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Installation

Stage

Programming

Moving Image

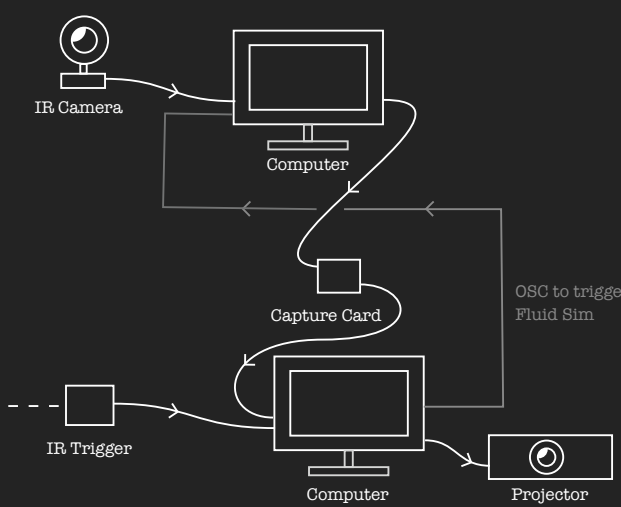
Interactive Installation - Venom at Natural History Museum

For this project, I worked with SDNA to create an installation that would run for 5 months using an infrared camera to drive a fluid simulation that visitors could interact with. As the visitor steps into the path of a infrared sensor connected to an Arduino board, a clip of a spider biting into a skin-like membrane is triggered, ejecting fluid that visitors can move with their motion.

For this project, I used openFrameworks with the addon ofxFlowTools. To colour the fluid, I used a shader to map the brightness values of the fluid to shades of yellow, fitting with the colour specified for the exhibition. I also programmed the Arduino board to send OSC control signals over ethernet.

We used two computers; one outputting the fluid simulation, the other playing back the videoclip in Resolume Arena. The arduino board sends a message over OSC to Resolume which sends a message back to the board confirming receipt, and sends a signal to the oF app to start pulling an image from the camera and driving the fluid.

The two computer setup was chosen to allow the video to keep being triggered if the computer generating the fluid simulation developed any problems, and the fluid simulation could be restarted without interrupting the installation. It was also found to be more consistent and responsive than running the two apps on the same computer and sending the simulation using Spout.



Research for Neuron Circus Show

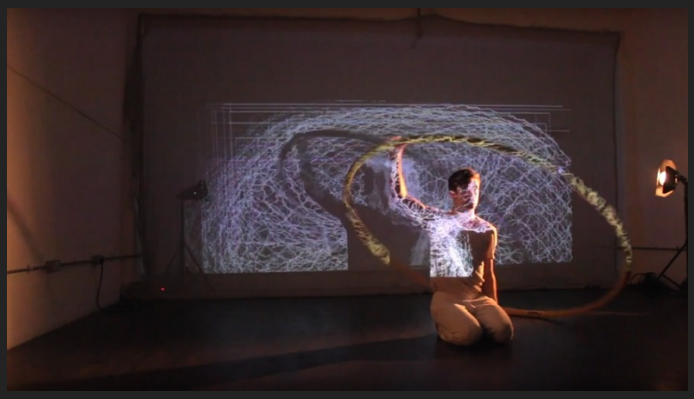
I have been working with cyr wheel performer Jonathan Moss and handstand artist Imogen Huzel on a stage show that incorporates live video, scrim projections and a Kinect camera.

The narrative follows the protagonist's recovery from a brain injury after a traffic accident based on the experience of Jonathan's father.

I used the Kinect depth image to reveal prerecorded video of a short hospital film made during the research period - acting as a metaphor for the brain struggling to maintain a clear grasp on reality after an accident. We also used the live camera feed to explore unusual angles and surreal imagery.

During a research residency at The Oak in Norwich, we found in particular that using a strobe light in combination with this setup yielded a pleasing rolling shutter effect where waves of light would slowly pass over the subject in the projection contrasting with the fast strobe effect on the performer. I also worked with the film director Boris Thompson-Roylance of Deadbeat Films to create a re-enactment of the accident with a Go-Pro and a binaural recording device.








Intergalactic Travel Bureau Stage Show

Guerilla Science Intergalactic Travel Bureau stage show, Audiovisual Design
(Projection, lighting and sound design)

I worked with director Chris Rolls to design aspects of the show including music, sound effects, lighting and projections. During the show itself, I operated the lighting desk, triggered audio for the show, and directed the triggering of bespoke projection design.

The performance followed two space travellers as they visit the moon - personified by aerial performer Empress Stah Power - operate the Mars Rover, explore the possibility of life on Europa with musician Bishi and get sucked into a black hole before escaping to Earth through a wormhole. The venue was Lost Rivers Elephant, a venue made from shipping containers in Elephant & Castle and the show was supported by the Wellcome Trust and UK Space Agency.

Bambula Project

Building The Route Between Me and You, Lighting and Sound Design
Resolution! Dance Festival

This dance project was based around social connections shown through the use of sliding carpet tiles onstage. For the sound design, I drew on noise music, granular and electroacoustic sound, african drumming, minimalism and the harmonic series.

The piece contained a 20 minute music track which was used to give timecodes for the lighting cues. The majority of the music was specially composed by myself for the show with the exception of a short spoken word interlude and a short pop song. Before the performance, I was responsible for setting the lighting states, fade times and timings with the lighting desk operator at The Place.

Bambula Project

Expanding Foam, Lighting Design
Resolution Dance Festival

This was my first project doing lighting design for Bambula Project. The music was improvised by a group of musicians so the lighting cues were based on specific movements in the choreography which was fixed.

