

Gianmaria Vernetti

TouchDesigner developer
Creative technologist

Starting point

I am a freelance TouchDesigner developer with a strong background in creative technologies and interaction design.

WHAT I DO

Interactive
installations

Real-time
generative visuals

Sensors and IoT
protocols

AI and computer
vision integration

Tech skills

Programming and creative

TouchDesigner

Python

Processing/P5.js

Max/MSP

Javascript

HTML/CSS

Adobe Creative Suite

Ableton Live

Resolume Arena

Physical computing

Raspberry

ESP32

Arduino

Networks and protocols

MQTT

OSC

TCP/UDP

Node-RED

CV and motion sensors

Intel RealSense

Google MediaPipe

ORBEC Astra

LiDARs

OpenCV

AI

Stable Diffusion

StreamDiffusion

ComfyUI

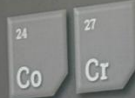
Selected works

ENGINEERING THE ULTRATHIN

Designed for long-term performance

STRENGTH

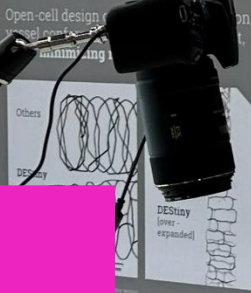
1. Alloy



Each element provides complementary material properties. Maximal radial strength and low recoil with ultrathin struts

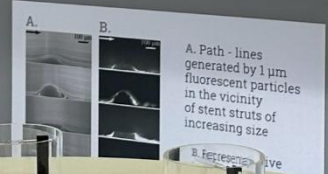


2. Scaffold design



3. Refinement

Advanced surface refinement processes optimize strut geometry at the micron level, resulting in ultrathin struts with a smooth, clean surface finish



Live Macro Lab

LIVE
MACRO
LAB

Live Macro Lab

Live Macro Lab is an interactive mechatronic installation that brings coronary stent technology to life. Designed for medical professionals, it translates **complex clinical data** into a tangible, hands-on experience, where scientific rigour meets interactive storytelling.

Developed for a **medtech company** for an interventional cardiovascular medicine congress, the installation invites users to explore stent specimens through direct physical interaction.

A **rotary encoder** lets users select the desired specimen. The table responds by smoothly **rotating** to the corresponding sample station. A **macro lens camera** captures each stent in close-up detail, while real-time **infographics** and annotated **callouts** present its key technical features on screen.

The system comprises a custom-built **rotating table** driven by a bespoke mechatronic mechanism, a **sensor and controller layer** managing hardware-software communication, and a **macro lens camera** for high-resolution close-up capture.

The entire installation runs on **TouchDesigner**, which handles live video feed processing and data visualisation. An **ESP32** microcontroller and a custom **script** bridge the mechatronic system with the TouchDesigner environment.

THE POWER OF ULTRATHIN

**REACHING
AND
TREATING
WITH
CONFIDENCE**

- Effortless navigation and crossing, even in complex anatomy
- Adaptability and controlled overexpansion
- Long-term proven Safety & Performance

0.2%
STENT
THERMOBOLIS

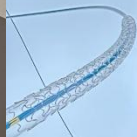
2.2%
TLF

3.2%
MACE



Complex anatomy

2. Scaffold design



ENGINEERING THE ULTRATHIN

Designed for long-term performance

1. Alloy

34 3T
Co Cr

Each element provides complementary material properties. Mechanical robustness and low recoil with ultrathin struts



2. Scaffold design

Core-cell design optimized for vessel conformability and low recoil



3. Refinement

Advanced surface refinement processing optimizes strut geometry at the micron level, resulting in ultrathin struts with a smooth, clean surface finish



LIVE
MACRO
LAB

WATCH THE VIDEO
(click anywhere on the page)



Saudi Vision 2030

Saudi Vision 2030

The installation is hosted inside a new exhibition space in Riyadh dedicated to **Saudi Vision 2030**, the kingdom's strategic development plan.

The project includes two **wall projections** and two **floor projections**. All projections are **synchronized**. When no user is inside the tracking area, static visuals are projected on all three surfaces. When a user enters the tracking area, a **user interface** is projected onto the floor and the front wall.

