

Marguerite Tricaud

Portfolio 2021

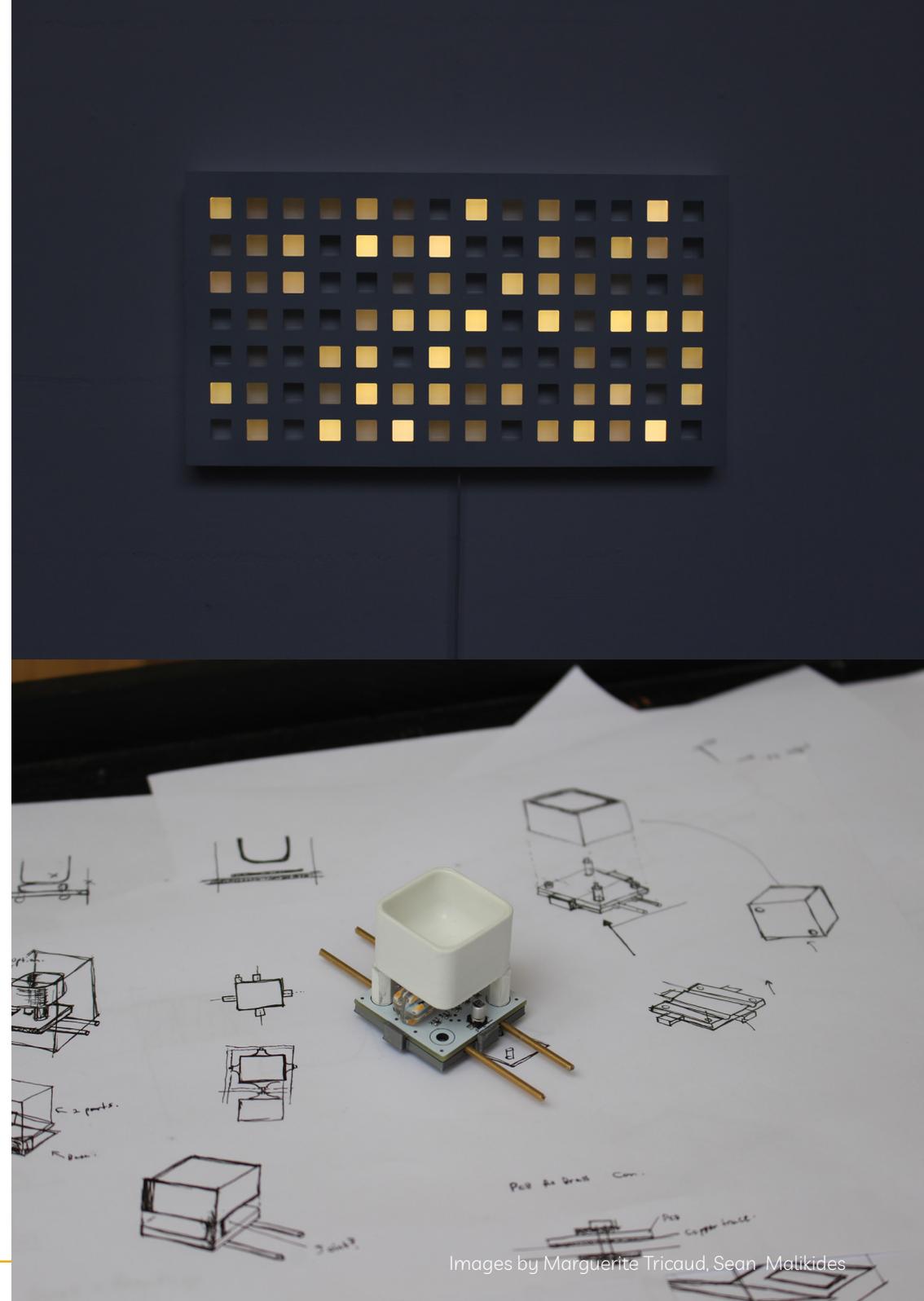
Creative Direction

Sinusoidal Noise

A study of motion in sinusoidal chaos

In collaboration with the creative team at Kai Lab, I developed the design of this wall-mounted light piece from concept to production. While overseeing the visual aesthetic and visitor experience of the artwork, I designed the entire mechanical assembly, taking into account the strong spatial constraints and electrical requirements.