The concept of the piece was about the time between dreaming and waking so I tried to use lighting to give a feeling of twilight or night-time. Before the show, I went through the piece with the lighting operator who programmed in the lighting states. During the show itself, I was directing the lighting desk operator to trigger the transitions between lighting states.

Glass Animal

Glass Animal, Director
Longfield Hall, Brixton

In 2015 I directed a dance show based on the production process of glass. I composed the music and performed on guitar with my band Sacrifice and Bliss consisting of a singer and drummer using the following structure for the piece's music:

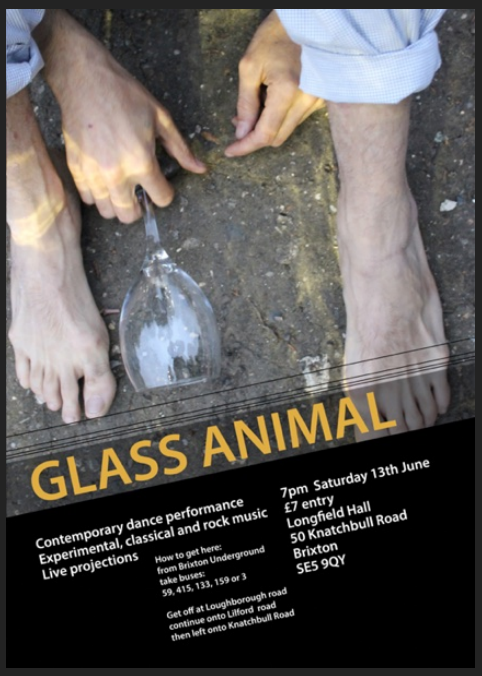
1. glass as grains of sand - pointillistic music, large intervals
2. glass as liquid - minimalist loops, electronic music
3. glass as solid/frozen liquid - drone/noise music, prepared guitar

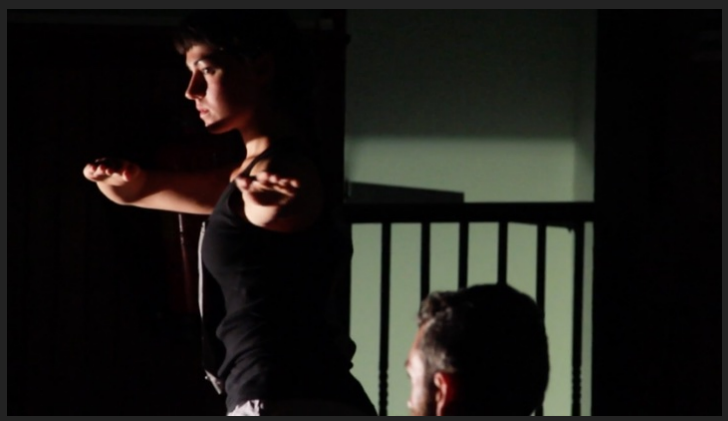
I worked with the dancers of Bambula Project to develop the choreography drawing influence from Anne Terese de Keersmaeker, William Forsythe and Trisha Brown. The choreography also followed the 3 section structure of the music.

In addition to the creation of the piece, as Director, I had various responsibilities:

- Organising rehearsals
- Communicating with the venue
- Designing and distributing promotional posters
- Performing a fretless guitar improvisation to accompany a contemporary dancer
- Organising an opening act
- Accompanying on guitar a singer performing classical Italian artsong
- Hiring and setting up a sound system

The concept for the piece came from a previous exploration into audio-reactive projection mapping onto wine glasses and the resulting caustic patterns.

