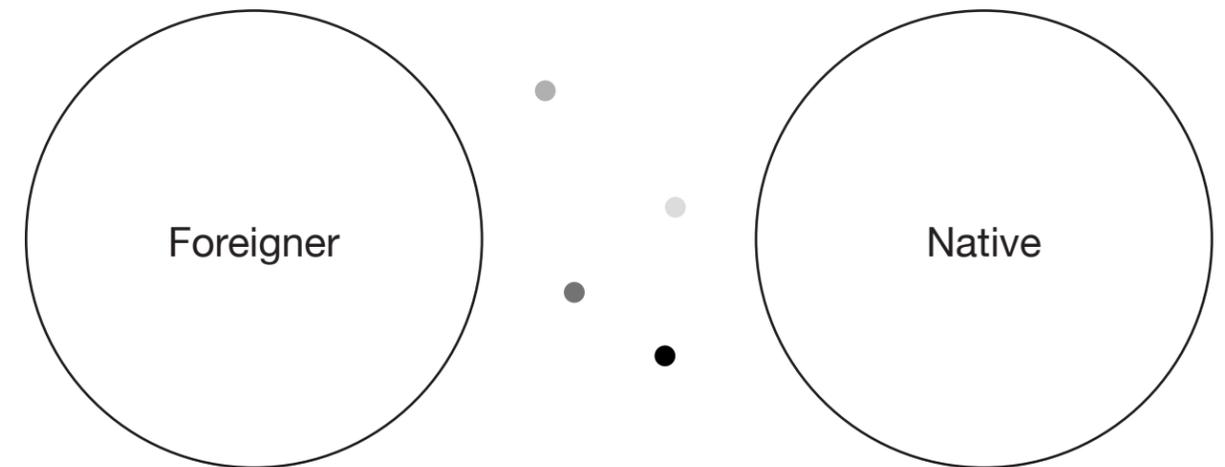
-- Mikhail Bakhtin (1981)



Unsplash.

Driven by my experiences growing up between languages and cultures, I wanted to celebrate a mindset of thinking about differences in a celebratory way, rather than a stray from a ‘norm’. Bakhtin’s coined term, ‘heteroglossia’, was a perfect encapsulation of how I felt.

My project follows the work of sociolinguists in recent decades to shift the locus of research towards a bi- and multilingual-centered approach.



*Fluid language identities: rejecting the ‘native’ vs. ‘non-native’ binary.*

Prior Art



Studio TheGreenEyl Found in Translation (2021)

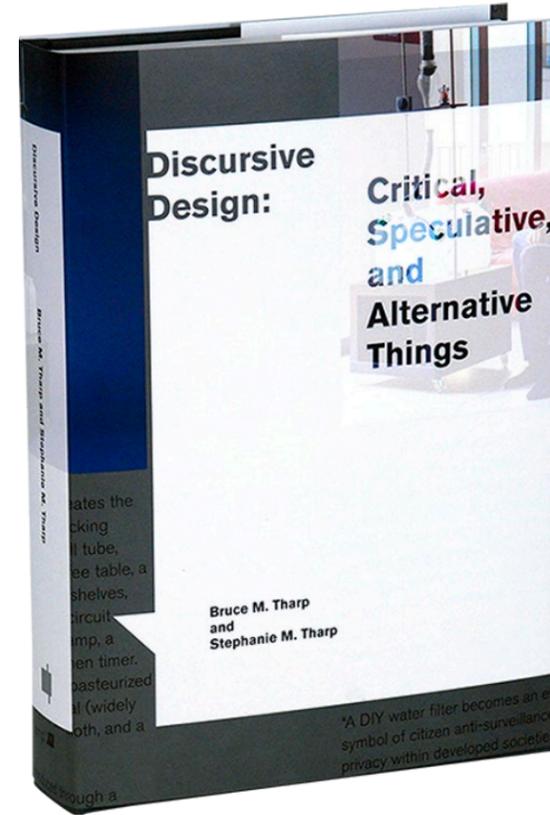


Behnaz Farahi Can The Subaltern Speak? (2020)

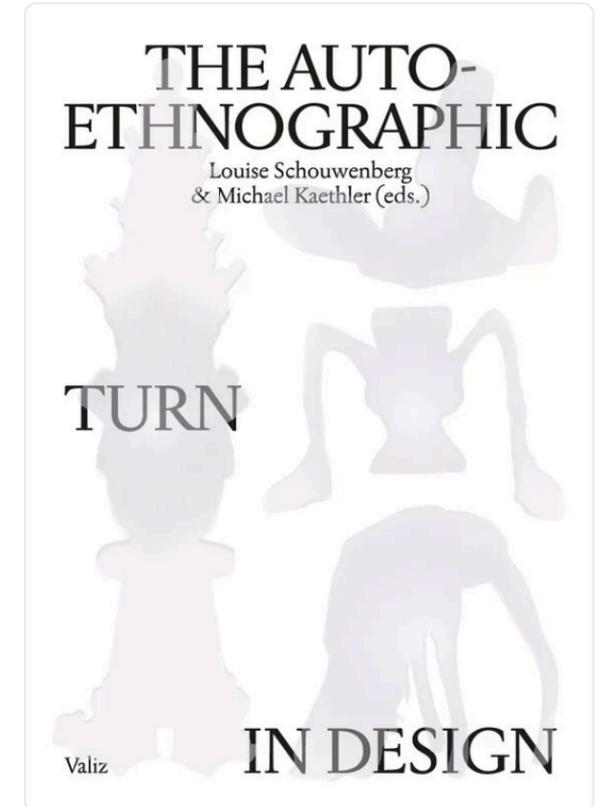


Weidi Zhang Cangjie's Poetry (2021)

Methodology



Courtesy of The MIT Press and Valiz.



I embraced discursive design and auto-ethnographic design ideologies for this project. Both view design as a tool for critical discussion and investigation of sociocultural issues.

## Interviews



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Conducting open-ended interviews with my classmates. Participant criteria: individuals who either spoke two or more languages or grew up in a household where two or more languages were spoken.

