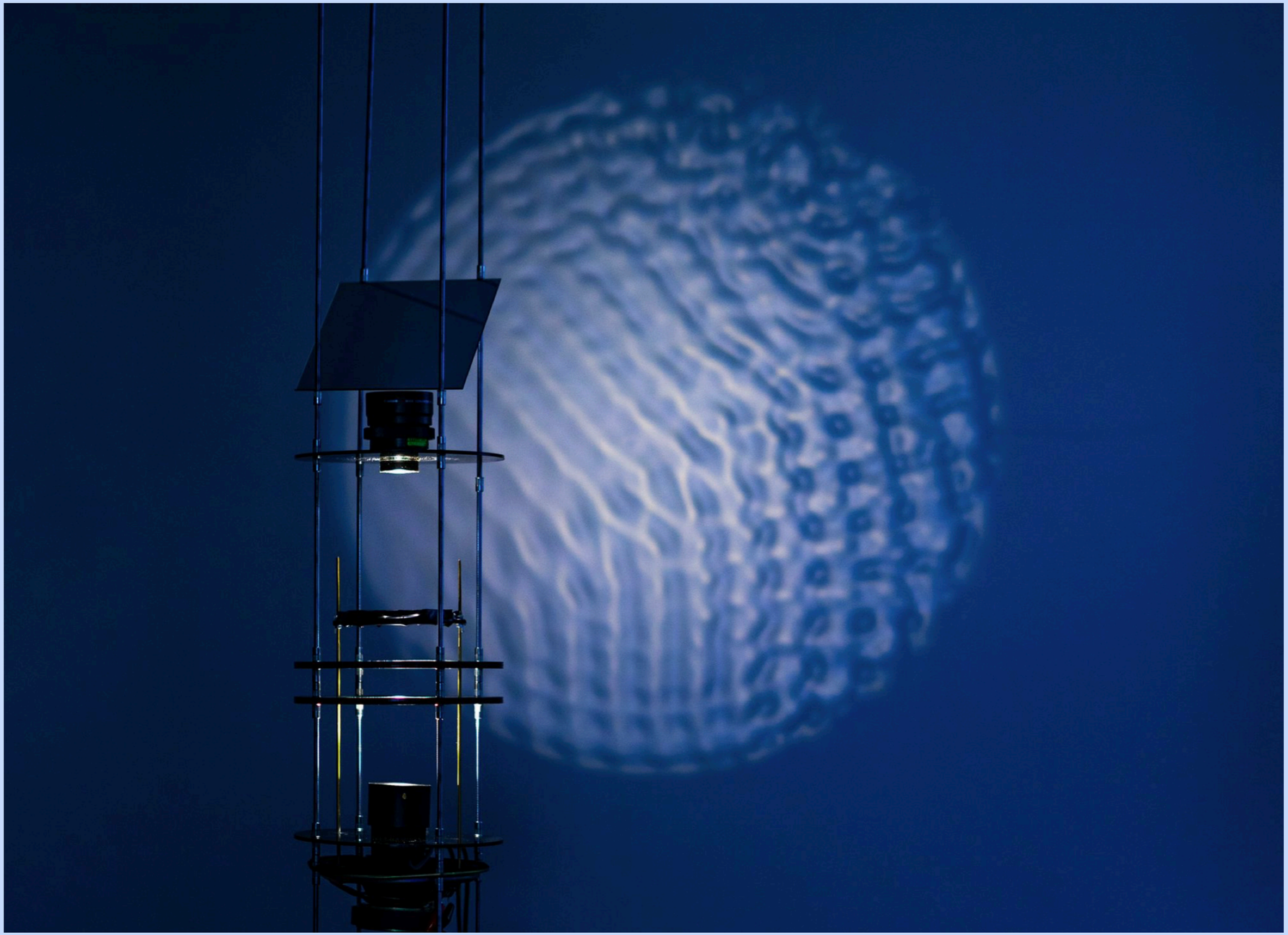
Cymatic Projection
2021, Royal College of Art
Sculpture

AI driven voice assistants have led to audio becoming an increasingly common surface in which we interact with technology. The audio is often accompanied by a visual component such as LEDs. This project explores the use of a cymatic projector to create a more expressive audio visualisation that integrates better into the environment it is in.

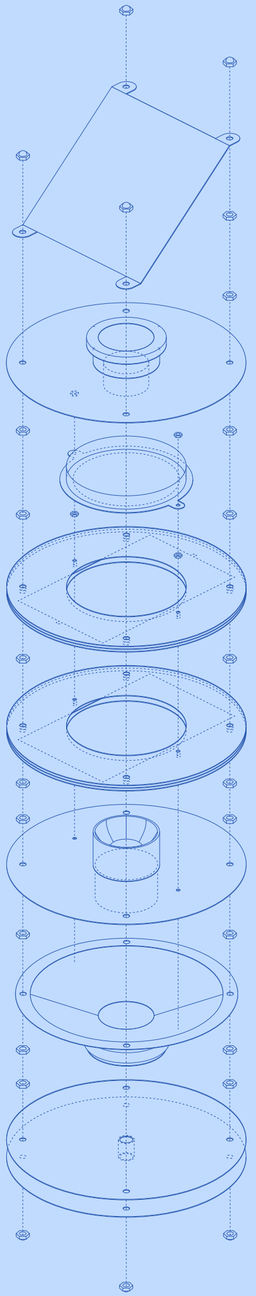
Cymatics are patterns formed on the surface of a vibrating liquid. By projecting and focusing light through this liquid, the patterns can be displayed as an image on a two dimensional surface.

