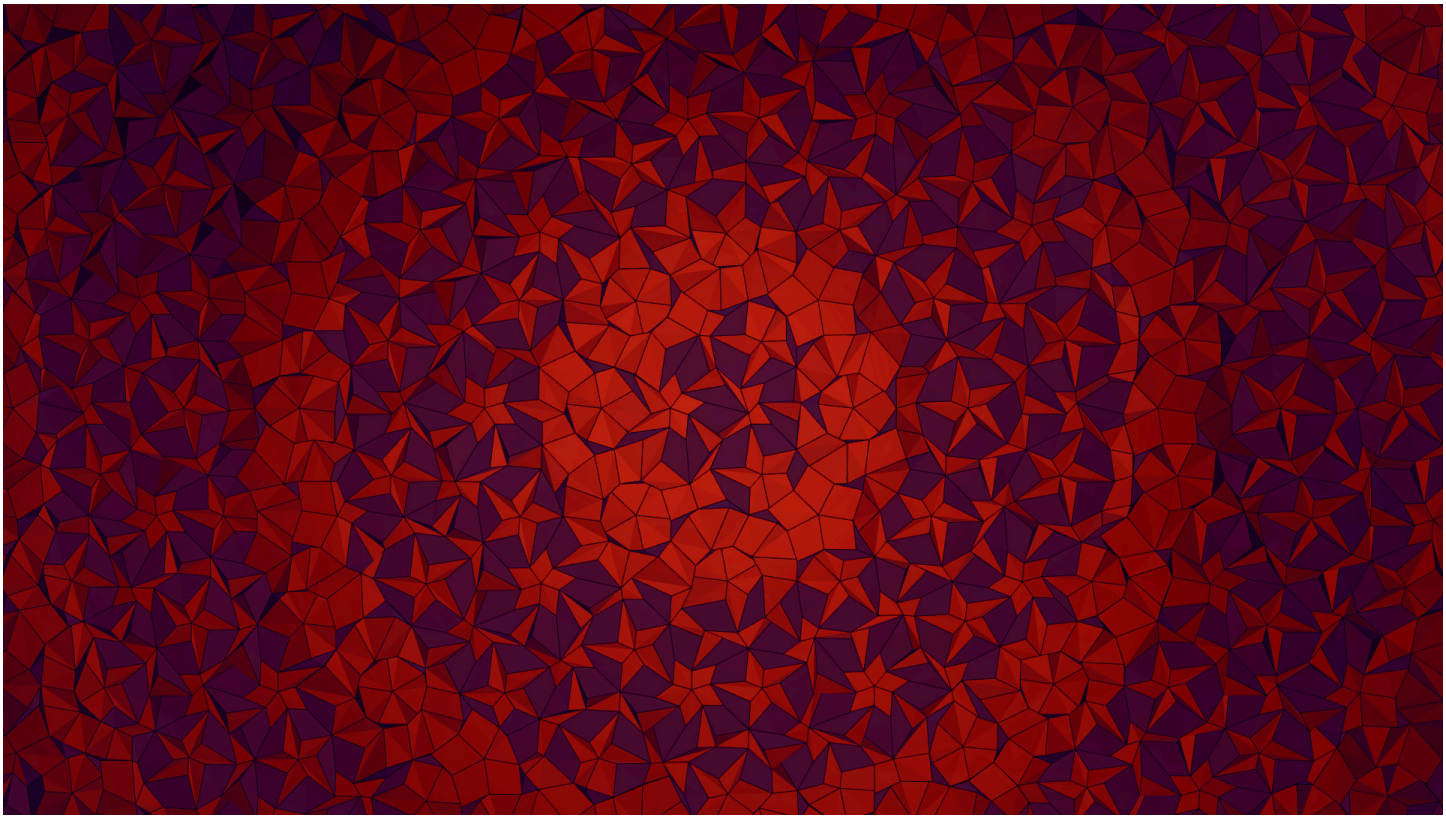
Aoife Baxendale – Video Portfolio

Penrose

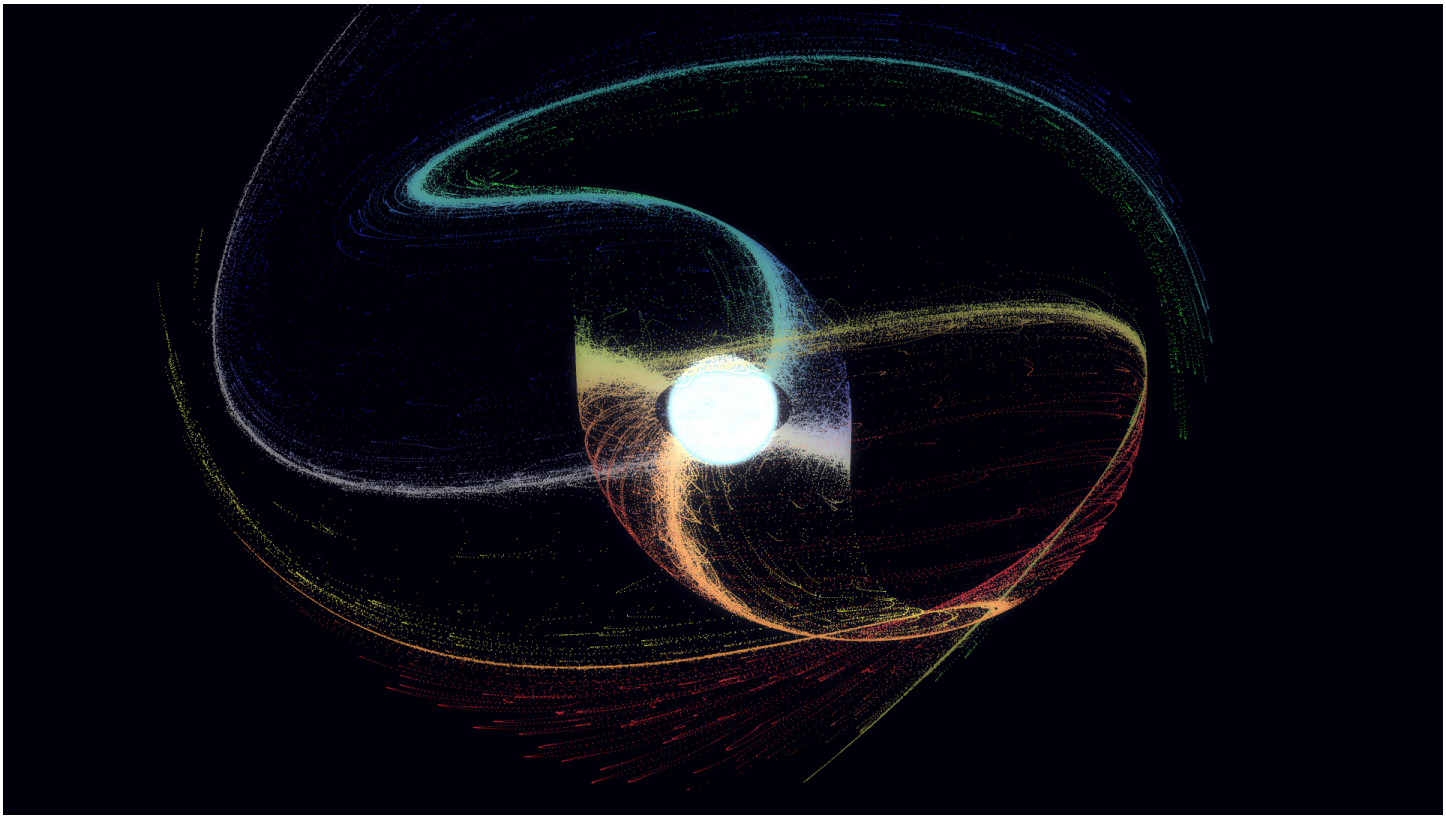


In my exploration of Penrose tilings, I was inspired by their connection to quasicrystals, which exhibit a unique, non-repeating order. I discovered that I could apply local deformations to the tiling while preserving its aperiodic nature, allowing emergent patterns to surface by altering the shapes of the rhombs. Expanding these patterns into three dimensions, I used lighting, depth, and controlled randomness to enhance their visual impact, transforming the structure into a dynamic evolving landscape. Additionally, the tilings respond dynamically to audio, creating an immersive interplay between sound and form.