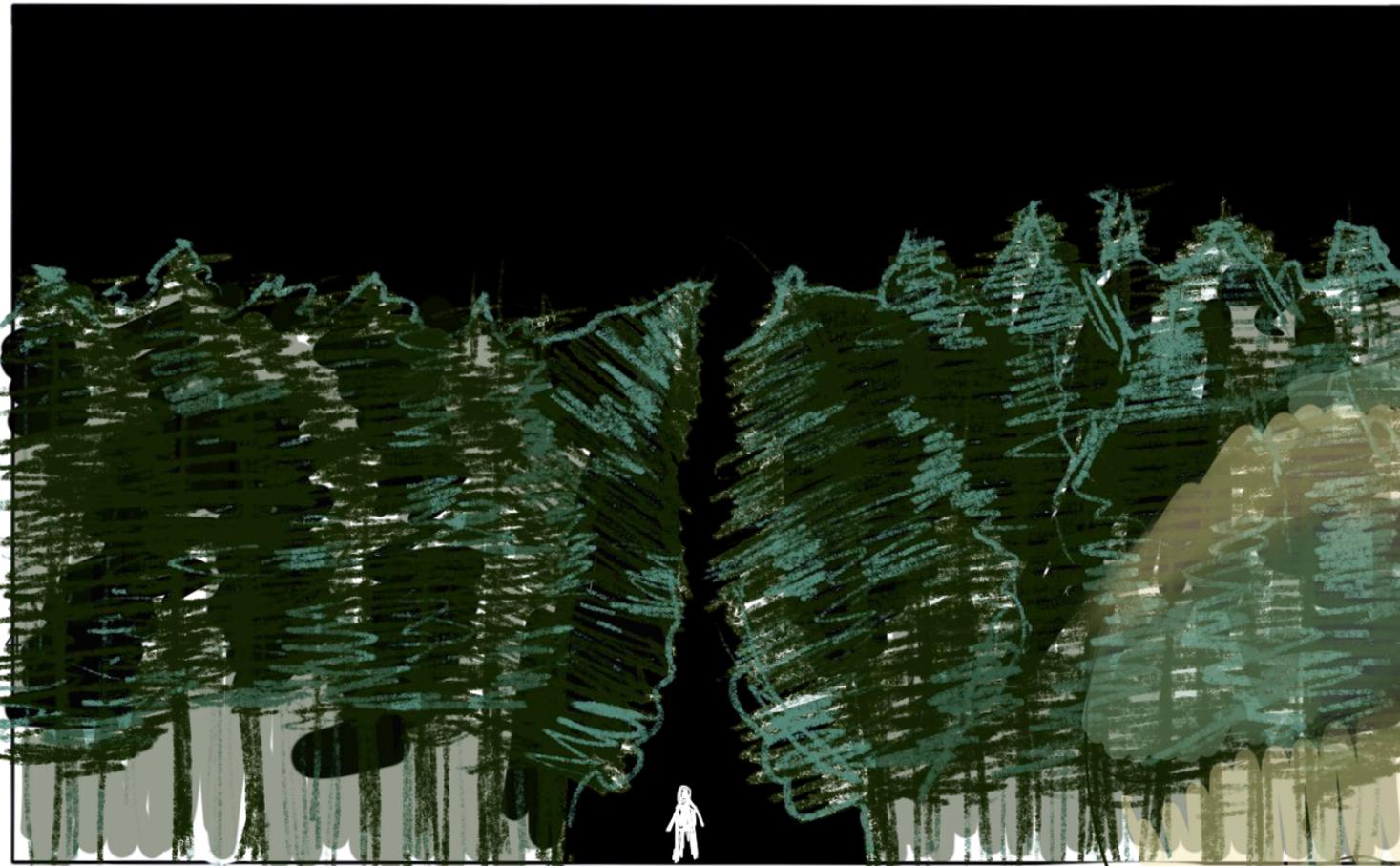
I found the conversations extremely helpful for viewing my topic from different perspectives. While I had mostly been talking about language loss, others felt compelled to portray their experiences with hybridity as products of *injustice*, *discrimination*, and *drift*; all

symptoms of change within a greater socio-cultural network.

The addition of these themes drove me to pursue a final artifact that captured the linguistic frictions generated from migration at a larger scale.

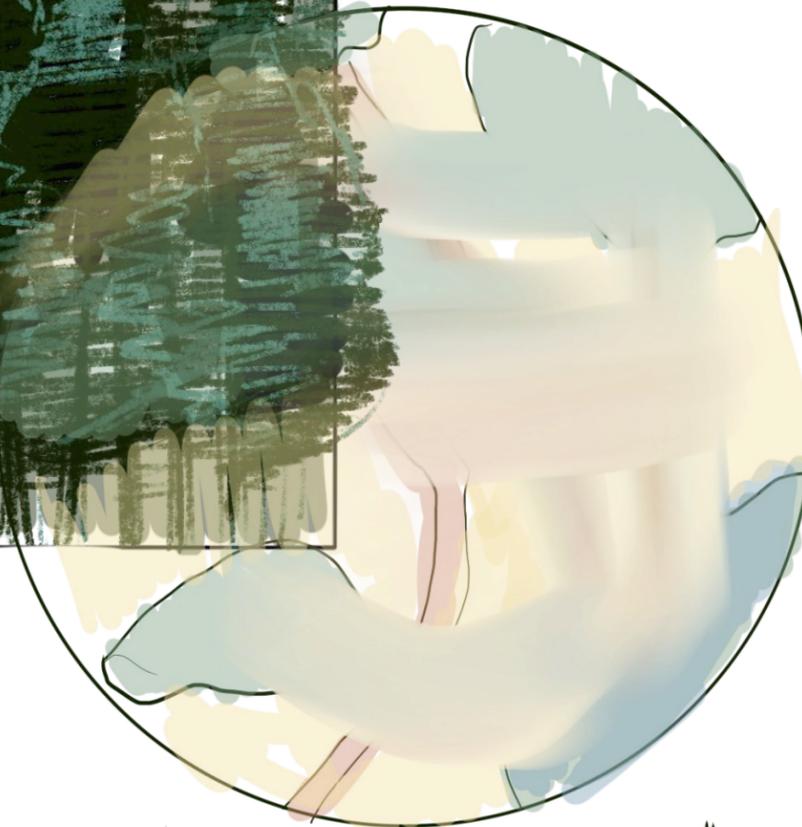
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Sketches of the Forest

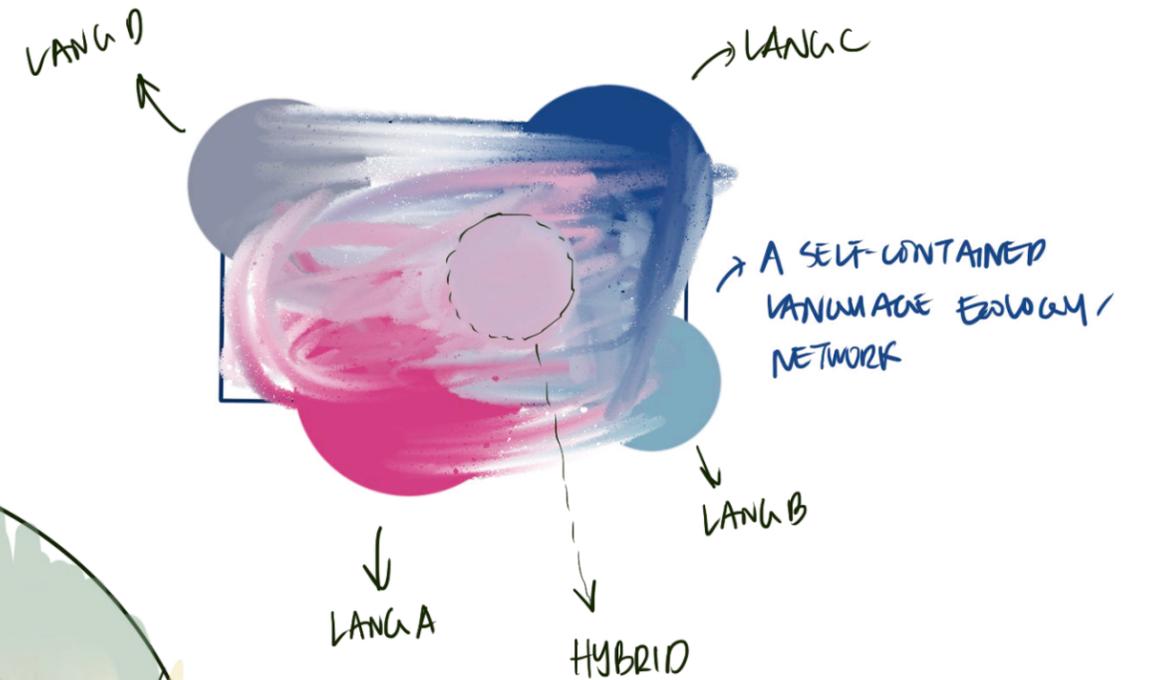


① THE FOREST OF LANGUAGE

Inspired by the reoccurring motif of trees in linguistics, I thought of a metaphorical forest where movement through physical space drove spoken-language hybridity.