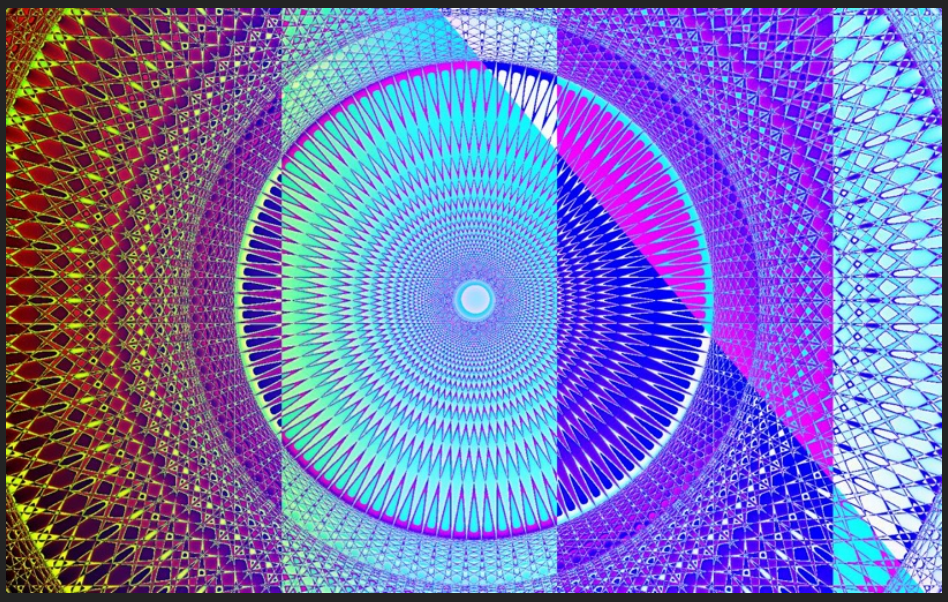


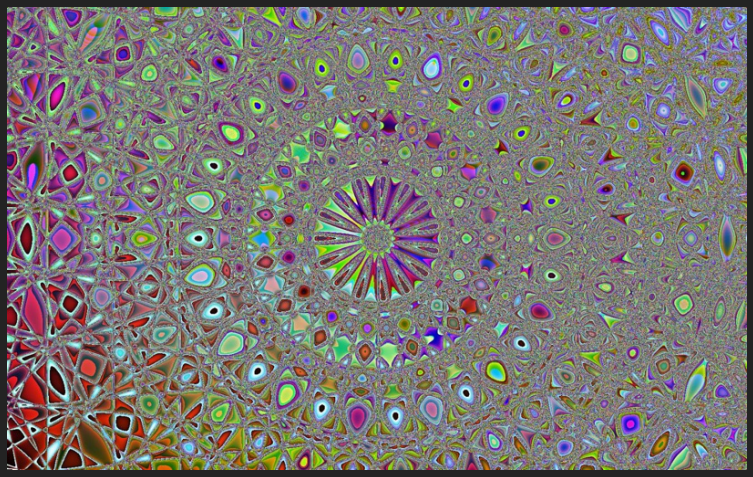


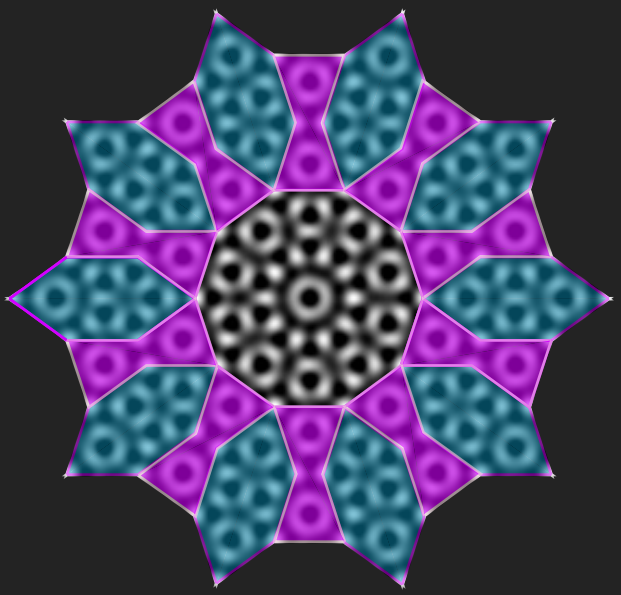
Quasicrystals in openFrameworks

Exploration of GLSL shaders to create patternwork based on Peter J Lu's research into the relationship between islamic patterns and quasicrystals. The quasicrystal is formed of a series of sine waves rotated around a center point and added together.

Variations can be made by changing the number of divisions of the circle and wrapping the colour values for the RGB channels. These visuals were used for live performances supporting Arthur Brown in Morecambe and at VJ London. The animations were controlled with an audio feed from a mixing desk and preprogrammed curves sent over OSC.