See it in motion:

https://youtu.be/4SI2xqxSLAg

Spinors

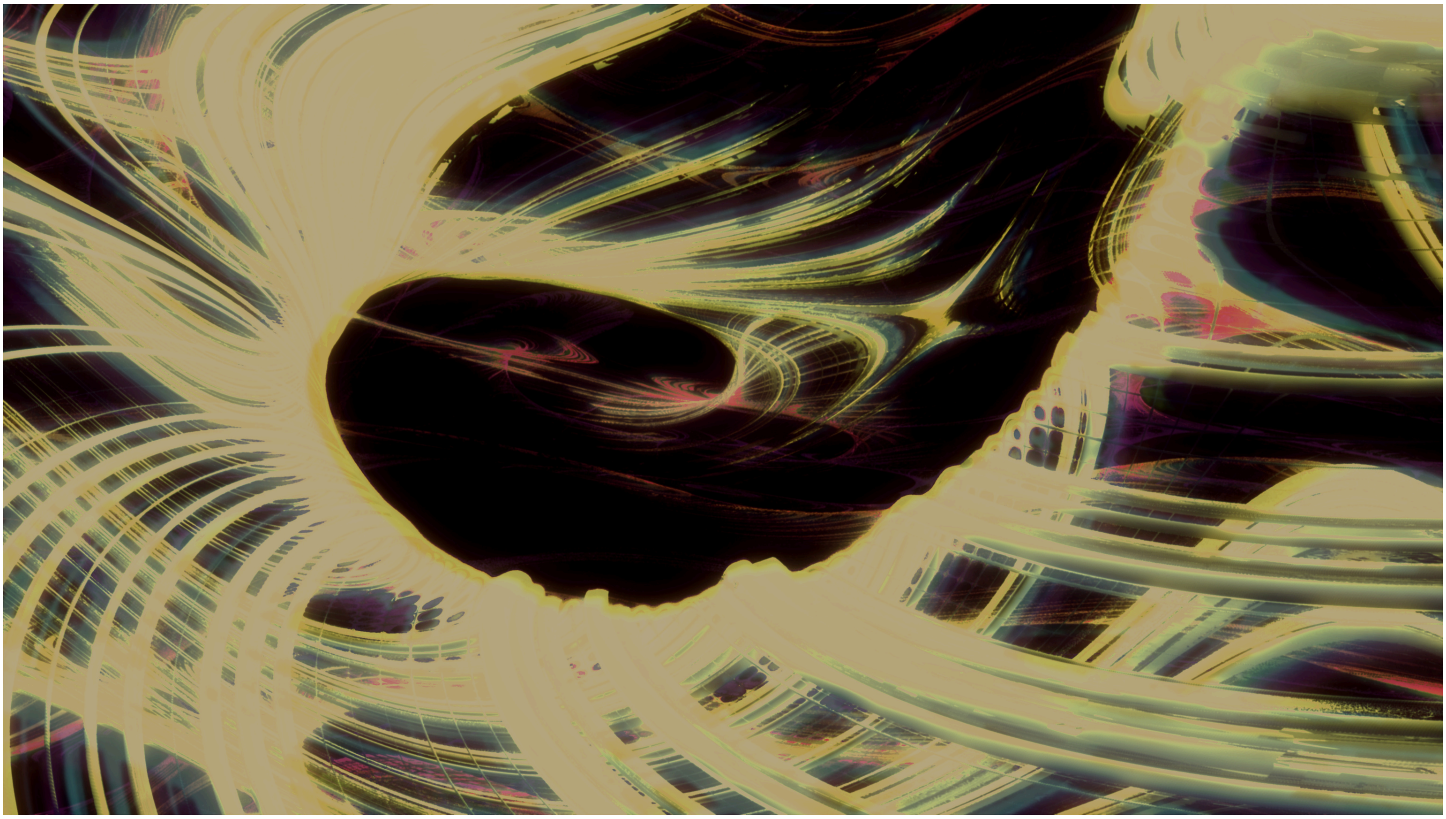


This piece demonstrates the interesting property that Spinors require a 720 degree rotation to return to their original position. This is visualised through a dynamic particle system which moves and transforms by applying the complex transformations found within these mathematical objects. As the structure turns, particles spiral outward in a motion that echoes the symmetry and depth of Spinor transformations. The resulting form evokes a galaxy in motion, with fluid, expressive trails that burst into a vivid, paint-splatter effect, blending mathematical precision with organic chaos. By applying layering of different rotational matrices and linking variables to LFOs and noise functions the live version creates an infinitely varied structure.