A: TOP-DOWN VIEW OF SCENE: "BLENDING"

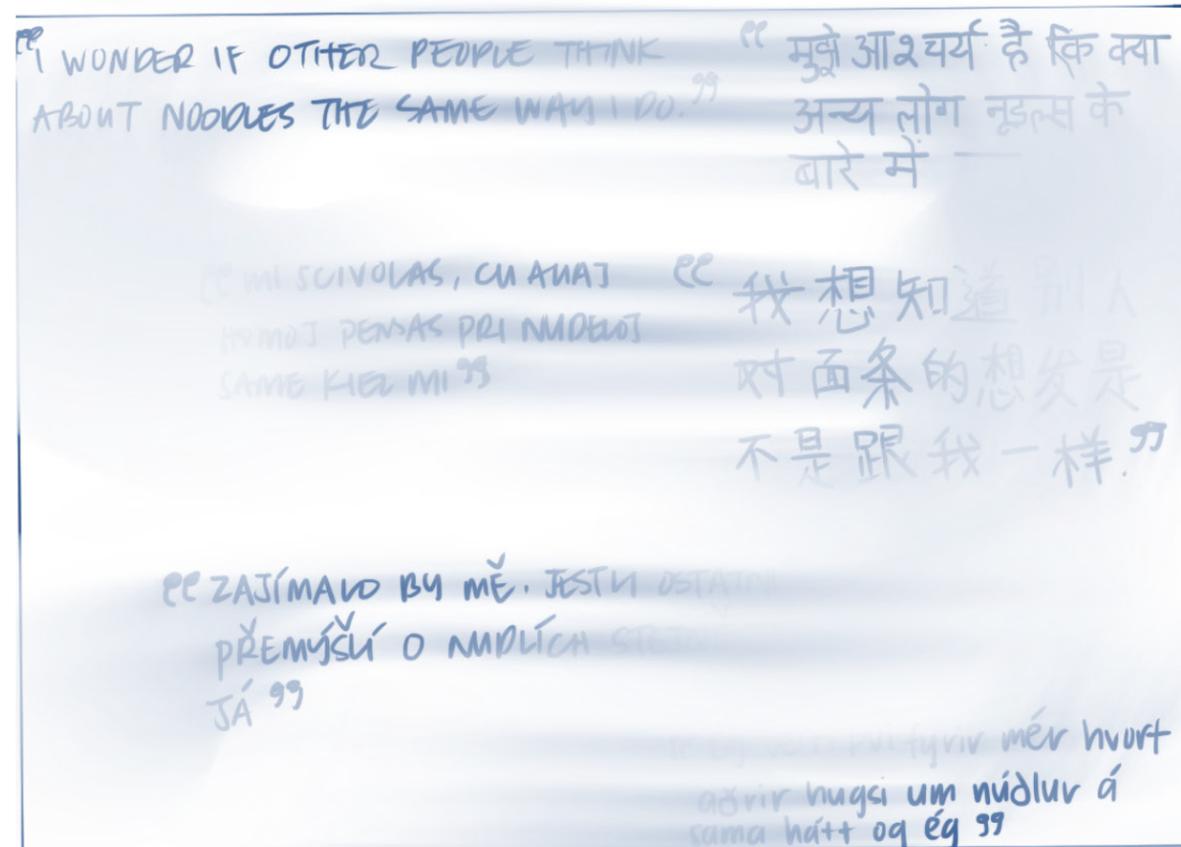


Visual depiction of the sound blending that would occur if someone were to walk between different language zones.

An interesting way to materialize this language hybridity could be through blending of sounds.

If a person were to walk through certain language zones of this 'forest' and experience blends between those languages, they would perhaps be able to grasp one significant aspect of the multilingual experience: codeswitching.

## Coded Codeswitching

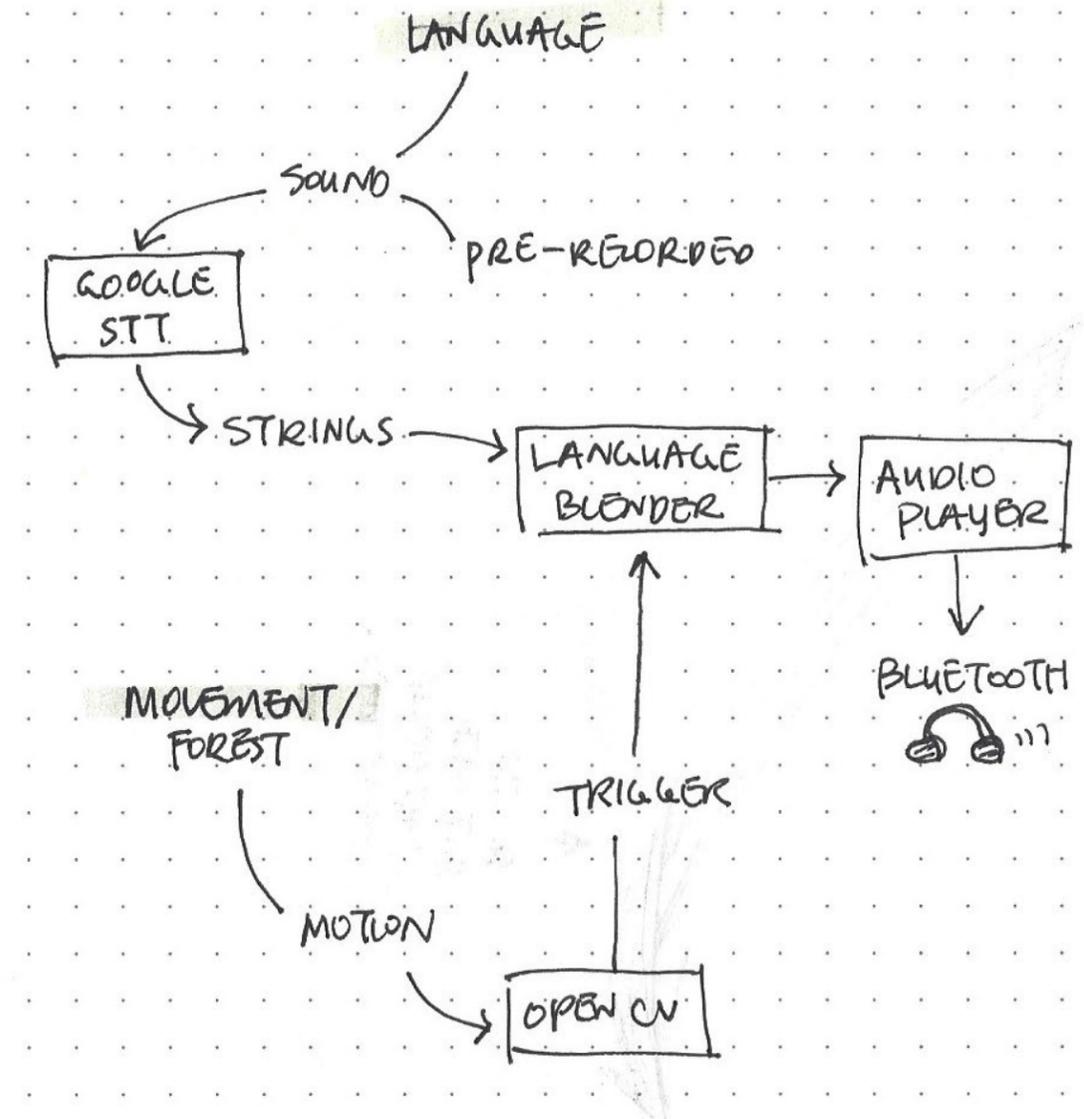


Blended translations of the same phrase in English, Hindi, Esperanto, Chinese, Czech, and Icelandic: "I wonder if other people think about noodles the same way I do." Noodles powered me through this project.

Codeswitching is second-nature, almost unconsciously done in our heads, but to make this work computationally (while also retaining sentence semantics) would be a challenge.