By using their feet, the user can **activate** five options, which in turn trigger ten videos, two pairs of videos for each wall. A second phase will include additional **interactions** on the floor tracking surface.

The tracking system is built using a **Lidar laser scanner**, which maps the floor and detects the user's exact position in the space. The data is sent via OSC to **TouchDesigner**, which controls the user interface, video activation, and synchronization of the three projectors.

WIP - Confidential

lamarina studio



lamarina studio

lamarina studio is an experiential design agency based in Cyprus and active throughout Europe. Cyprus's leading bank organized a **B2C event** to generate engagement and communicate its range of solutions to current and potential customers.

For the occasion, an **interactive memory game** based on **gesture recognition** was designed. The user must find matching pairs of cards, revealing two at a time. To do this, they perform a **pinch gesture** in front of the screen.

Once all pairs have been matched, a QR code appears, leading the user to a dedicated landing page.

The gesture recognition system is based on a simple camera and an **open computer-vision platform** (Google MediaPipe). The platform detects the correct gesture, which is used as a trigger to reveal the card. A background noise-filtering system was also developed (e.g., people moving behind the user, changes in natural light) to optimize **performance**.

Card memory management is handled by a dedicated **Python** script.
The entire system is run in **TouchDesigner**.



Aures London

Aures London

Aures London is an immersive space in London that hosts corporate experiences and public events. The venue features a system of **eight projectors** that create an immersive screen across its three main walls.

A system was developed to manage **complex video choreographies** across all projections. For example, visuals can progressively move from the side projections toward the central projections and vice versa. It is also possible to create very fast movements of individual assets (such as geometric lines or text) from one end of the projection to the other.

The speed of individual projections can be adjusted in real time, and **complex transitions** can be performed. The system also includes automatic synchronization of choreography transition speed with the BPM of the audio tracks.

The entire project is built in **TouchDesigner**, with a dedicated interface to allow independent operation by the client. The system is synchronized via **NDI** with a **local media server** for efficient video management.

An abstract digital artwork featuring vibrant green and orange-red flowing, ribbon-like forms against a solid black background. The forms are intricate, with some resembling stylized leaves or tentacles. In the upper right, a large, dark green, circular structure with concentric rings and radial lines is visible. The overall composition is dynamic and organic. A solid magenta vertical bar runs along the right edge of the image.

Trichomes.AI

Trichomes.AI

Trichomes.AI is a series of installations that explore the relationship between human intelligence, biological intelligence, and artificial intelligence. The project has been exhibited at **Barcelona Design Week** and **Barcelona New Economy Week**.

The starting point was the ultra-high-resolution **scanning** of a series of abstract artworks by Venezuelan artist Luz Valencia. The resulting images were used to train a **custom AI model** through the **LoRA** (Low-Rank Adaptation) technique.

The installation is built around a large **terrarium** hosting various plant species. A set of **sensors** is connected to the leaves and soil to measure bioelectrical differentials, providing an estimated value of plant communication. These data are used to modify in real time the parameters of an **open-source generative AI** (StreamDiffusion).

The AI receives as input **240 videos** generated from the scanned artworks, alters them using the plant data, and compares the output with the previously trained LoRA model. The result is a continuous flow of **digital landscapes** driven by the behavior of the plants and the actions of visitors within the exhibition space.

The system is based on **ESP32** sensors that transmit plant data via OSC to a **TouchDesigner** patch. The StreamDiffusion AI platform is controlled via **Python** inside TouchDesigner.





Temperature: 24.11 Humidity: 43.36
plants2: 0.037037037

plants4: 0.037037037 plants5: 0.037037037



temperature: 24.12
plants2: 0.1
plants3: 0.05263158
plants4: 0.05882353
plants5: 0.045454547