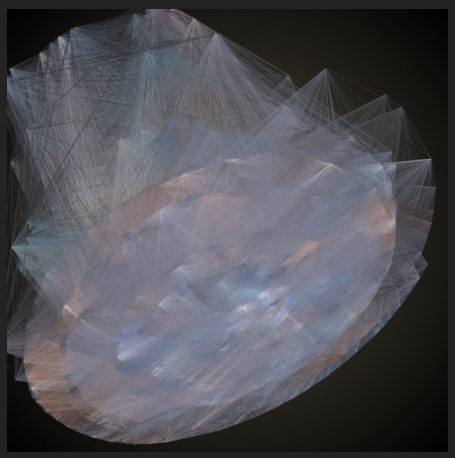


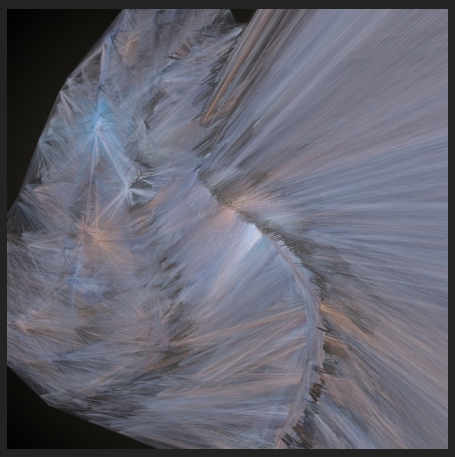


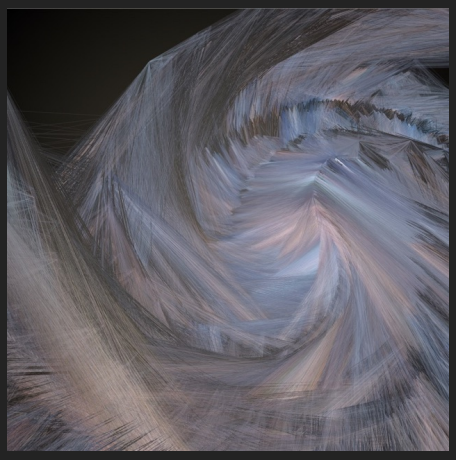


Girih tiles mapped onto a five-fold quasicrystal as in Peter Lu's research

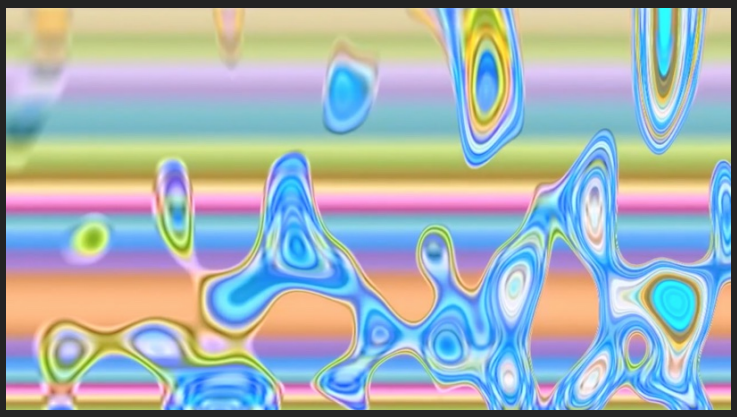
Early openFrameworks Experimentation

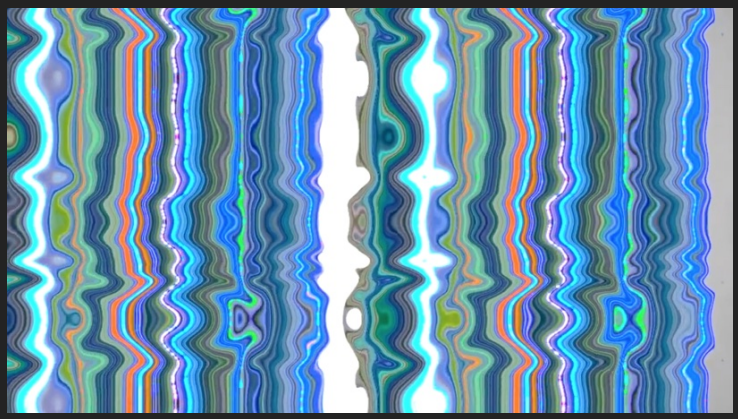


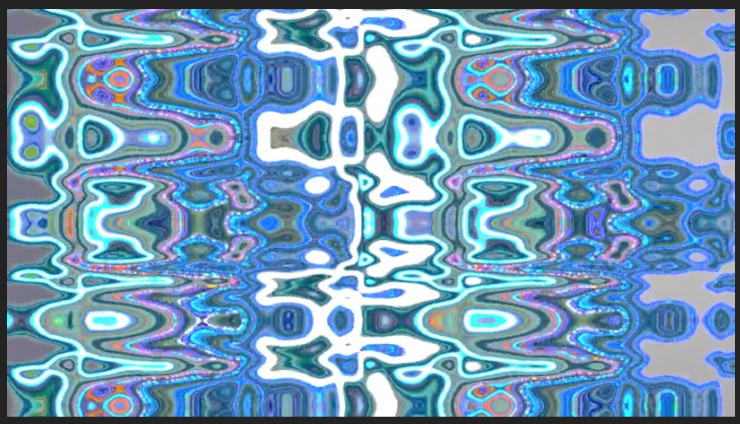




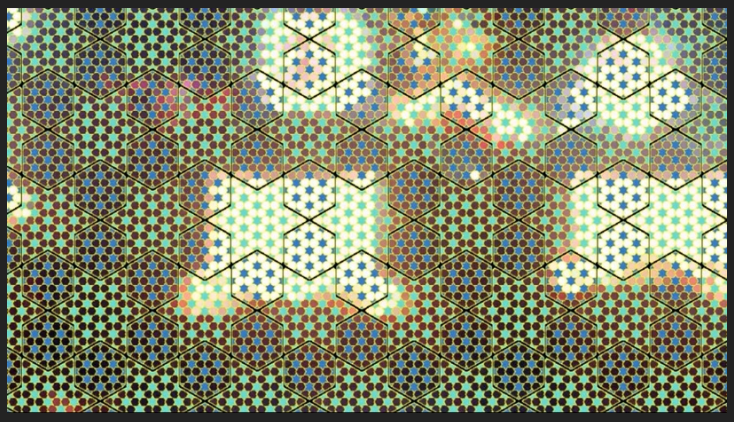
Early exploration with a mesh pulling colours from an image. Sound is used to displace vertices

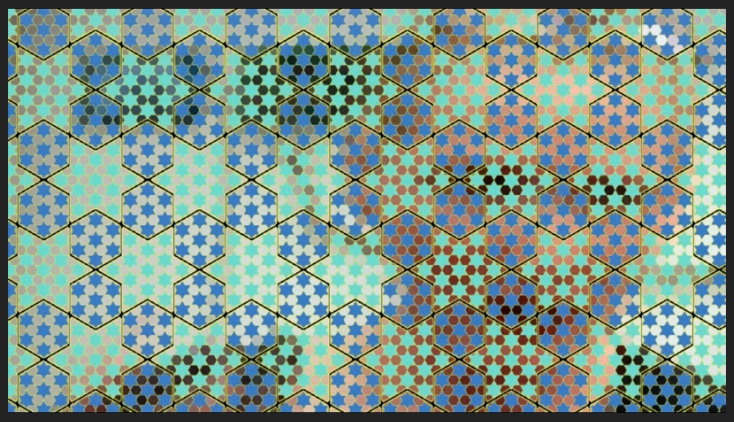






Using Perlin noise to distort images with a shader. The original images were a single row of pixels stretched to fill the screen.