After making multiple efforts in visual programming platforms such

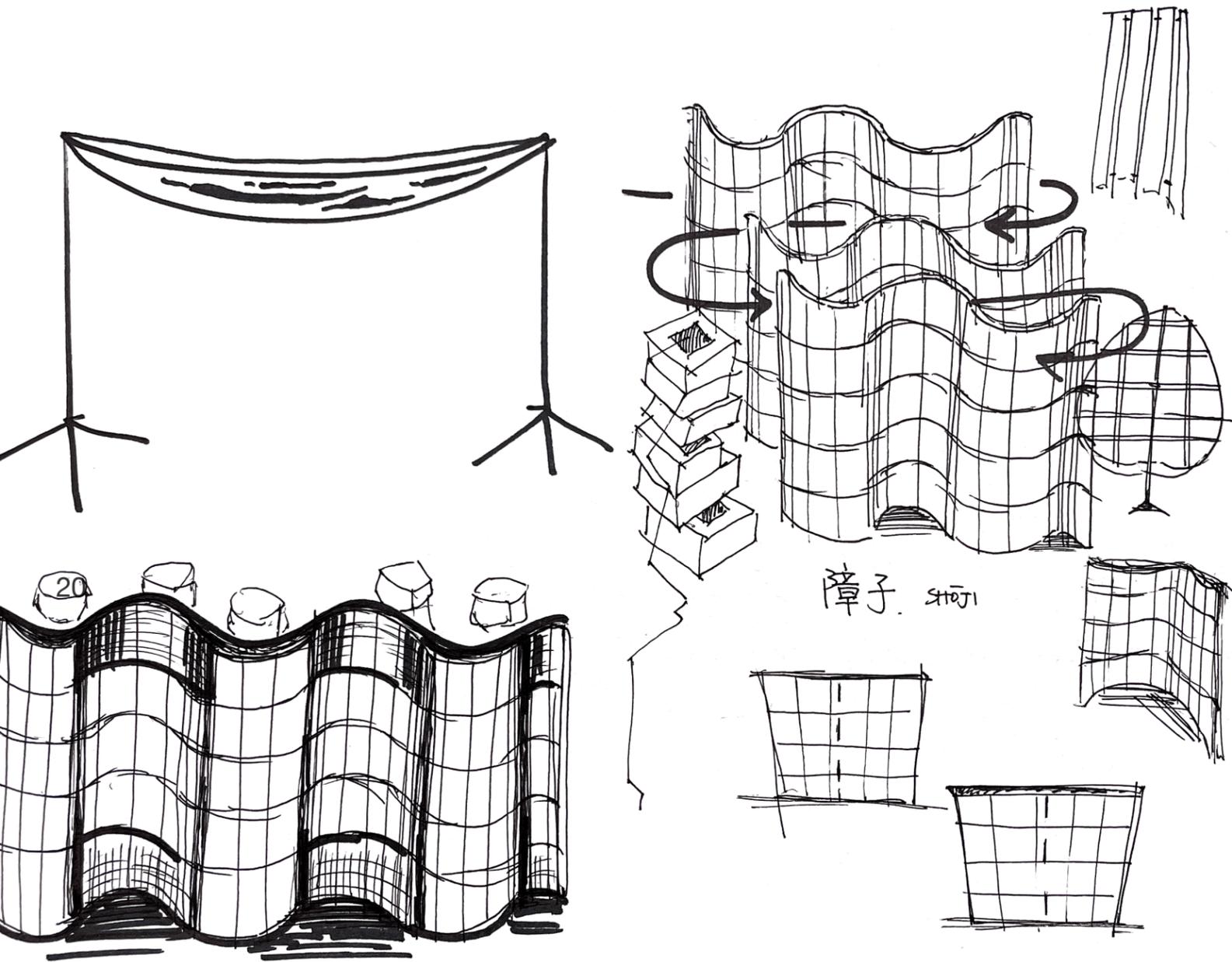
as Max MSP and TouchDesigner as well as prototyping in Arduino, I landed on Python's OpenCV programming library to detect position. I then used Python to write a script that would allow me to play recorded words from different languages based on that detected position.



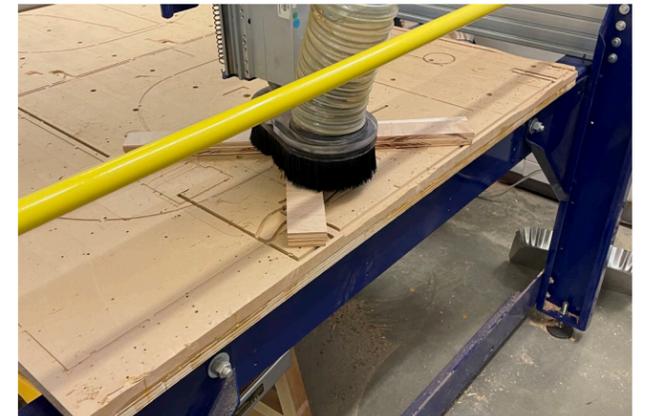
A sketch of the software and hardware pipeline. I didn't end up using Google STT (Speech-To-Text) or strings at all. Instead, the code directly played the recorded words in order, so that the resulting sentence still made semantic sense.



# Physical Space Design: Upright Screens



Sketches of a flexible, potentially foldable screen for the physical space. These would be used to partition my space from other students' and also serve as a projection surface.



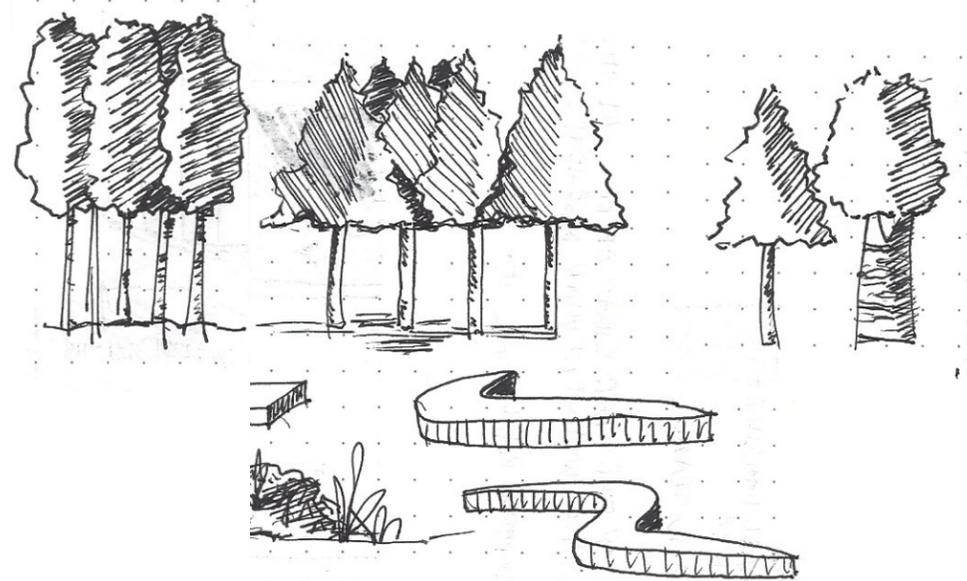
Making the screens in the woodshop with Jacobs Design Specialist Adam Hutz.