Sinusoidal Noise is a modular light installation that uses random oscillating patterns to create a larger sense of movement. The work comprises 98 pixels each of which fades on and off at a unique frequency. These slow, detuned oscillations create the illusion of shapes emerging, where light appears to pass between pixels as they move through different phases. The light pixels are rounded vessels that fill up with light bouncing uniformly on the internal walls. The visitor is unable to see any source of light, edges or depth within the pixels. When the light fades out, the pixel disappears as the eyes look into an empty space.



Honami

Modelling the dynamics of wind

This kinetic sculpture representing the effect of a wind-blown field of grass is one of the first projects I worked on as part of Kai Lab in 2018. My spatial design skills and experience in media production led me to oversee the filming and photography shoot of the artwork at Ugly Duck. I also took part in designing the layout of the artwork and helped with the installation when it was shown at Theatre Deli in 2018.

Honami is named after the phenomenon of the wavelike patterns that are formed in a windblown field of grass. This modular kinetic sculpture creates a quiet sense of calm as it moves gently back and forth, and it forms part of a study into how patterns of movement from nature affect an indoor space. The sculpture is flexibly constructed so that modules can be spaced at varying distances and mounted in a range of locations.

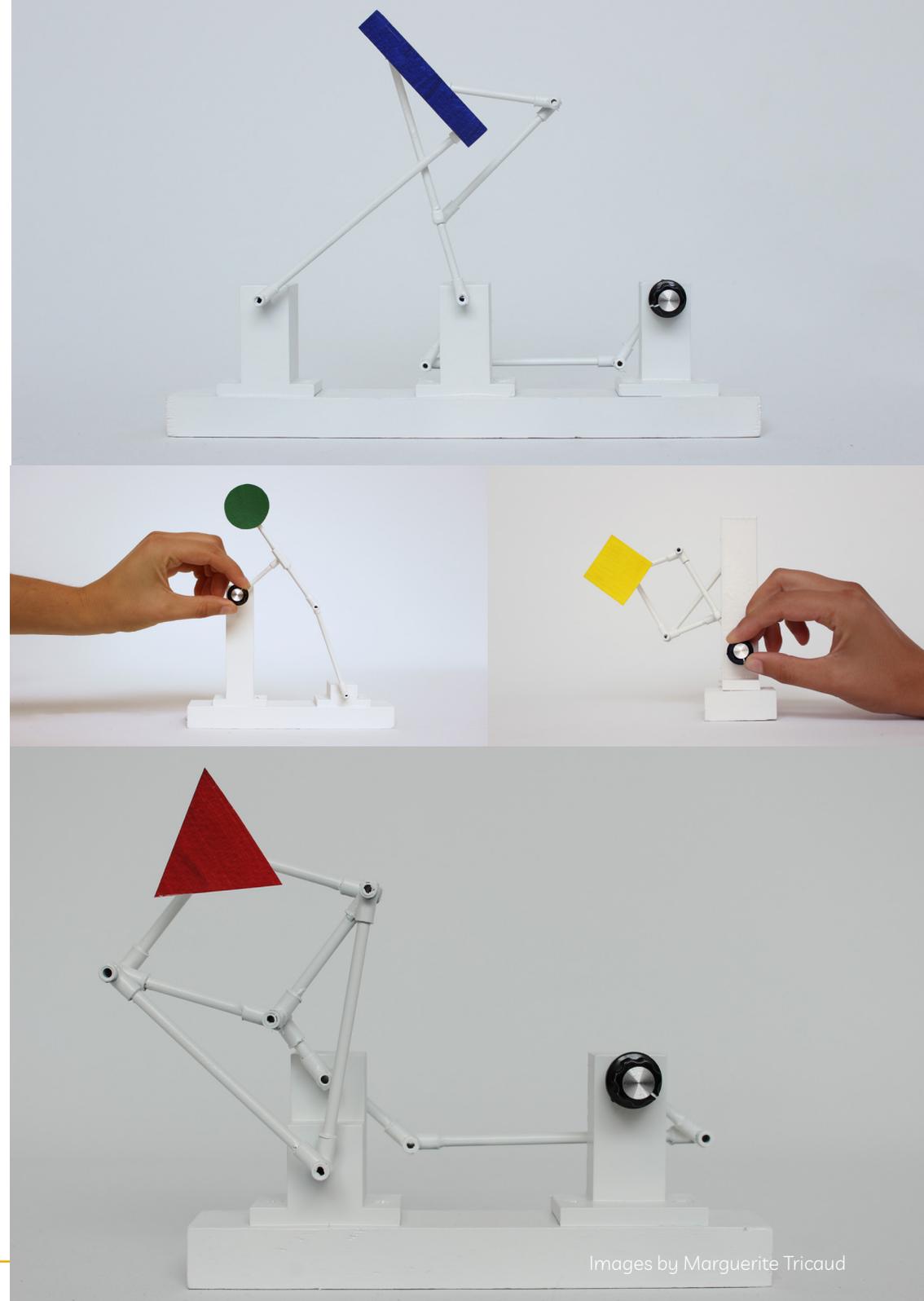


Mechanism Mondays

Playing with the sonic personality of kinetic objects

During the 2020 lockdown in London, Kai Lab focused on developing pieces that could be experienced online. We worked on a series of videos to be shared on social media every Monday for a month. I collaborated on the concept development and directed the visual design of the films. I also filmed, photographed and edited all the media for this project.

This series of mechanical objects is inspired by the work of Kandinsky and explores ideas around synaesthesia, testing the effects of sonic personality, motion, colour and shape on how one experiences an object. The devices are composed entirely of 2D bar-linkage joints, which each offer only one degree of freedom in their movement. Combining the joints in a variety of configurations allows complex patterns of motion to emerge from the objects, giving rise to specific personalities and behaviours as the objects come to life.