Colouring a hexagonal islamic tiling from India with colours from a webcam/video input

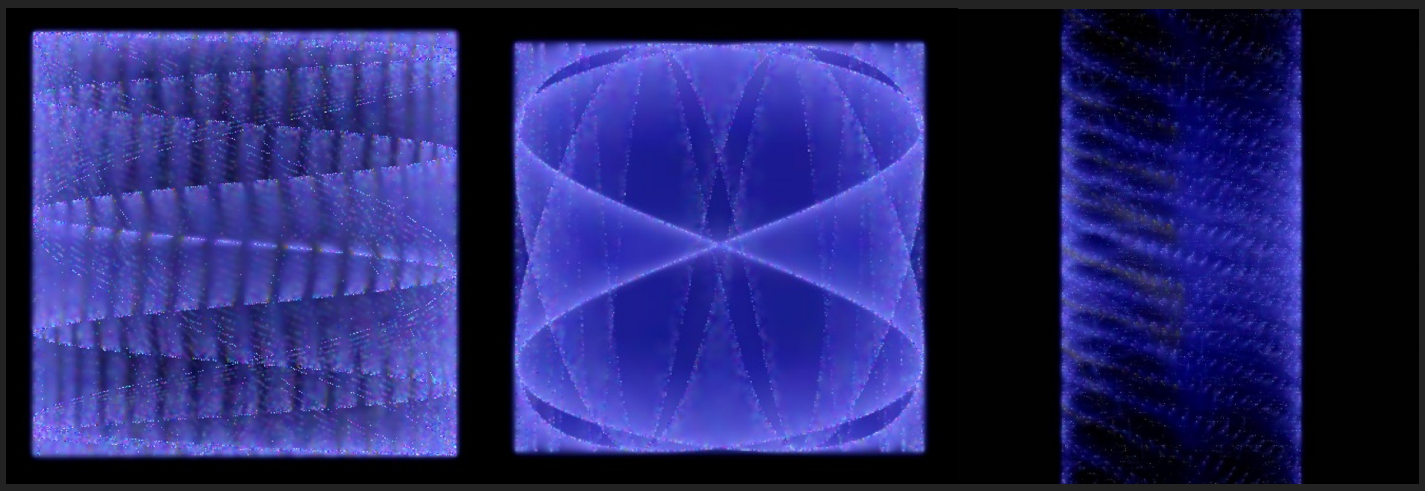
Lissajous Figures in Processing

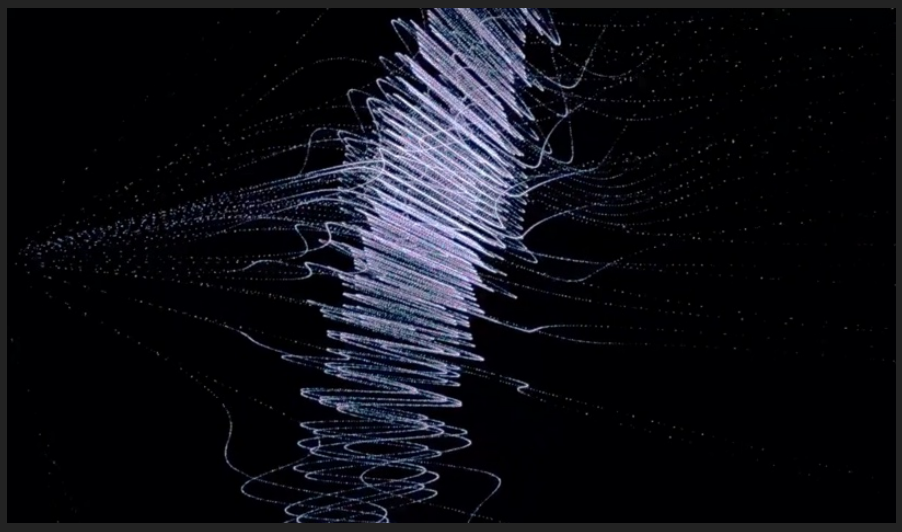
Creating lissajous figure in 2d and 3d space.

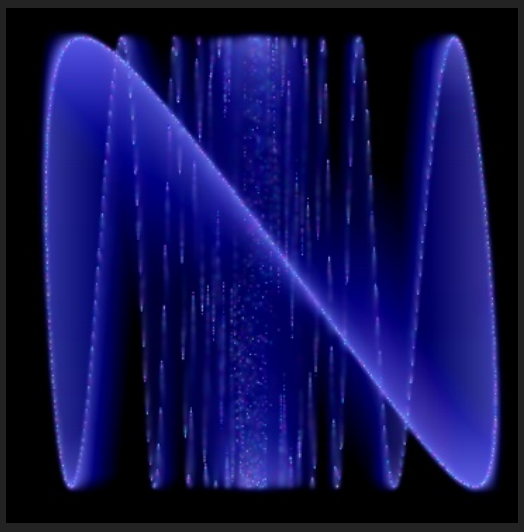
By using different trigonometric functions for x and y, different shapes could be created.

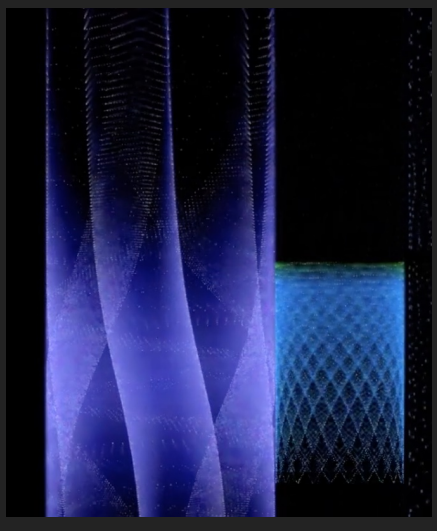
The figures were given texture by colouring the points along the curve semi-randomly and applying a blur to the previous frames.

Layering these figures gives compositions such as the image on the left.