*Test of the screen as a projection surface in-situ. Video by Porter Robinson.*

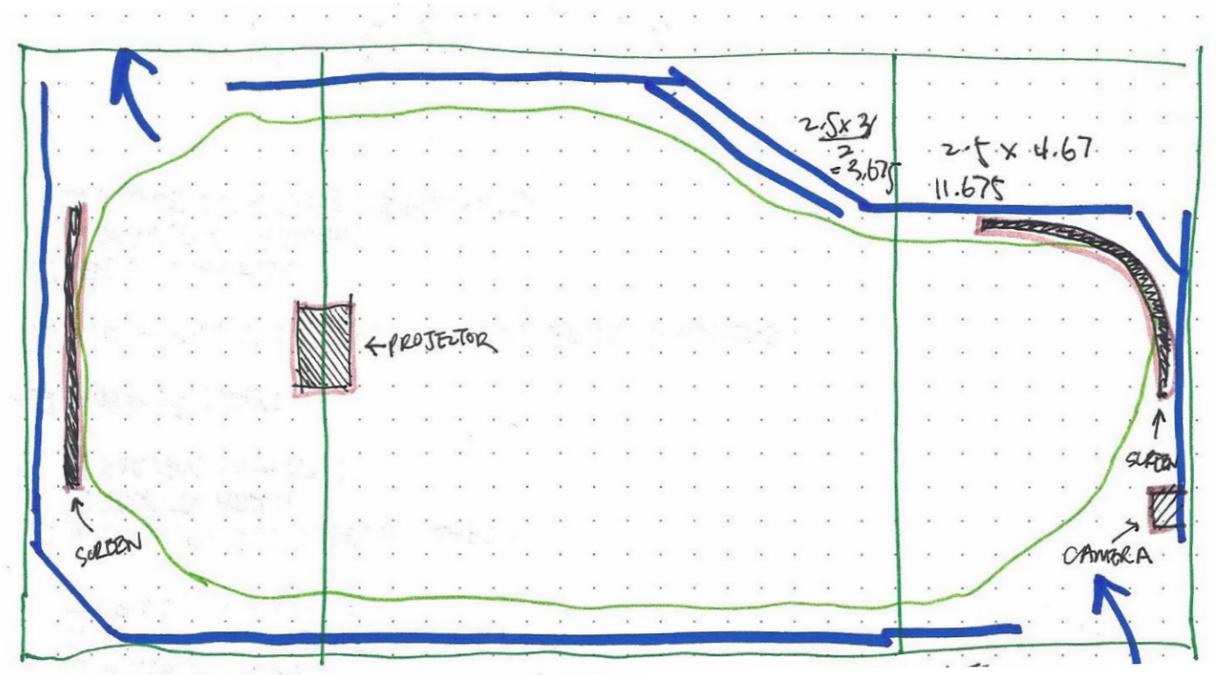
## Physical Space Design: The Forest

My goals for the forest were twofold: the first was to create a space that would act like a gateway or portal to another world, and the second was to capture the feeling of a forest without being too literal.



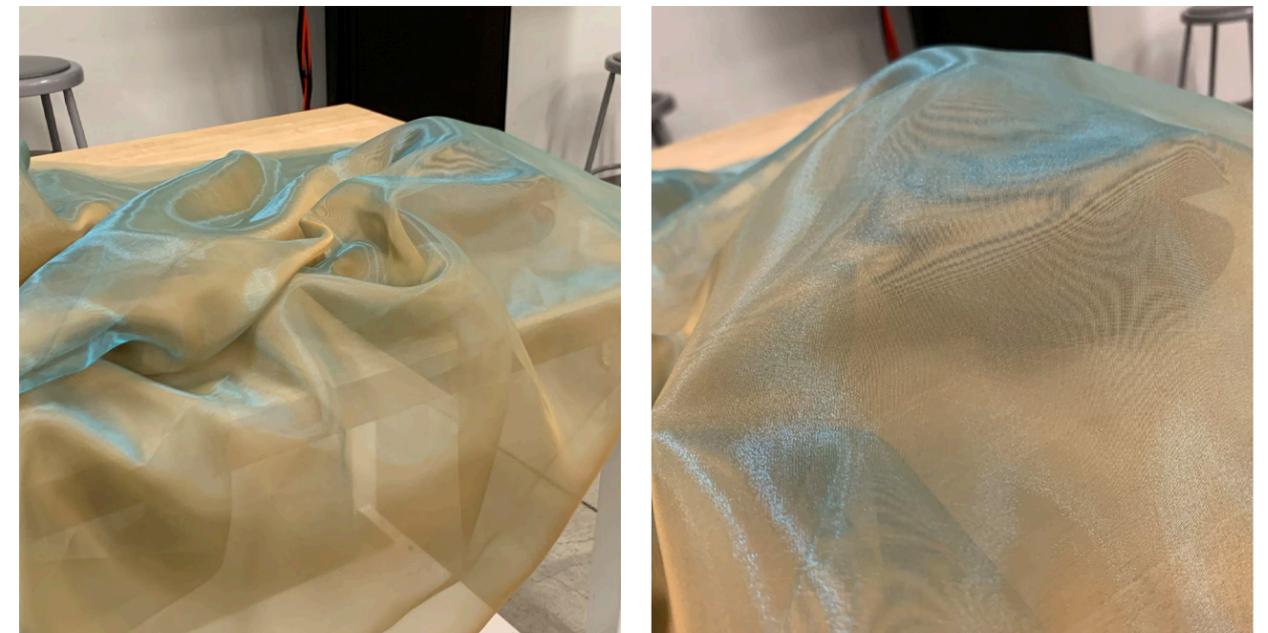
A source of inspiration for the installation - the Australian Pavilion at the 2018 Venice Biennale.

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Layout sketch. Central components to the interaction are the two upright screens, projector, and camera.

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Conducting "grass" tests with a sheer, iridescent blue-green fabric.

*Outdoor Photography for Exhibit Branding*

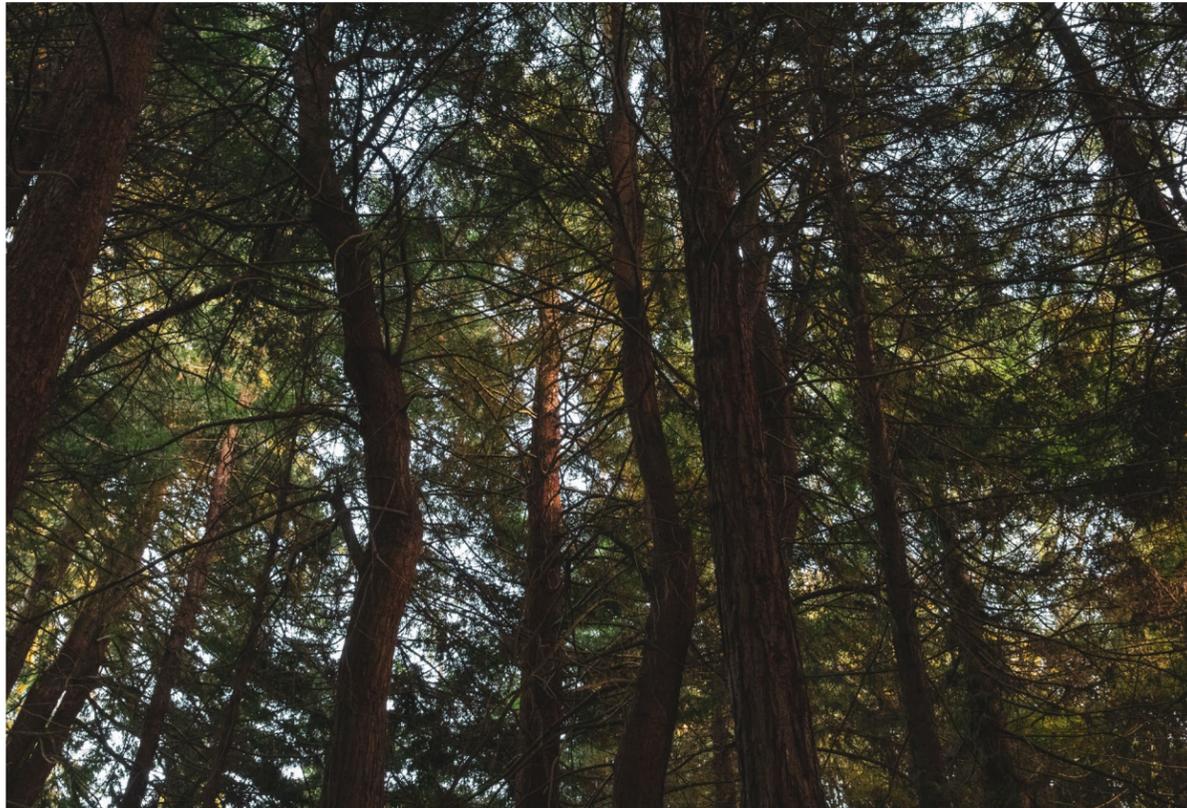
All images taken at the Nancy Pelosi AIDS Memorial Grove, San Francisco Golden Gate Park.