The project was shortlisted in the 2021 OPPO Renovators Award.



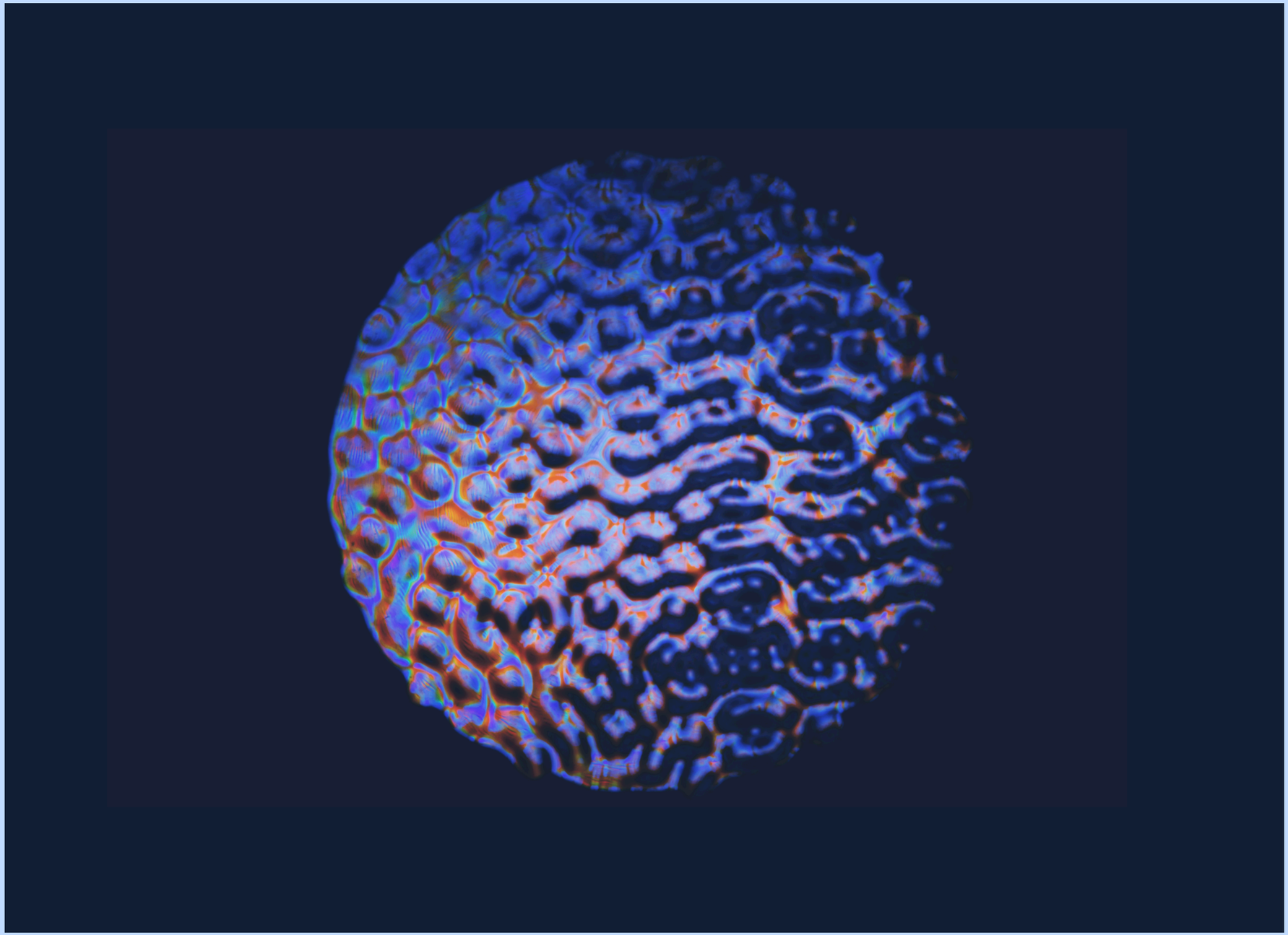
Cymatic Projection
2021, Royal College of Art
Sculpture

The lenses, mirror and speaker and positioned using a collection of laser cut acrylic pieces. This design ensures that the precise alignment needed for a clear image is met while also allowing for adjustments in focus to be made.