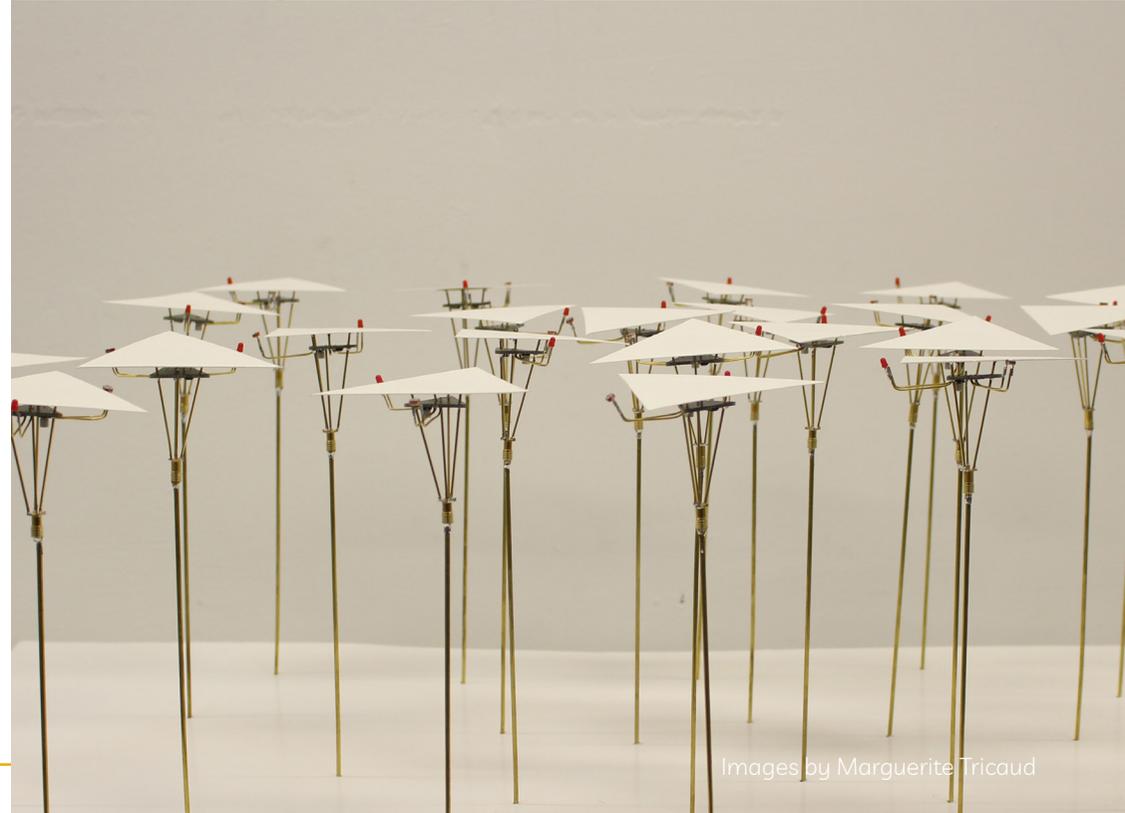
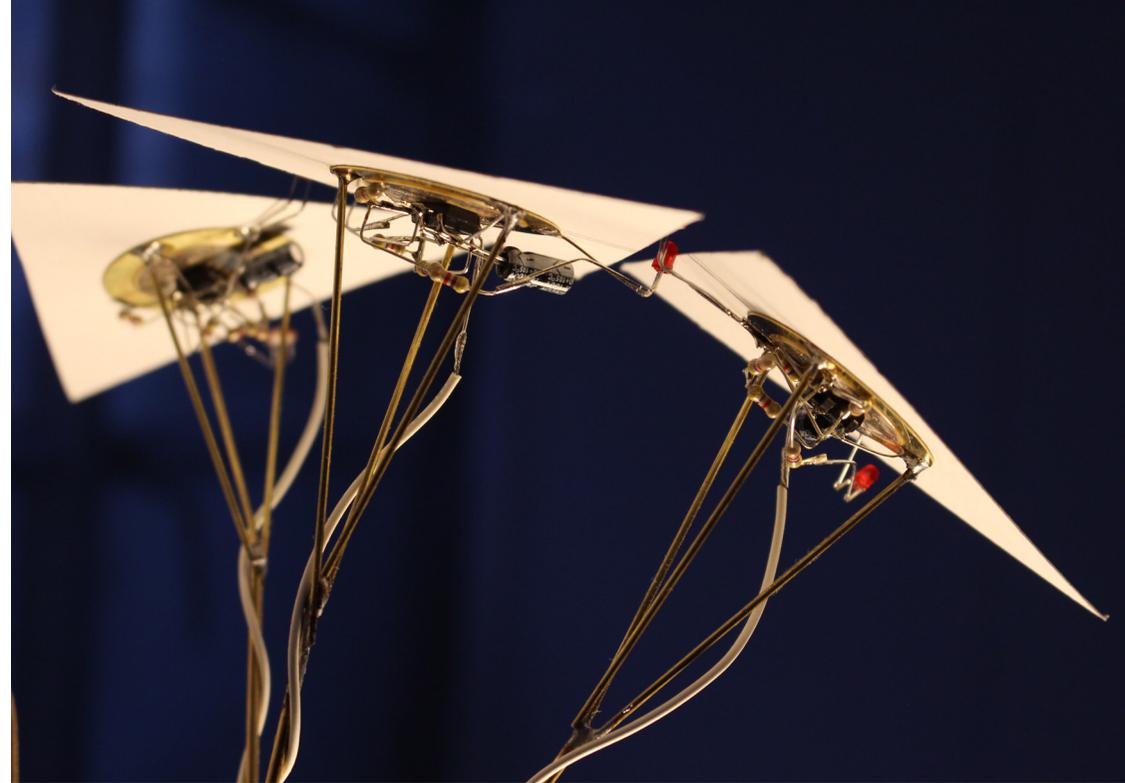


Clickers

Exploring coincidence and emergent behaviours

I develop what initially was a small shelf prototype (first image) into a large scale sound installation. I re-designed the entire electrical and mechanical assembly of the modules to allow for the production of hundreds of them (second image), while keeping the raw and delicate visual quality of the first design iteration. I am now working to bring this artwork into Kai Lab's first solo show in 2022 as an immersive space with controlled lighting generating an ever-changing soundscape.

Clickers is an installation that experiments with our relationship to coincidence. It is an ecosystem comprised of hundreds of individual, independent modules that click in response to light. If a light is shone brightly on a module, it will click more rapidly. In the dark, the sound is sparse. Although each of the units responds almost identically to light intensity, when they are distributed across a space, their individual experience of the light creates a polyrhythmic soundscape.