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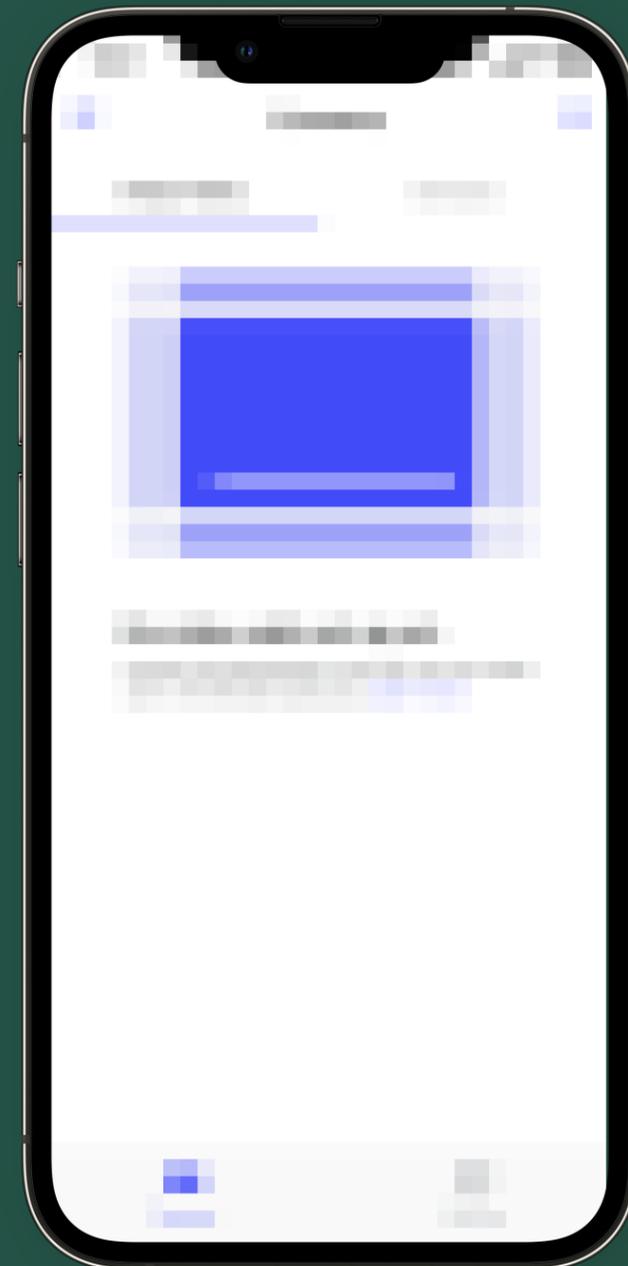


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# Cisco Meraki

UX design internship, Summer 2022.  
Designing for IoT features on the  
Meraki Mobile App.



**Team**  
IoT Mobile Team

**Medium**  
Digital Product Design

*IT'S ON PURPOSE, NOT YOUR PRINTER: The work I did  
for Cisco Meraki is under NDA.*

## About the Company

Cisco Meraki offers cloud-based networking services for businesses of all sizes. These services span both hardware and software.



The screenshot shows the 'Alerts' section of the Meraki Dashboard. It features a table with columns for 'Alert type', 'Network', and 'Devices affected'. The table lists various alerts such as 'Power supply offline', 'Unreachable device(s)', and 'Device firmware mismatch', each associated with a specific network and the number of affected devices. The interface includes a search bar, a filter for 'Last day', and a 'Rows per page' dropdown menu.

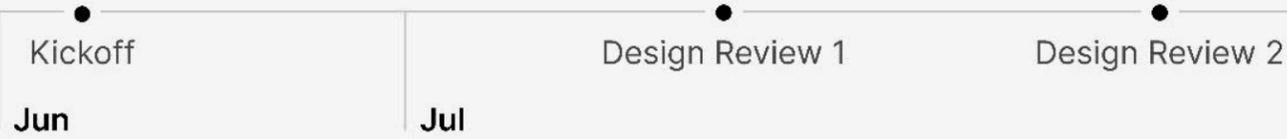
Alert type	Network	Devices affected
Power supply offline (Device Health)	NY2 - office 5	13 (MX, MS)
Unreachable device(s) (Connectivity)	Hong Kong HQ	24 (MS, MR)
Unreachable device(s) (Connectivity)	Seattle Data Center 1	14 (MR)
Device firmware mismatch (Configuration)	Sydney refreshed	04 (MX, MS)
Device(s) VLAN mismatch (Configuration)	Shanghai main hub	04 (MS)
Device firmware mismatch (Configuration)	Seattle Data Center 1	39 (MR)
Dormant device(s) (Connectivity)	Hong Kong HQ	10 (MS)
Host overflow (Configuration)	LAX-331_rewq	30 (MR)
Never connected to the Meraki cloud (Connectivity)	NY1 - cloud controller	13 (MR)
Never connected to the Meraki cloud (Connectivity)	Coffee shop 12	34 (MR)

From left to right, top to bottom: a Meraki Smart Sensor (MT), Meraki Security Gateway (MX), and a screenshot from the Meraki Dashboard.

My task was to **redesign the app's home screen** to increase access to camera features for a wider set of Meraki's mobile users.

This summer, I worked primarily on camera-related features in the mobile app. These features revolve around the capabilities of Meraki's smart camera (MV) product line, which include monitoring on-site streams, configuring devices, and responding to alerts.