Cymatic Projection
2021, Royal College of Art
Sculpture

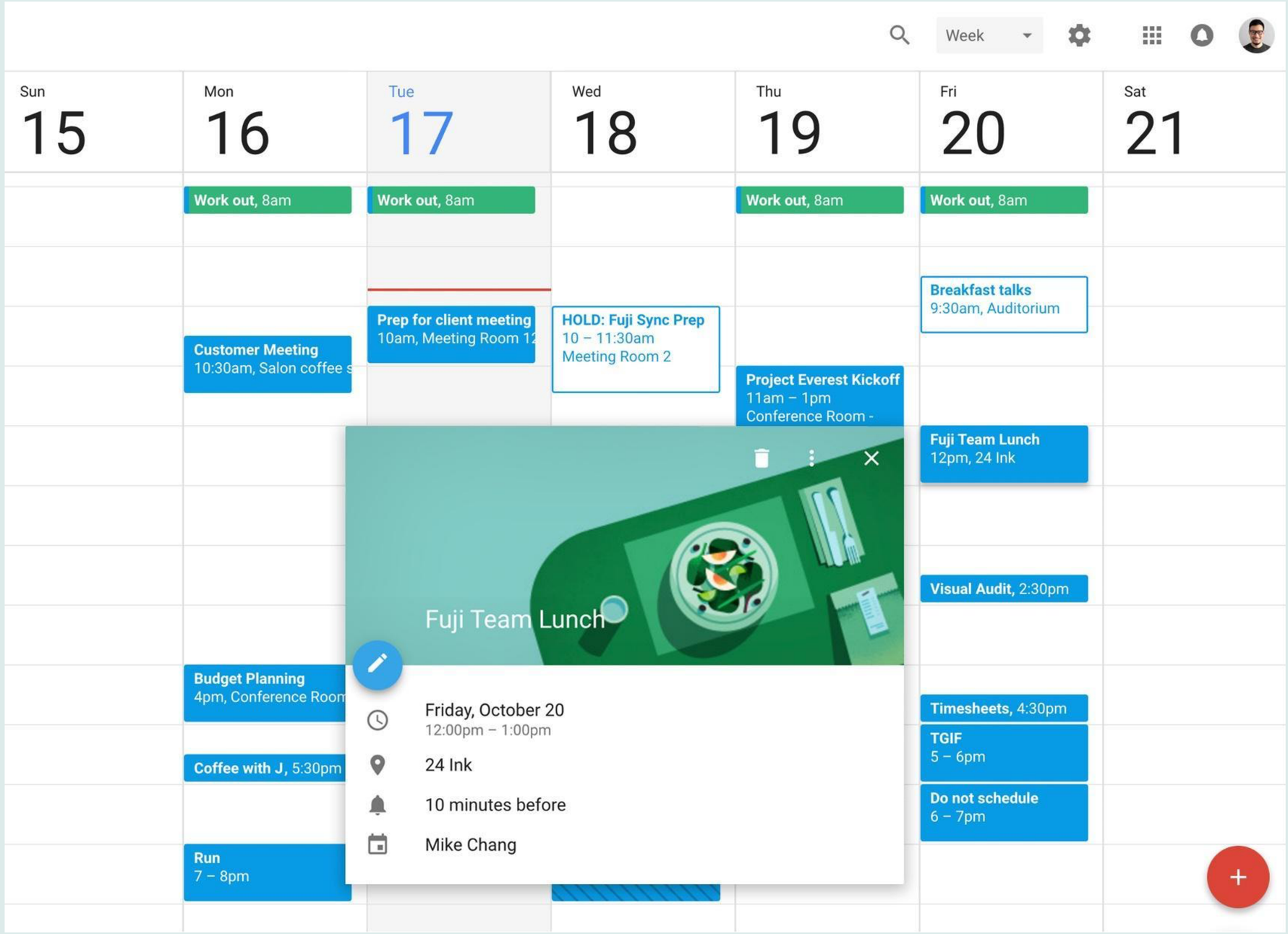
Direct capture of the image through a camera allows for live visualisation in demonstrations where a projection surface is not available.



Google Calendar
2016 - 19, Google
Software Engineering

As a Software Engineer, I was brought on to the Calendar team to help develop a critically acclaimed redesign of the web client. In that time, I led projects, spearheaded accessibility efforts and worked closely with Product Managers and UX Researchers to develop a product that provided clear improvements for all of the hundreds of millions of people who use Google Calendar.

Please get in touch for further details.



Night Lights
2020
Digital Art

Night Lights is a piece of art exhibited as part of Shibuya Pixel Art 2020 in the Shibuya Hikarie building. Inspired by the lit streets of Shibuya it was an effort to bring influences from constructivism and concrete art to the genre. For this it was highlighted by pixel art “godfathers”; german design studio eBoy.

Attune
2020, Tokyo University
Research

Attune is a project that part of the DLX Design Lab at Tokyo University. It seeks to increase accessibility of capillary microscopy. Whilst at the Design Lab, I worked on the automation of the system, introducing Neural Network based Object Detection models and edge hardware and algorithms that are currently being patented by the university.