See it in motion:

https://youtu.be/S0vn6vDeYSI

Dimanche

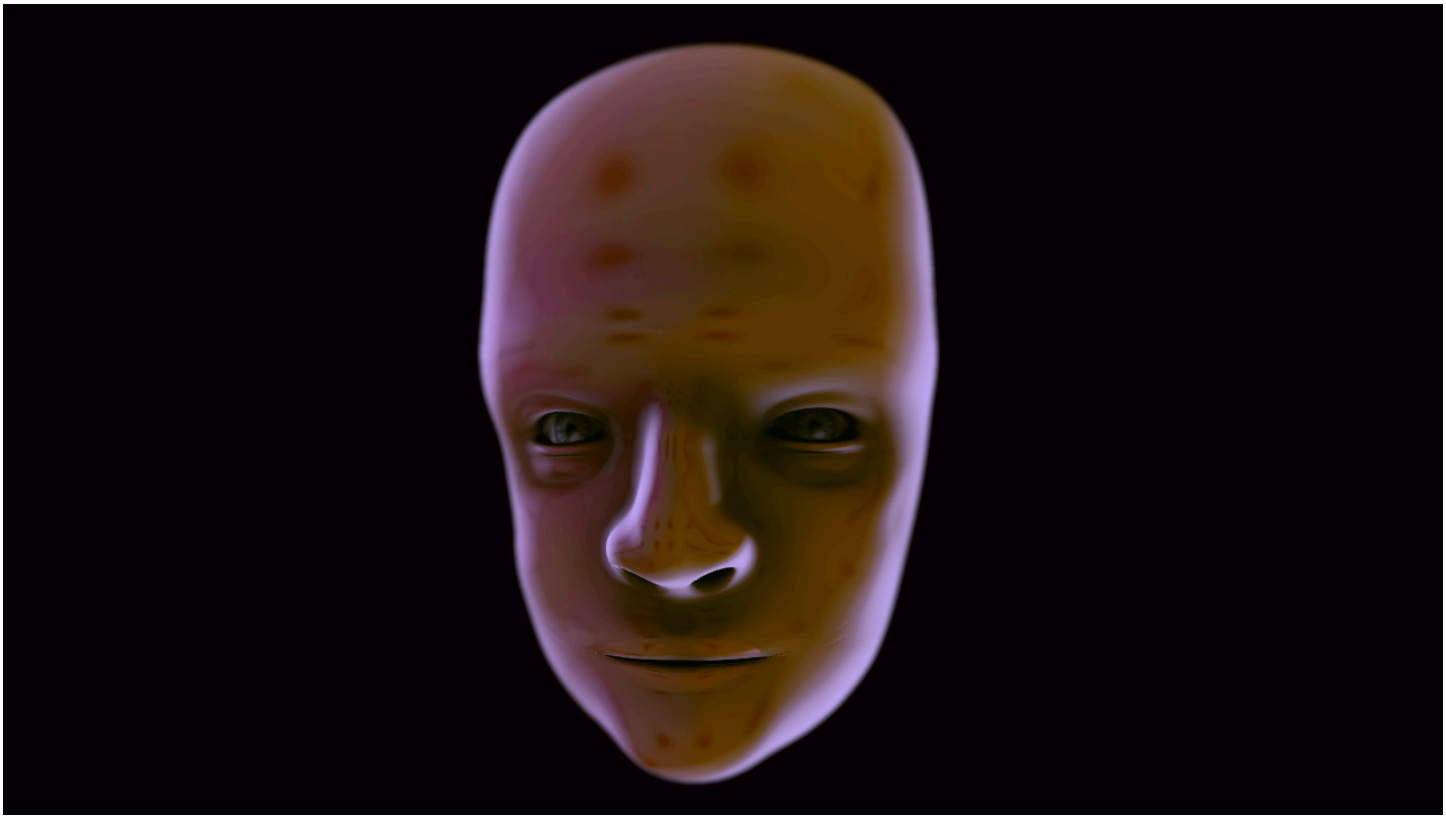


Beginning with an infinite grid of spheres, this piece transforms through rotation, deformation, and repetition, generating an ever-evolving structure. The waveform of the music dynamically controls the size of the spheres, further shaping the composition. As the camera moves procedurally through this shifting landscape, striking patterns emerge—sometimes evoking synapses, strings, cosmic structures, or pure chaos. Each run of the program produces a unique, unpredictable interplay of form and motion, blending structured geometry with organic fluidity.