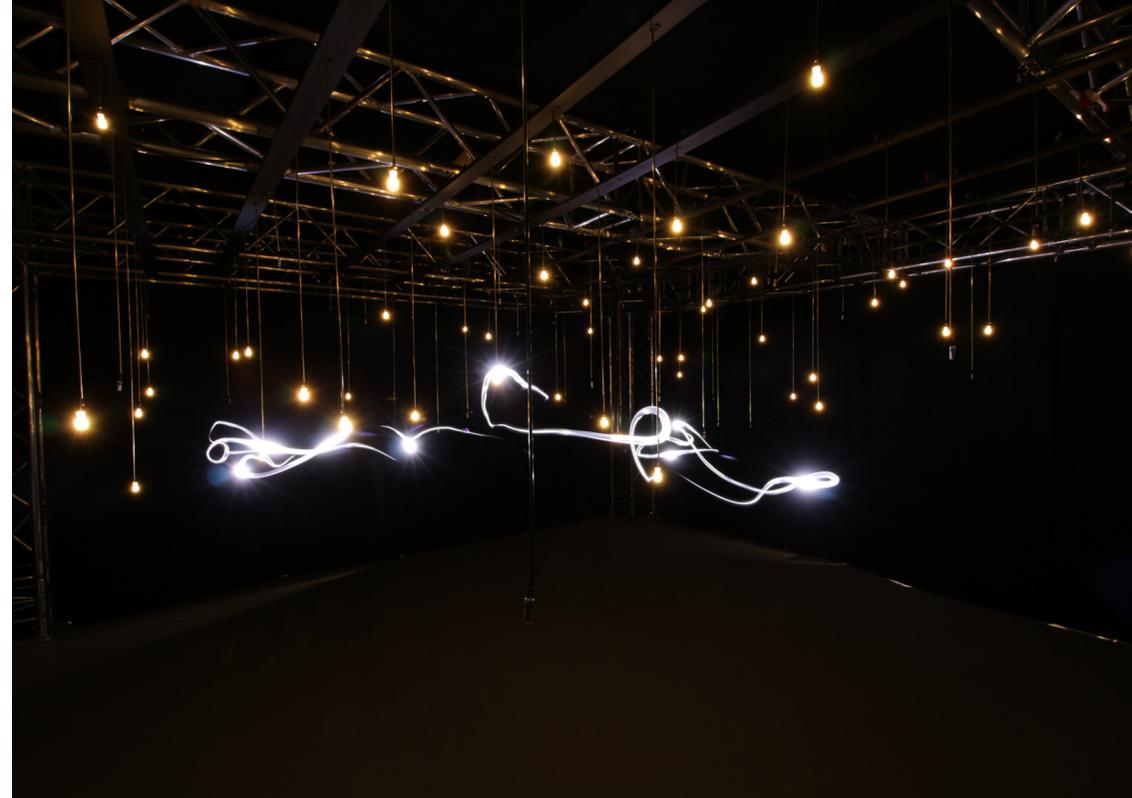


Light Follower

3D drawing with light

I created this piece in collaboration with Sean Malikides for an event held at the Bartlett School of Architecture in 2018. With restricted budgets and timelines, we designed a modular system made of hundreds of lights modules, each with an individual sensor and actuator system. As well as designing the layout and hanging system, I was in charge of fabrication and installation of the artwork.

Light Follower is an interactive installation in which the audience generates their own light drawings in three dimensional space. Visitors are invited to shine torches at the sculpture, which instantly responds by capturing and emitting these traces of light for a few seconds. The character of the piece evolves over time with user interaction and generates an ever-changing light show..



Sounds Insects

Musical emergence in self-organising systems

I created this piece as part of my Master's project at the Bartlett School of Architecture in 2018. This installation was part of a larger research project exploring the potential of self-organising systems for immersive and generative artworks. I thought and designed all parts of this project, from the initial concept to the final installation shown at the WIP show, through prototyping, 3D design, electrical and firmware design, lighting and sound design.