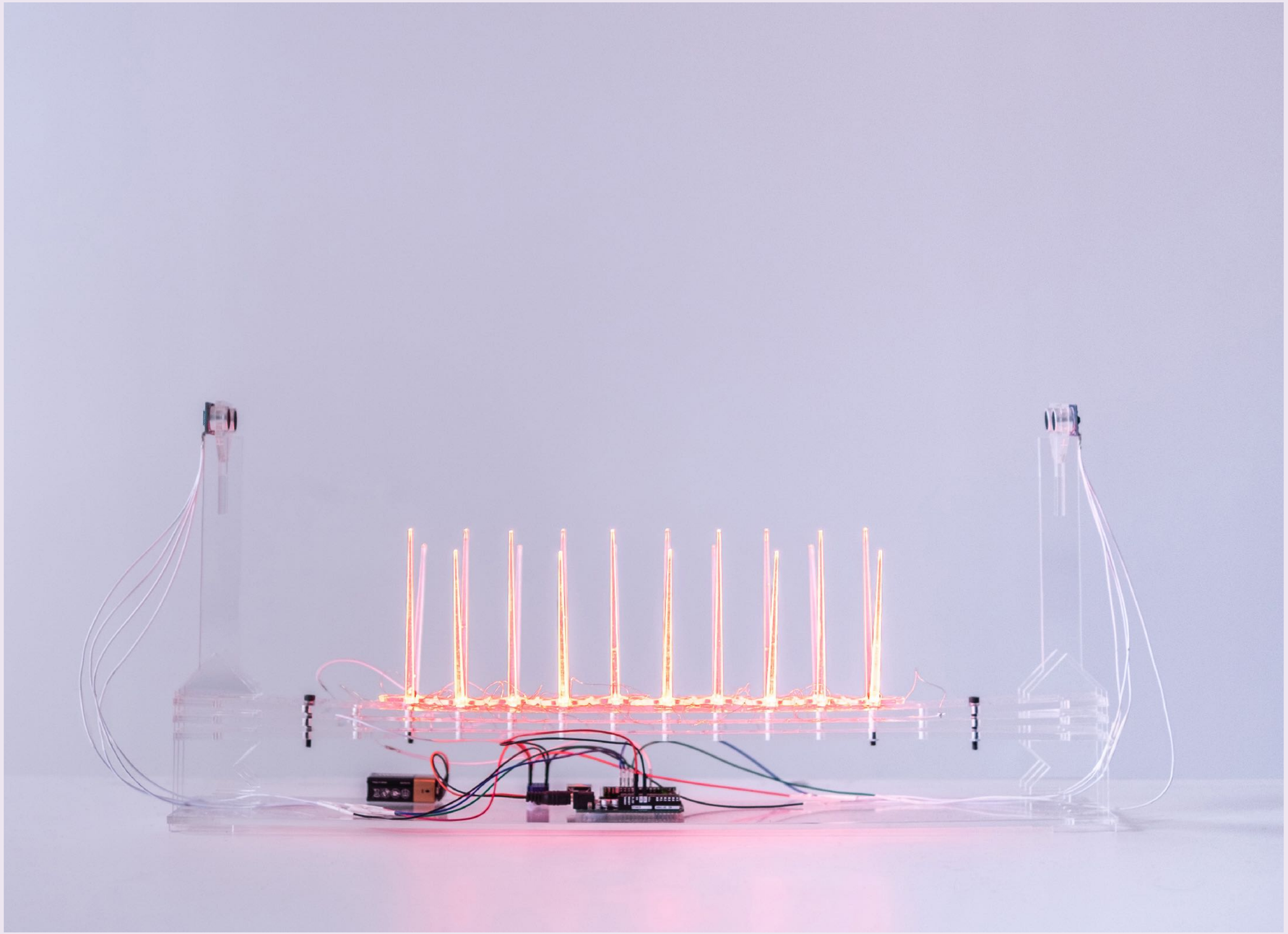
Please get in touch for further details.