Q4FY22



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Project Timeline

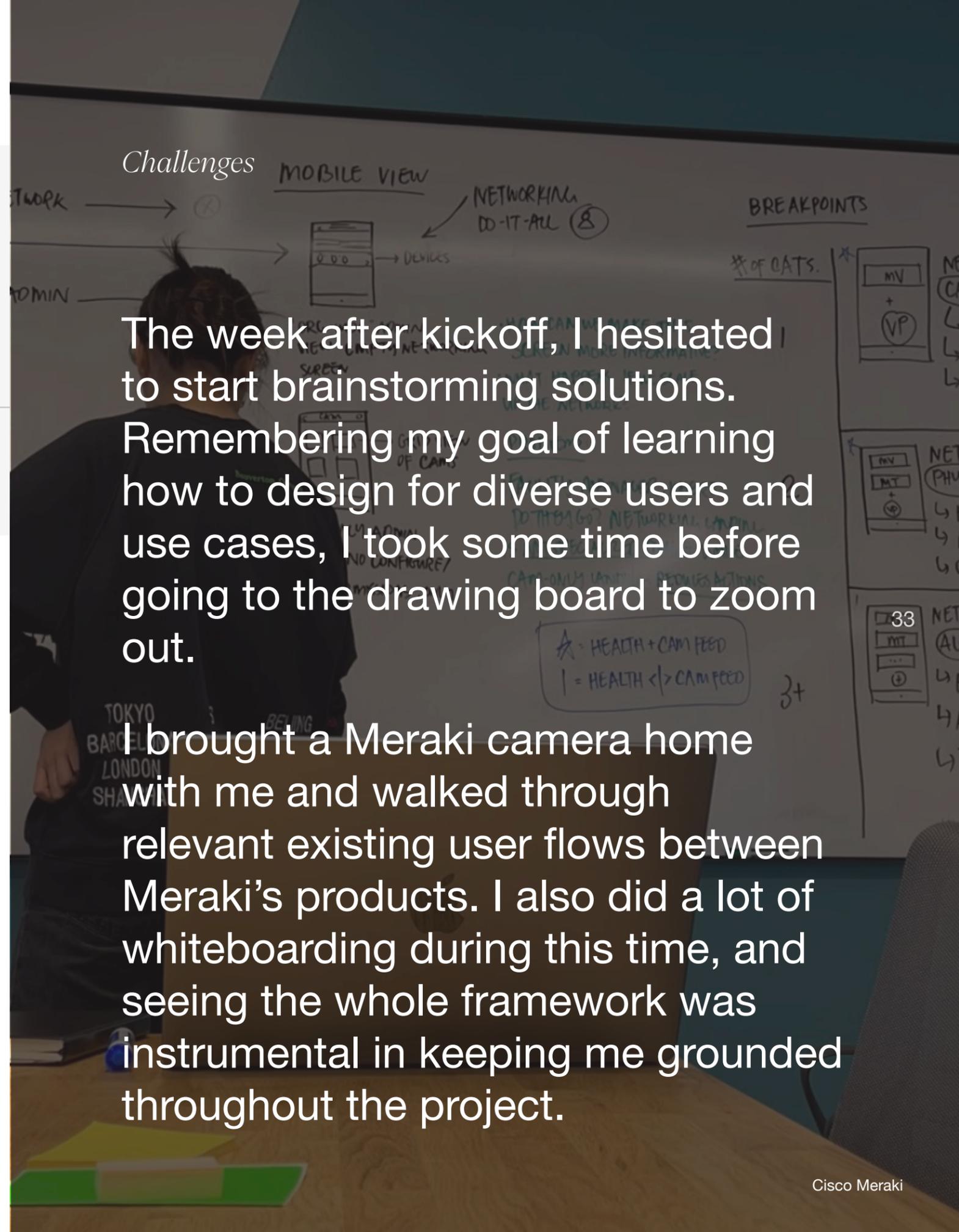
Q1FY23

Research Planning Session

Aug

Handoff

We successfully pulled through this timeline, with research synthesis wrapping up right before handoff.



The week after kickoff, I hesitated to start brainstorming solutions. Remembering my goal of learning how to design for diverse users and use cases, I took some time before going to the drawing board to zoom out.

I brought a Meraki camera home with me and walked through relevant existing user flows between Meraki's products. I also did a lot of whiteboarding during this time, and seeing the whole framework was instrumental in keeping me grounded throughout the project.

## *Outcomes*

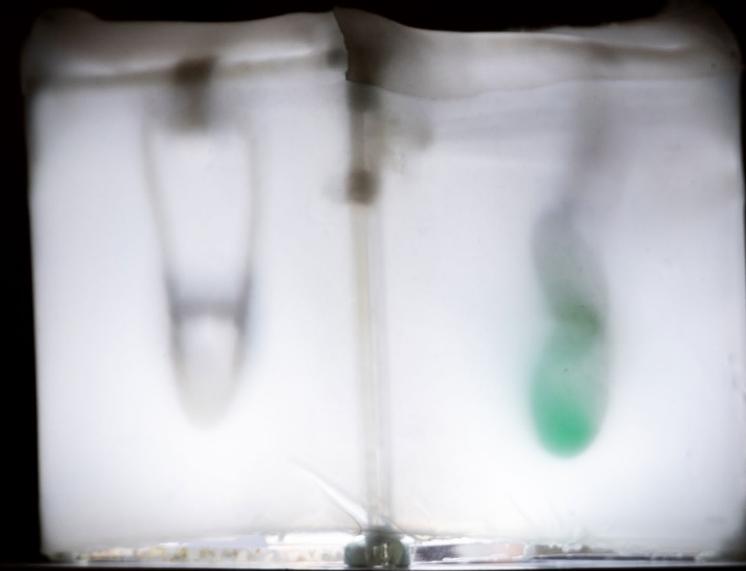
Shipped major improvements to the mobile app's information architecture

Successfully secured in-person user testing with representatives of often overlooked personas.

Promoted closer creative relationships between design and engineering.

# *Lingua Universum*

Lingua Universum is an exploration of language in relation to time, body, and space.



**Team**

Maya Chen  
Akash Mahajan

**Medium**

Soft Robotics

**Themes**

Language  
Communication

## *A Pixel of Time*

Language is a living thing - it has lived through and evolved with the Holocene. With this project, I wanted to explore these living properties by playing with the ways we perceive language: through the temporal, the physical, and the spatial. The main artifact of this project is the 'Pixel', a cuboid chamber with a thin layer of semi-transparent silicone stretched over the frame. Four unique soft robots are housed within. With all four of these shapes being incomprehensible until the viewer has walked completely around

the enclosure, we introduce a form of language that withstands deconstruction and transcends existing human linguistic rules.

The pixel is a representation of how visual or spoken forms of this language may be perceived by a civilization that uses it. As humans, we largely perceive things at a single point in time. If we changed our perspectives to include multiple fragments of time, would we become more worldly? Or would we become stagnated?



*ON A ROTATION: two soft robots that are attached at the far sides of the Pixel. When inflated, a haunting illusion is created of organic shapes furling and unfurling behind a fleshy skin.*



## Creating the Enclosure



Row 1: Laser cutting acrylic rods, gluing them together, and reinforcing the corners with threaded lashing.

Rows 2-3: Casting an external silicone skin that we stretched over the frame.



ASSEMBLY: What lies underneath the silicone skin is an elaborate weave of air pumps, soft robots, LED lights, (and in the underlying electronics box) wires, and Arduinos. After putting together the skeleton, we meticulously secured all of these loose bits together.

# *Final Form*



Plane A



Plane B



Plane C



Plane D

*At the exhibit, we mounted the cube atop a four foot pedestal in a dark room. As participants walked around the cube, they heard eerie, mysterious sounds reverberating from within.*

# Terrascape

Plan, track, and stay informed on your next hike.

**Team**

Maya Chen  
Chialing Chen  
Ramyani Roy  
Thomas Chen  
Bennett Ngan

**Medium**

Human-Machine Interface  
Wearable

**Themes**

Public Spaces  
Safety



## Overview

*Terrascape* enables hikers, especially solo hikers, to feel safer by allowing them to plan their hike at the onset and providing them with means of emergency communication on the trail.



Testing our dashboard prototype.

*Terrascape* was the capstone project for Technology Design Foundations, a course offered by the MDes that aims to explore the human-centered design and development of interactive and tangible products, services, systems, and experiences. After receiving acclaim from fellow cohort members and course instructors, *Terrascape* was proudly presented at the 2021 MDes Final Showcase in front of a panel of esteemed guest critics.



Ramyani and Chialing, dashboard construction.

As a culmination of not only the technical expertise we had gained over the semester but also our pedagogical understanding of the social dilemmas that overshadow design practice,



Bennett, dashboard construction.

this project challenged my team with designing a prototype that proactively crossed the boundary between neutrality and social justice.

## Rough Prototypes

We created three compelling and speculative prototypes to address our space.



### 1 - Hiking Dashboard

Displays trail conditions at trailheads.

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### 2 - Trail Checkpoints

Records hiker volume and displays helpful information (directions, the time, sunset).



### 3 - Personal Tracker

Broadcasts a GPS signal and provides access to emergency services on a hike.

## Final Prototypes

Based on A/B tests, the personal tracker stood out as the best option to be paired with the hiking dashboard.

Safety "Push and turn" Dial, SOS Buttons, ABS Casing, PCB Module, Battery Compartment



Has buttons for medical, animal and 911 emergencies, and a button for location services. Signals status via LED through a slot at the bottom.



From left to right: DC Power Supply, Arduino, Raspberry Pi; WS2811 LED Strips, Diffusion Layer, Acrylic Map, Natural Wood Framing

## *Benefits of Design*

### Personal Tracker

Small, lightweight, but powerful, the personal tracker gives everyone on the trail a means of staying in contact with trail and safety personnel.