See it in motion:

https://youtu.be/WM3iULF0hEA

Faces

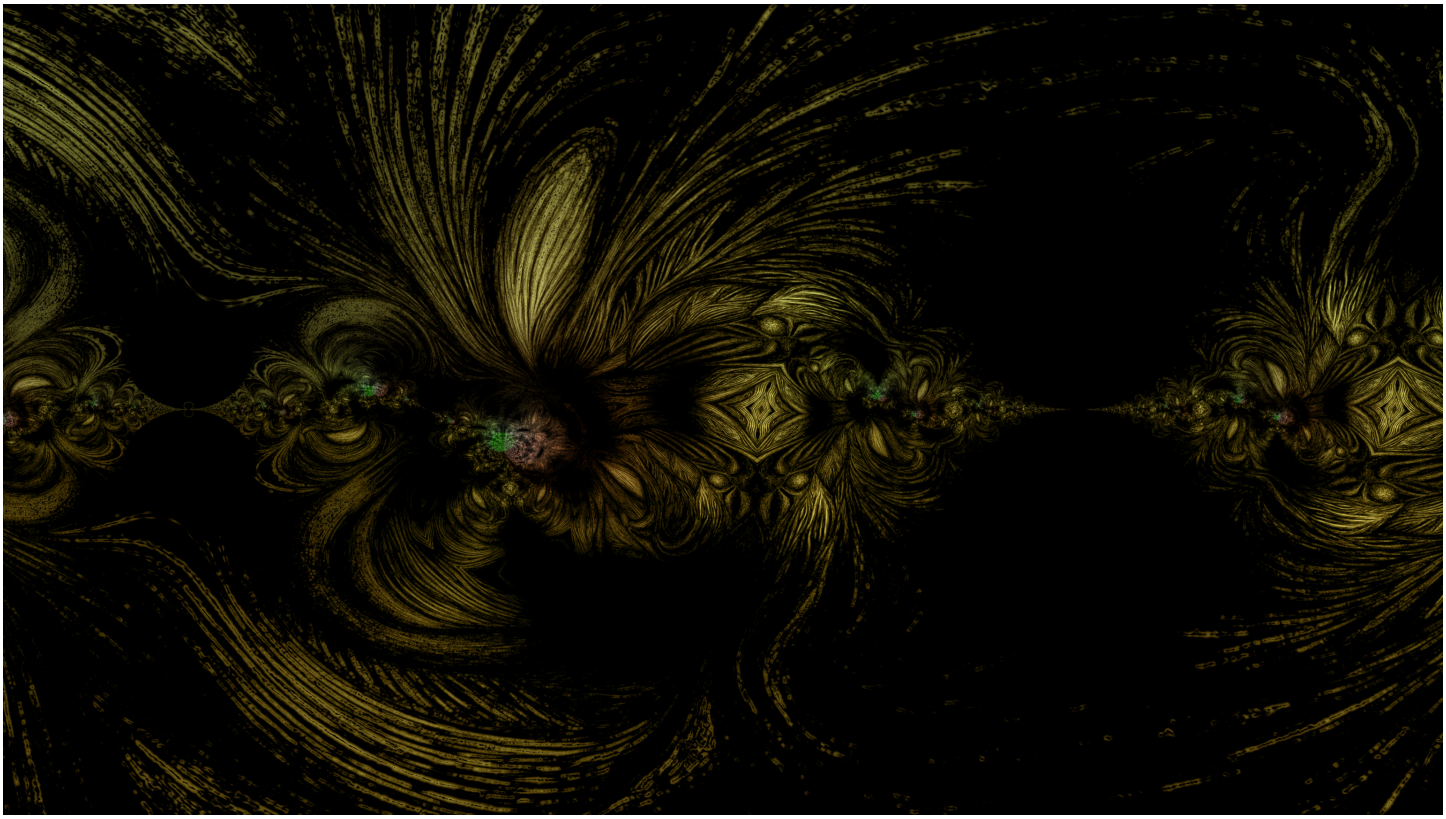


A procedurally generated face morphs and distorts over time as well as in response to music. Built entirely in code written on the GPU, this piece reconstructs facial features from fundamental geometric primitives—spheres, cones, and other forms—creating an eerie, fluid presence. The work challenges the boundaries of digital sculpting, translating principles of facial anatomy into a purely generative medium.