Attune Project
血管の音色プロジェクト

Do Not Touch
2020
Sculpture

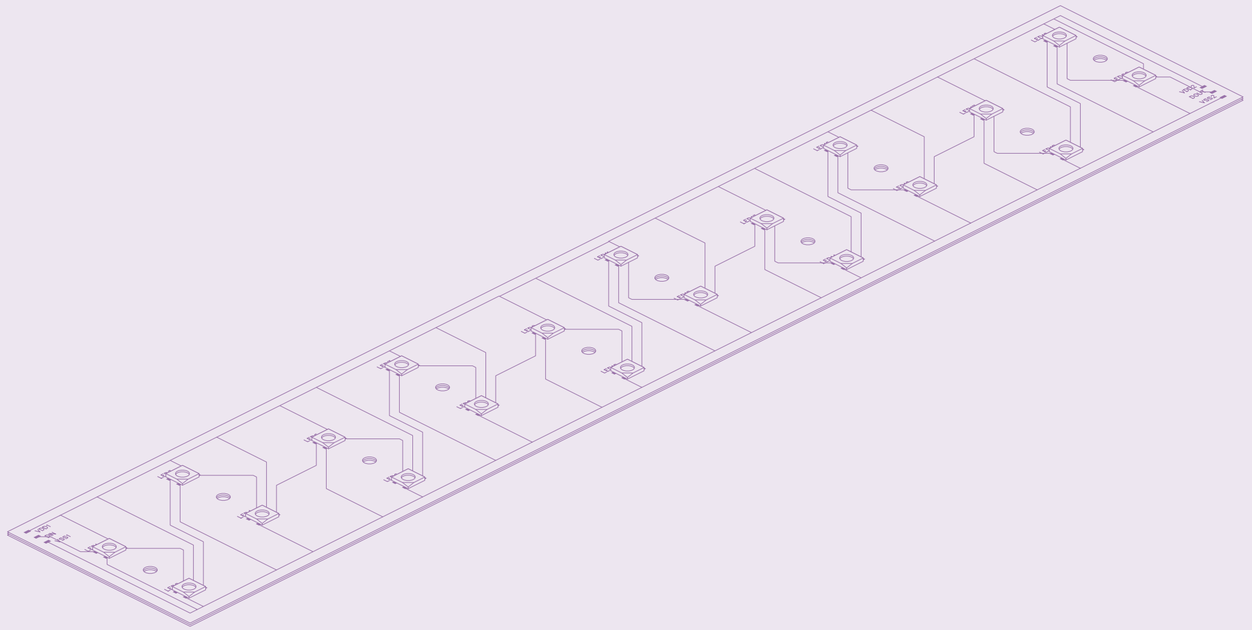
Do Not Touch is an interactive light piece built using ultrasonic sensors, a custom PCB and Arduino.

The piece is built around a set of plastic anti-pigeon spikes, to interact with the piece, the user must gesture above the spikes, the LEDs below responding to the location of their hand.



Do Not Touch
2020
Sculpture

The project was built around a custom designed PCB manufactured using a pick and place machine for precise component positioning.