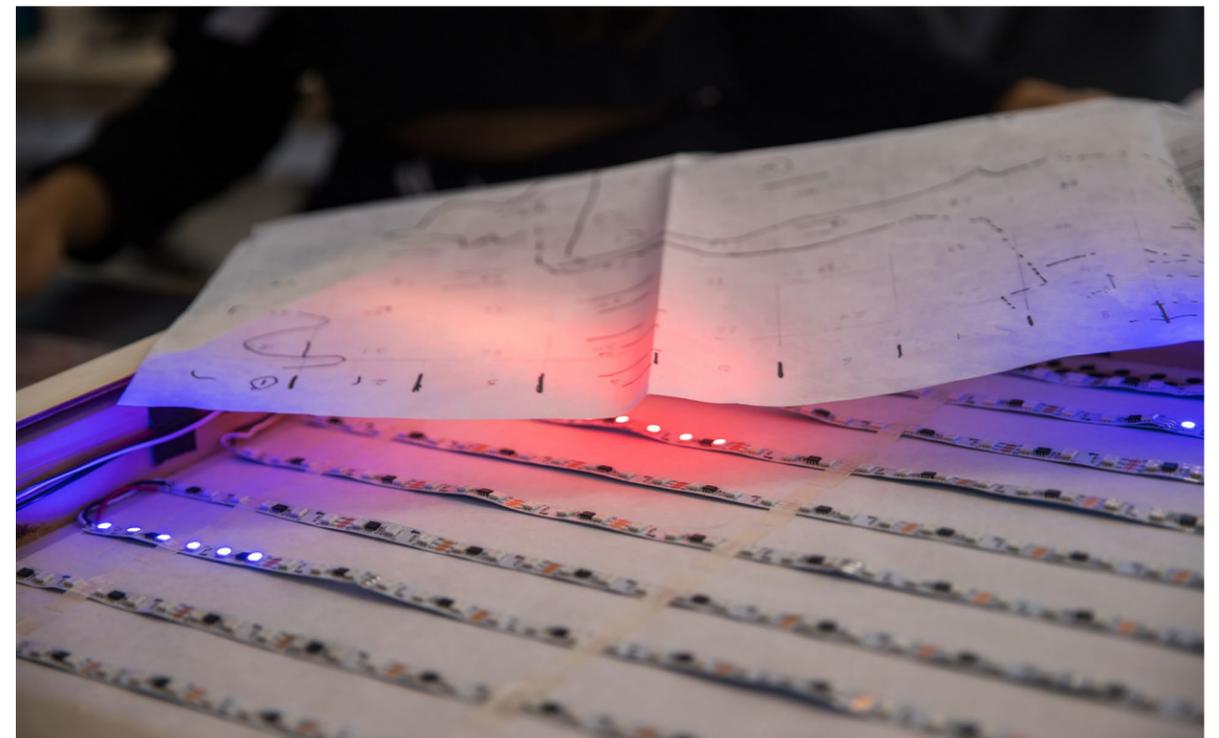
### Hiking Dashboard

The dashboard adds digitized elements to a traditional visualization tool, unlocking functionality while enhancing visual and information efficiency.

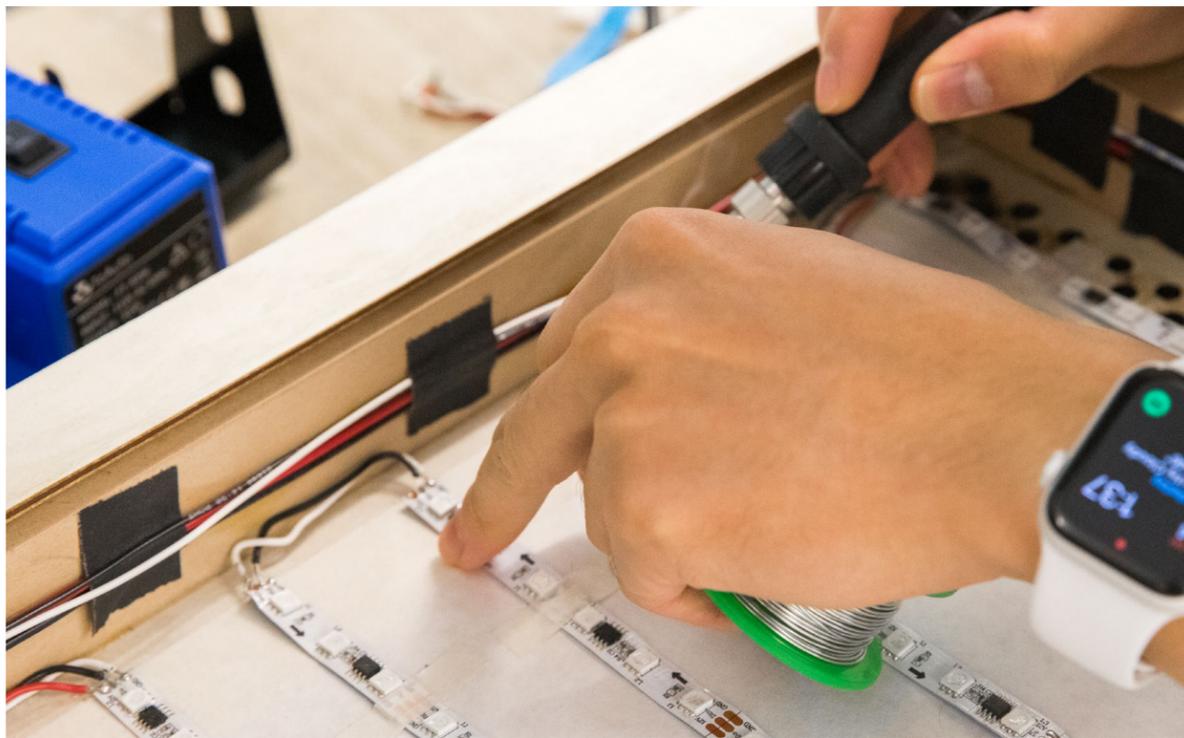


Sunset Indicator  
Hiker Density  
Map Legend

Status Indicators



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# Maya Chen

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## Experience

Cisco Meraki  
San Francisco, CA

•• UX Designer  
Mar 2023 -

UX Design Intern  
May 2022 - Aug 2022

Silicon Valley Insight  
San Francisco, CA

•• UX & Visual Designer  
Aug 2021 - Mar 2022

UX & Visual Design Intern  
May 2021 - Aug 2021

Develop For Good  
San Francisco, CA

UX Designer  
Jan 2021 - May 2021

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Invention Corps  
Berkeley, CA

•• Chief Operating Officer  
May 2020 - Dec 2020

UX Design Consultant  
Feb 2020 - May 2021

## Education

UC Berkeley  
Berkeley, CA

•• M.Des in HCI  
MDes Distinguished Scholar  
Aug 2021 - Dec 2022

B.A. in Cognitive Science  
Certificate in Design Innovation  
Aug 2017 - May 2021

## Skills

UX Design, Interaction Design, Visual Design, UX Research, Illustration, Photography, Videography  
Figma, Adobe Suite, Webflow, HTML/CSS, Fusion 360, Arduino, Raspberry Pi, Processing, Python, Java

English, Mandarin



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Maya is a San Francisco-based designer who is passionate about empowering and uniting communities through design. She most recently interned as a UX Designer at Cisco Meraki, and will be receiving her Master of Design degree from UC Berkeley this December. Her creative sweet spot lies at the intersections of communication, storytelling, critical making, and human cognition. A former competitive badminton player for Team USA, she now dedicates her free time to visiting bookstores, recreating meals from her childhood, and taking her camera on long walks around SF.