Sound Insects is a self-organising sound system. It is comprised of multiple identical independent modules that interact with each other through sound and attempt to create ordered musical patterns. Each sound module is fitted with a microphone and a speaker that allows them to interact with each other. They are mounted on hooks and hang from a mesh canopy, so that members of the audience can pick them up and move them around, effectively re-organising the emergent sound performance.



8 Ropes

A tangible musical instrument

As a spatial designer and musician, I've always been interested in bringing more physical awareness to the production of digital music, both for performers and audiences. *8 ropes* is one of my first investigations into tangible instruments. I developed a sequencer with a ropes interface, inviting players to interact with an analog medium to trigger audio samples. I collaborated with a contemporary music composer to create the musical score and samples for this piece.

8 Ropes is an audiovisual interactive installation using travelling waves on ropes to create a tangible link between performer's gesture and sound. The physical impulses are created by the performers at one end of the rope and travel through the space in a visible wave until they reach an amplitude sensor at the other end of the rope. The amplitudes are sent from Arduino to Max Msp, which is linked to Ableton Live to trigger sound samples.



Creative Technology

We Live in an Ocean of Air

Marshmallow Laser Feast

For this piece, Kai Lab worked in collaboration with Artists & Engineers to develop electronics to achieve real-time breath and heart rate monitoring. The data collected from this bespoke system is fed back into a generative graphics engine to affect various elements of the virtual environment. I worked as part of the technical delivery team through two design iterations, working on the electrical fabrication and mechanical assembly of the units.

We Live In An Ocean Of Air is a virtual reality world created by Marshmallow Laser Feast. It was first exhibited in 2018 at London's Saatchi Gallery. The VR setup allows multiple people to simultaneously explore a futuristic sequoia forest that evolves throughout the experience. A bespoke sensing system is attached to an HTC Vive Pro virtual reality kit allowing users to sense and visualise one another as well as their own breath and heartbeat.



In An Ocean Of Air
Marshmallow Laser Feast, Saatchi Gallery, 2018



MLF, 2018

Images by Marshmallow Laser Feast

PUSHMI PULLYU

Hyphen Labs

For this piece, I collaborated on the development of a motion control system using an array of distance sensors that was retrofitted on to a set of Roombas. I designed the circuit board and the entire mechanical assembly for the sensor system. I also wrote the firmware controlling the motion of the roombas.

PushMi PullYu is a piece by design studio Hyphen-Labs. It is showing as a part of their solo exhibition at Schering Stiftung in Berlin from Sept 12 - Nov 22, 2020.

Seven sensorimotor machines move throughout the space, which is flooded with coloured light. The machines cast varied projections across the walls as they move through what at first appears to be random patterns of motion. Over time, the visitors realise that these beings are responding to their environment, creating an emergent behavioural narrative. The audience finds that they are able to affect the direction of the piece as they become a part of the choreography.



CupCube

Mule Studio

For this project, I collaborated with the technical director at Kai Lab to design and produce the hardware and firmware system for the lighting of the pavilion. 32 addressable LED strips, installed in the polycarbonate ceiling above the cup columns, are connected to a main controller playing a series of animations.

Designed by Mule Studio for Hubbub, CupCube is a temporary pavilion setup in front of the Tate Modern near the river Thames and made of 5555 recyclable coffee cups. Passers-by are invited to walk through the installation and experience the spatial patterns created by the repetitive layout of cups lit by an animated LED display.

CupCube was presented on the Bankside from the 20th to the 30th of January 2020.



Bumps Per Minute

Anna Meredith

Kai Lab was responsible for developing a wireless sensing system able to detect collision of bumper cars and trigger audio content in the courtyard of Somerset House. I was in charge of designing a custom PCB and electromechanical assembly that allowed the electronics and sensor to be easily mounted into the dodgem cars. I also developed a Max patch to trigger audio tracks in Ableton Live upon the collision of the cars.

Bumps Per Minute is an interactive installation that reimagines the classic dodgem car ride as an immersive sensory experience. As visitors play, a bespoke sensing system tracks their collisions, which trigger a dynamic audiovisual composition that projects across the space. The installation was developed by Anna Meredith and Nick Ryan and shown at Somerset House in the summer of 2021.



For more information on the projects, please visit : www.margueritetricaud.com and www.kailaboratory.com