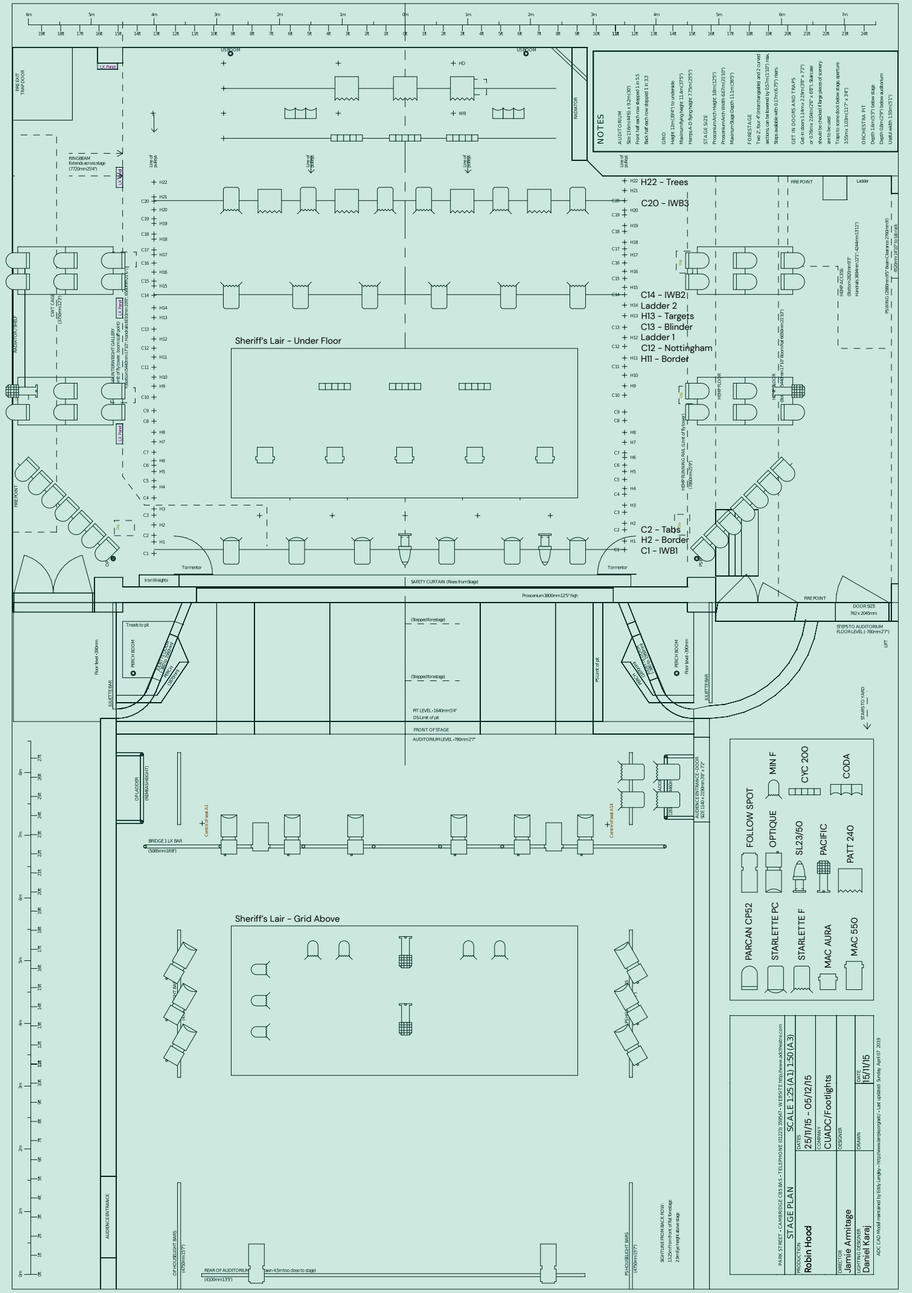


ADC Theatre
2014 - 2015
Lighting Design

Whilst at the University of Cambridge I worked as a lighting design at the theatre. My focus was on creating graphic, striking scenes with vivid colour over realism. I worked with stage designers to realise ideas including real rain and lights built into hung platforms.

ADC Theatre
2014 - 2015
Lighting Design

Technical drawings were produced to construct and communicate complex stage and lighting concepts.

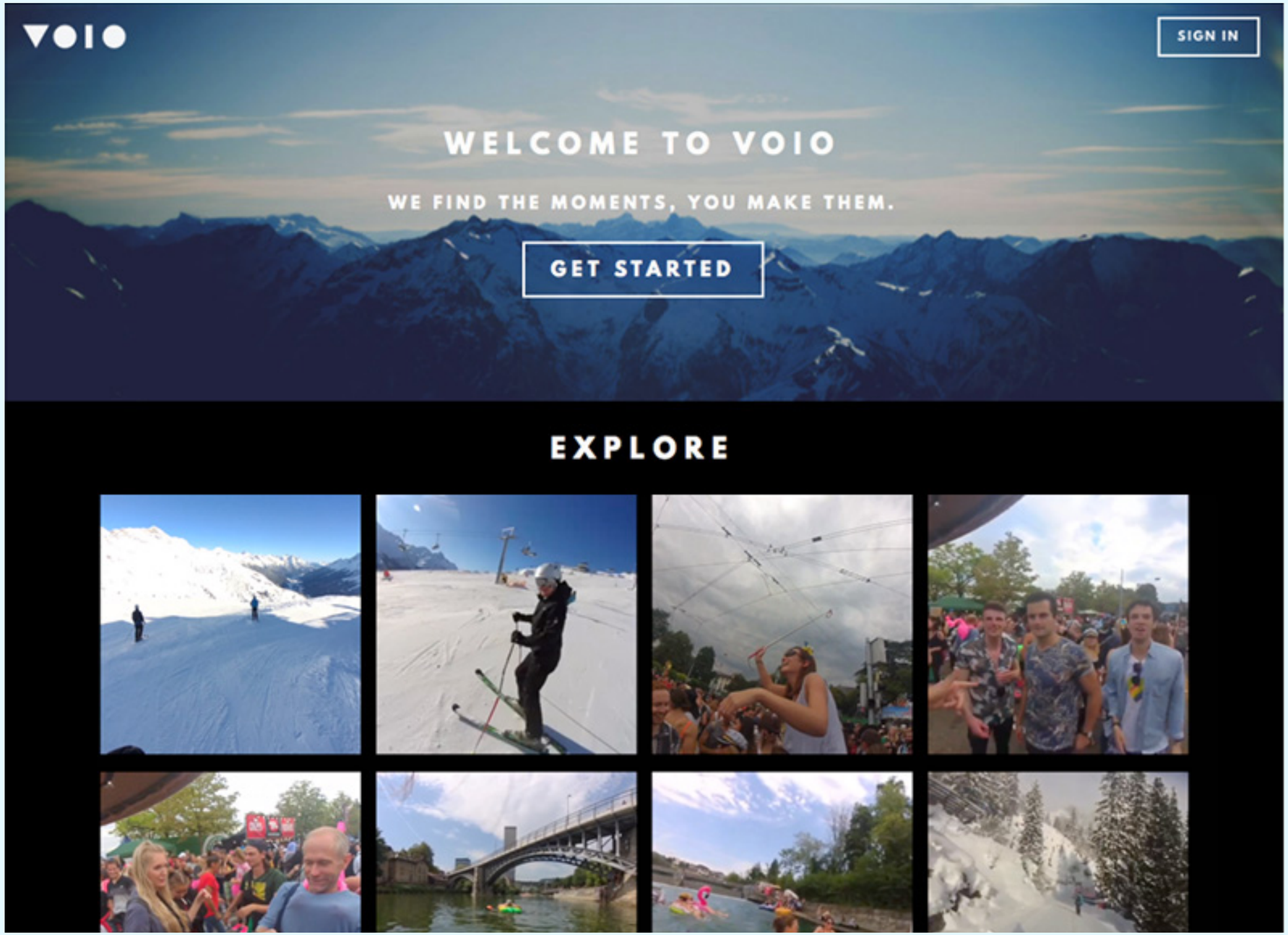


Voio
2015, University of Cambridge
Software Engineering

Voio was a web service built using NodeJS and OpenCV to find two second “moments” in long video clips. Users were able to upload videos from GoPros and other life streaming devices and using computer vision Voio would identify the most interesting sections of film and surface them for sharing.