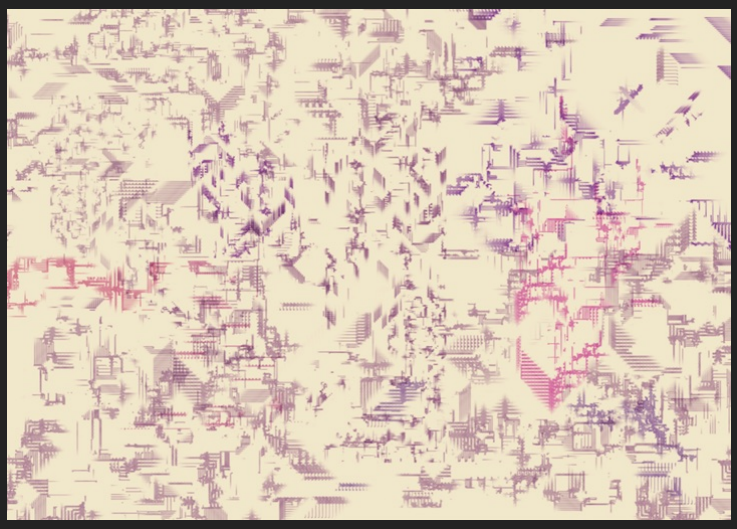


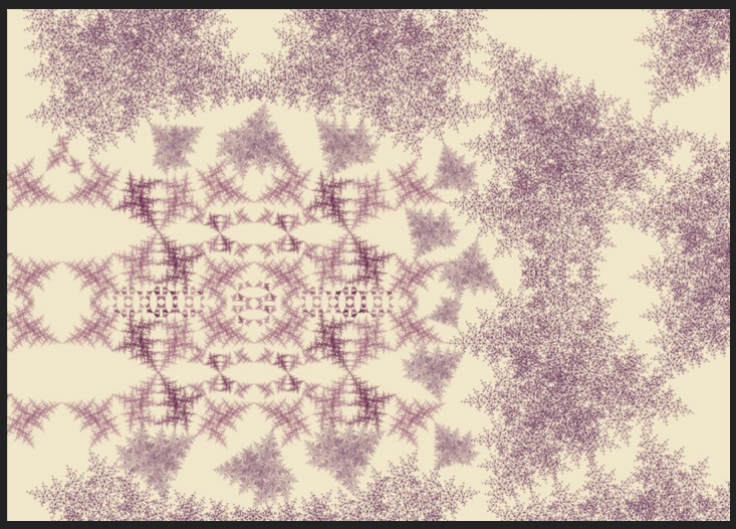
Fractal Wallpaper

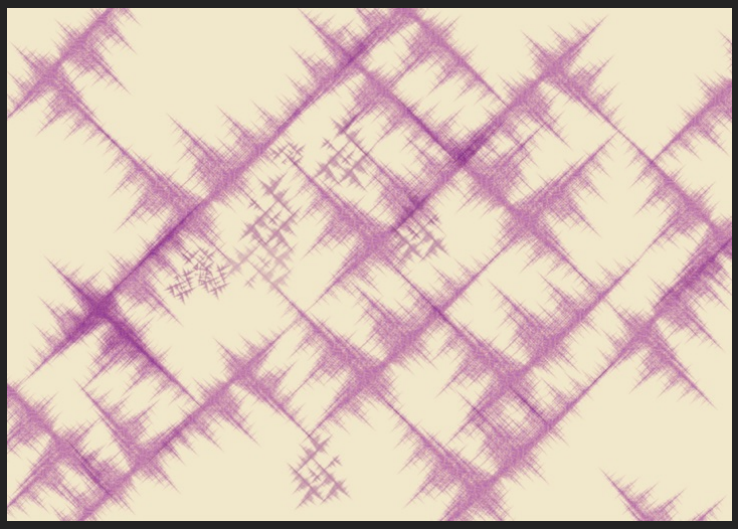
Series of three large format high resolution wallpaper proposals commissioned for a client's home. The designs can be expanded to create non-repeating patterns at different length scales to cover an entire surface.

The top design uses a cellular automaton to create patterns, the resulting images conjure up industrial architecture or forests.

The other two designs use L-systems, methods for creating branching structures named after Hungarian botanist Aristid Lindenmayer.