See it in motion:

https://youtu.be/4N0IonenCq8

Consciousness

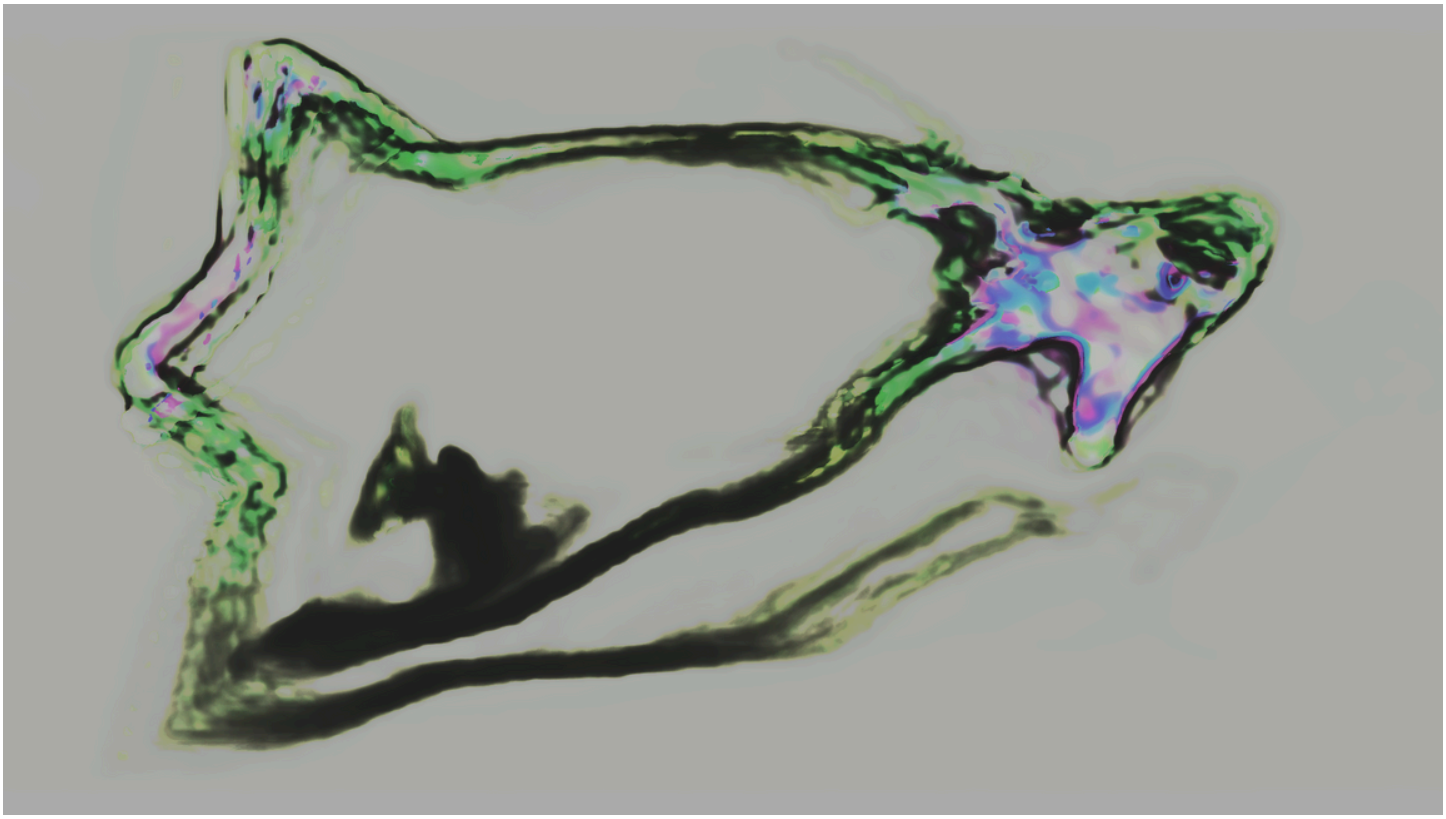


A richly textured visual experience blending hand-drawn elements with procedural transformations. Starting with a surreal biro drawing, I applied complex mathematical warping using cotangent and tangent functions to create a unique fractal. These functions evolve in real time, driven by shifting randomness and offset sine and cosine waves. The piece is then enhanced with post-processing effects to introduce a painterly quality, bridging organic and digital aesthetics.

See it in motion:

https://youtu.be/zlZhyjzmzdo

Figures



A dynamic point cloud is generated by translating an audio signal into a living painting. As the song plays, two abstract forms emerge and interact, resembling dancing figures that respond fluidly to the rhythm and tone of the music. The evolution of their motion is shaped by frequency analysis, creating a seamless connection between sound and movement.

See it in motion:

https://youtu.be/c9xoR7JlJBc