In addition to working on development, I coordinated the project as project manager.

The project won the undergraduate group project award for “Best Commercial Project”.



Amplify
2020, Pratt Institute
Product Design

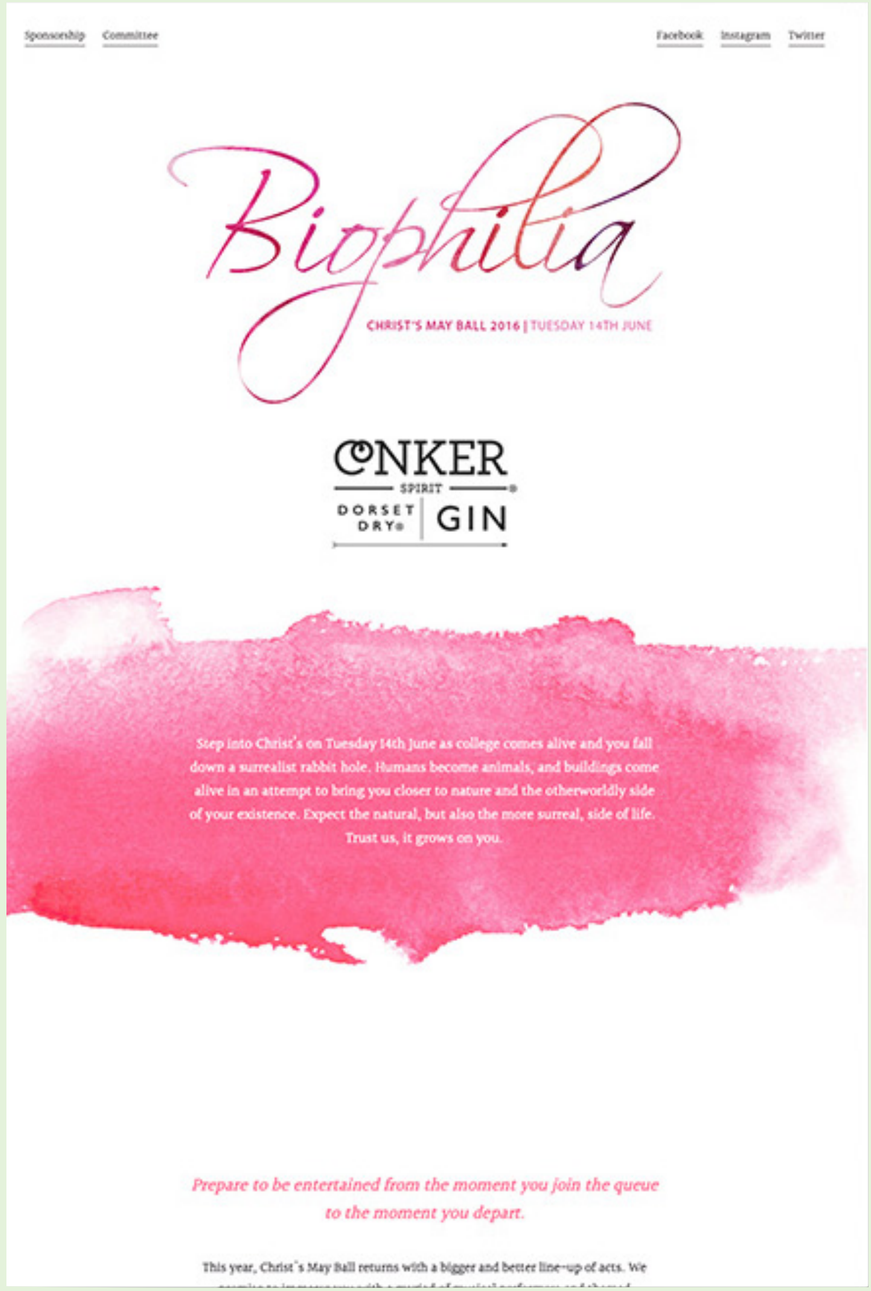
Amplify is a recording and playback device for children with selective mutism. I developed Amplify whilst at the Pratt Institute of Design in collaboration with mental health charity NAMI.