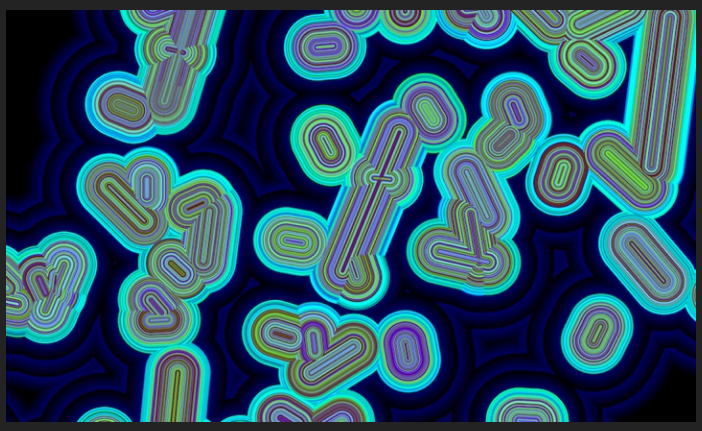


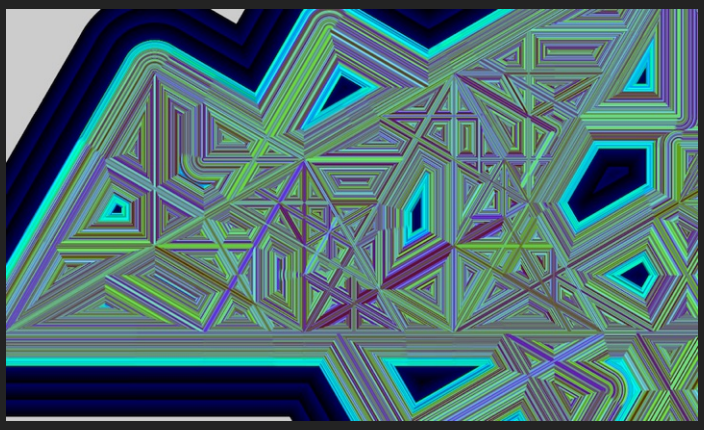
Crystal and Cell

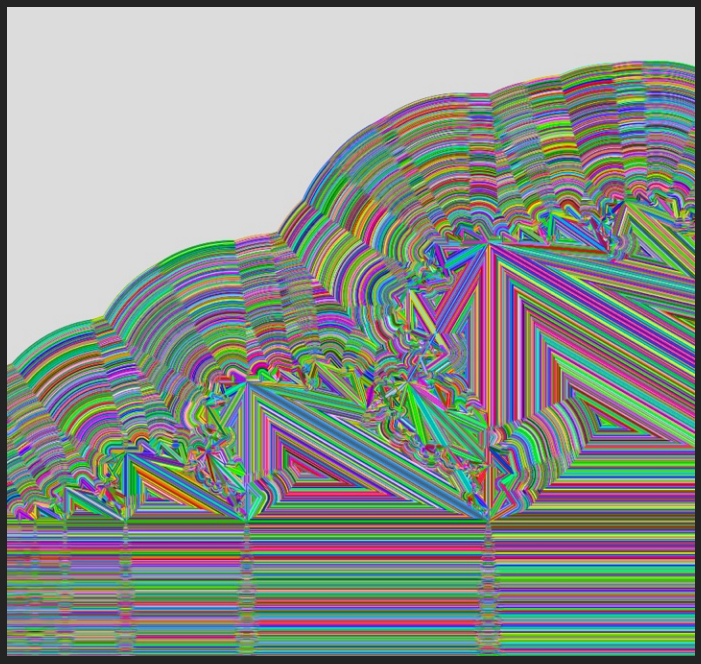
Starting with a very large brush size, the program draws a series of line segments. Every frame the program is run, the colours are varied and the brush becomes smaller.

Repeating this process hundreds of times produces dense colourful structures which seem to expand into each other. The result is akin to a cross section of an imaginary crystal or bacterial culture.

The bottom two images use a fractal structure as the source of the geometry.







Fashion Crossover London

I have been working at Fashion Crossover London since their founding in 2015. My initial involvement included creating proposal documents to approach designers, designing the layout and style of the website, menu navigation and short promotional animations for social media.

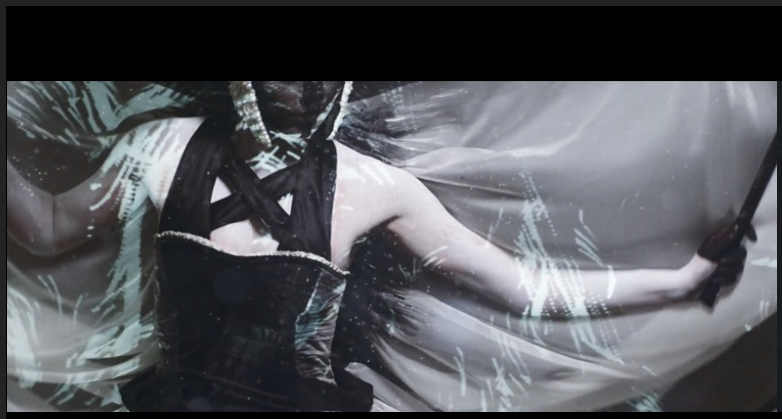
I am also responsible for managing the back end of the CMS system for the website, coding pages, managing products, liaising with the e-commerce team at Visualsoft and creating product catalogues for print.

Part of my role as Digital Designer there has included documenting press events, fashion presentations, behind the scenes at campaign and lookbook photoshoots as well as runway shows including London Fashion Week and Graduate Fashion Week. I also filmed an interview with the Taiwanese TV personality Judy Chou, recording the talent with a lavalier microphone and filming in various locations around London on a shoulder rig.

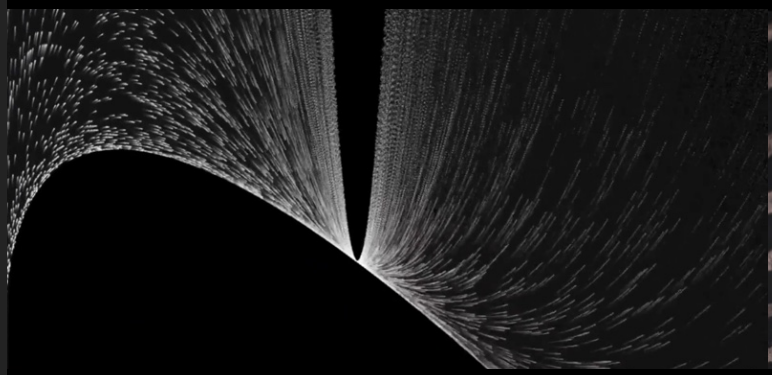
The Resurrection of Osiris Fashion Film

I worked on projections for this Egyptian mythology themed fashion film. To create the visuals, I used a perlin noise field to control the movement of points . By projecting onto the dancer from an angle and filming against a dark background, we avoided the projections spilling onto the background.

The perlin noise was intended to visually echo the movement of the cloth. Sending the video image from Processing to Resolume Arena with Syphon allowed me to distort and position the projection to conform to the dancers body. I also had methods of controlling the number of points and the speed of their movement to match the feeling of the moment.








Muqarnas Dome

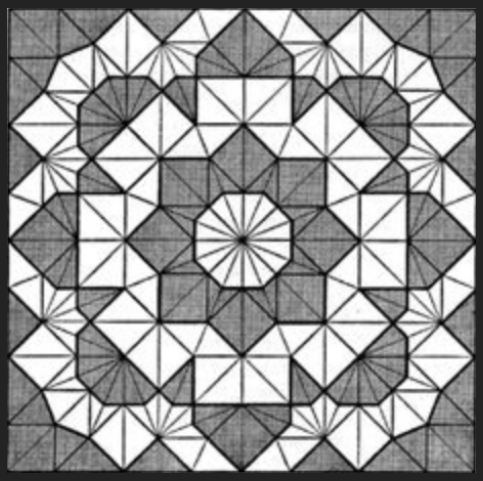
During my undergraduate degree, I became fascinated with Islamic architecture and its rigourous mathematical beauty. As such, I decided to create a replica of part of the Takht-i Suleiman South Octagon Vault in Iran.

Examples of muqarnas vaults can be seen in the Alhambra Palace in Spain, North Africa and throughout the Middle East. This architectural structure has been likened to honeycomb and caves and can be extended infinitely to fill a space producing very rich dense structures.

Simulations of chemical diffusion-reaction in Processing are used for the projections as well as animations in Adobe Flash. Diffusion-reaction was proposed by the code-breaker and computer scientist Alan Turing as a basis for the formation of patterns in animals such as zebra and tiger stripes, spots and fish skin.

The plan that I used to make the sculpture was originally from a research group at the University of Heidelberg who published the image online. In order to create the corbel elements, I referred to a guide originally by Al-Kashi and translated by Yvonne Dold-Samplonius which specifies the curvature of the interior surfaces and a construction method. I would very much like to continue to explore this type of architecture in the future and arabic creative traditions in general as they relate to modern fabrication methods such as lasercutting and CNC routing.

During this project, I found limitations in the structural quality of the materials I was using leading to parts of the sculpture bending slightly. I would be very interested in revisiting this project using lasercutting to produce a large quantity of wooden pieces which can be used to assemble large structures quickly on site. The tradition of creating muqarnas from pieces of mirror could be very effectively adapted to use laser-cut mirror perspex instead and offers very interesting possibilities in projection mapping and filming content.



The full top-view plan of the South Octagon Vault. I used the first three layers of one quarter of it for my sculpture

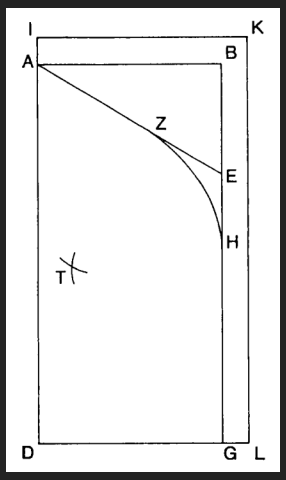
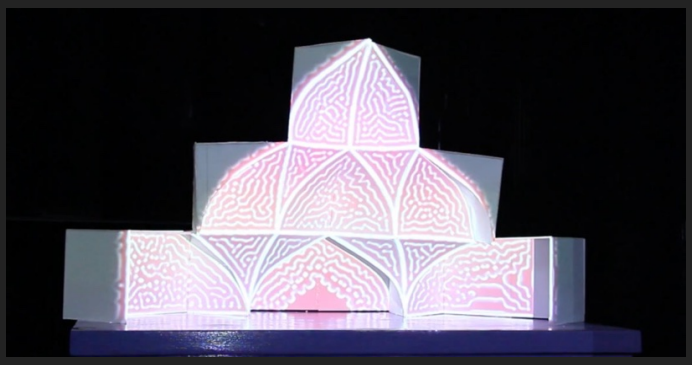
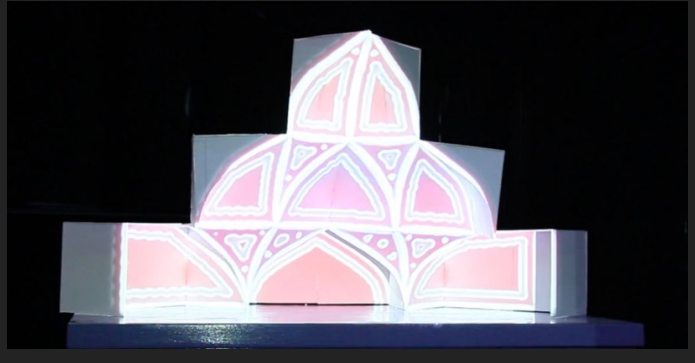
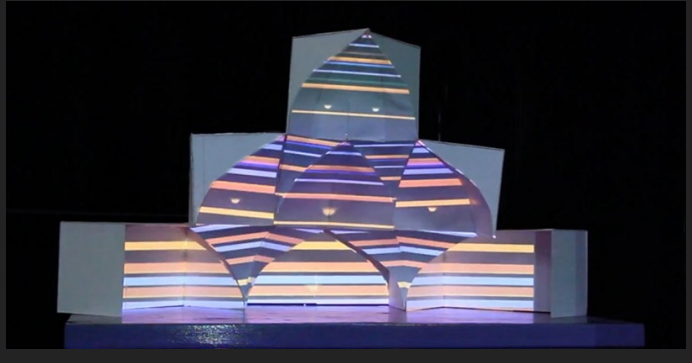


Diagram of one of corbel elements from al-Kashi/ Yvonne Dold-Samplonius







Stills from the projection mapped sculpture I made entirely by hand from paper and card.