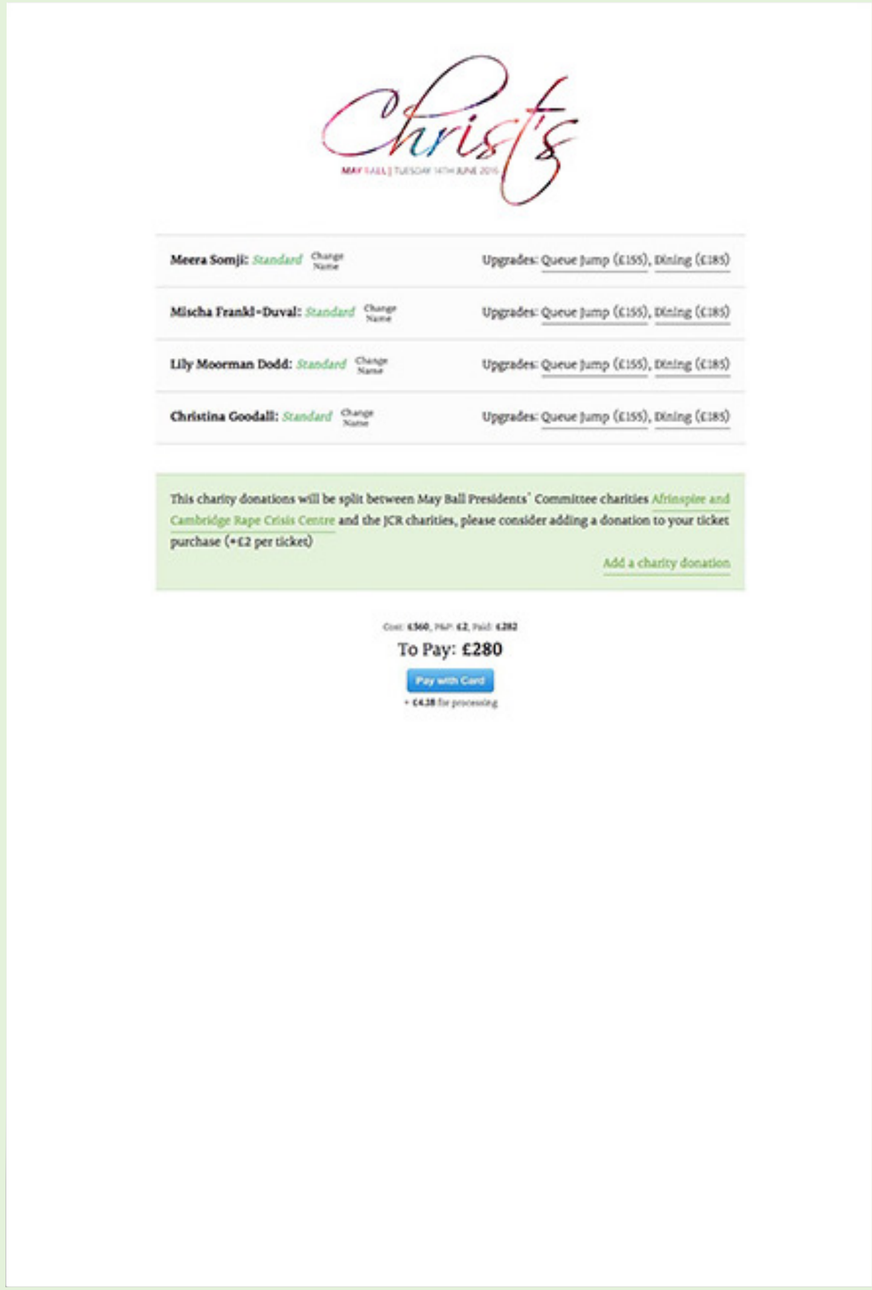
The process began with a review of NAMI interviews and articles followed by ideation and regular review with NAMI representatives.

Selective Mutism is an anxiety disorder where children are unable to speak in certain social situations. The final design is a customisable avatar which allows children to record their voice in a safe environment and play it back; ensuring that their needs are always met.
The repairable design consists of a wooden shell and common electronics.

May Ball Ticketing System
2016, Christ's College
Software Engineering

In my final year of university, I was on the committee for my college's biennial ball. In my position as webmaster and head of ticketing, I built a Django based ticketing website with Stripe integration which allowed for easy ticket purchasing for over 1400 guests with page response times of under 10ms at peak load. For entry on the door I connected six barcode scanners to Nexus 7 tablets using USB OTG running a custom Android application and connected to a local network to allow entry using NFC and barcoded tickets. My system halved the total time taken to admit our guests.





Eggriculture
2021, Imperial College
Speculative Design

Eggriculture is an exploration into the use of household chickens and eggs as bioreactors to reframe lab grown meat.

Developed in consultation with cellular agriculture startup Hoxton Farms, Eggriculture is a proposal in which cultured meat is incubated using household chickens in a consumers garden. Unfertilised eggs are given transformation factors to induce pluripotent stem cells and then growth factors to guide the cells into producing a portion of steak, bacon or other meat following a 3 week incubation period underneath a brooding hen.

The proposal has three aims, humanising lab grown meat, reducing some of the economical concerns by leveraging experience design principles and aligning lab grown meat with the home grown movement.