Al-'išq

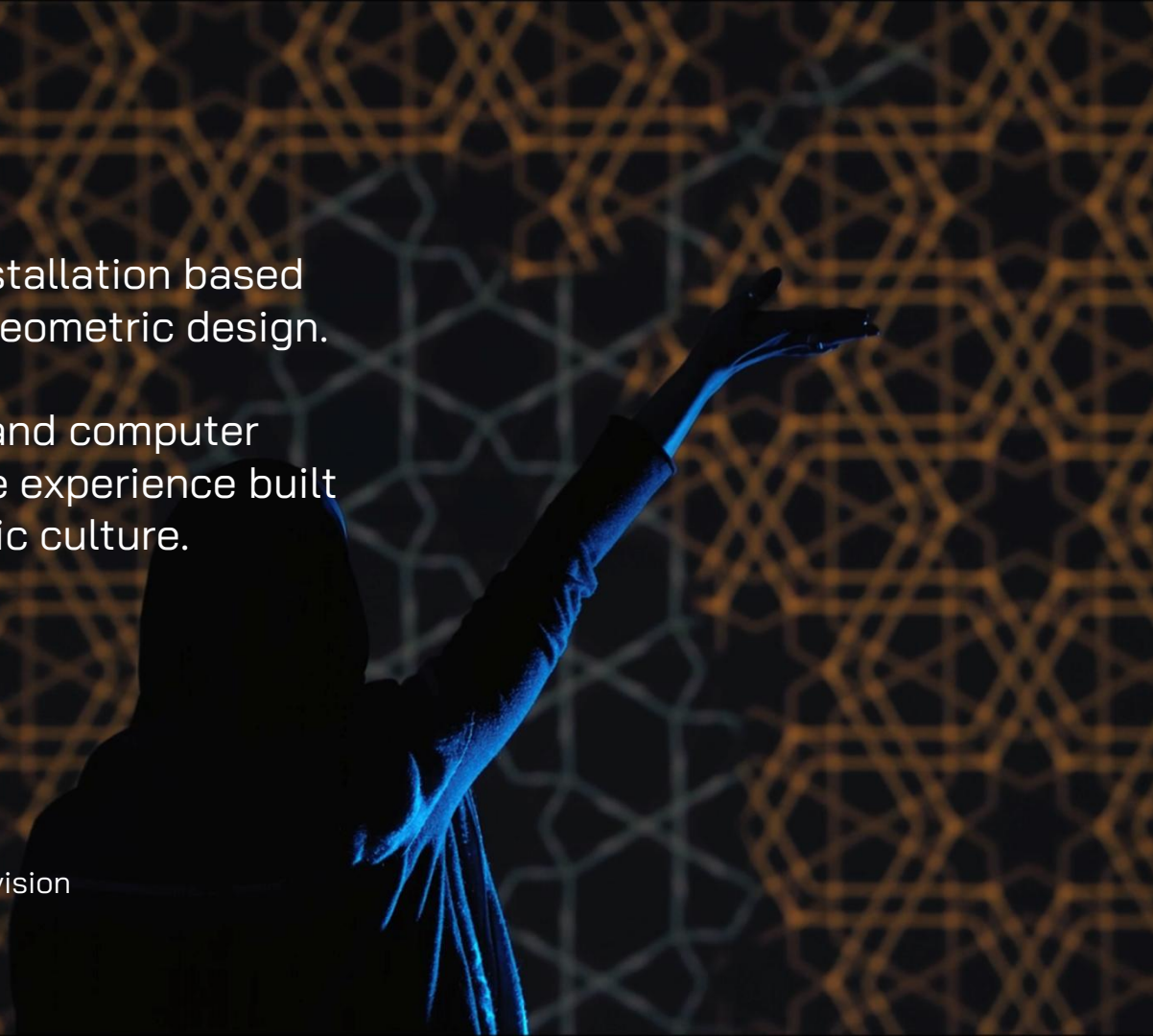
Al-'išq is a live interactive installation based on the principles of Islamic geometric design.

Al-'išq makes use of design and computer vision to create an immersive experience built upon the aesthetics of Islamic culture.

Video 

Made with: TouchDesigner and Max/MSP

Keywords: parametric design, computer vision



Here and now in 82021

Here and now in 82021 is a NFT serial work that turns information into data art for distant future generations.

Starting from the beginning of 2021, for 365 days the most relevant news of each single day were transformed into visuals and code, to the advantage of the human beings of 82021.

OpenSea 

Made with: TouchDesigner and Max/MSP

Keywords: generative design, NFT

Our selves

Our Selves is an audiovisual installation that explores the relation between human brainwaves and smartphone data.

Our Selves creates an immersive visual soundscape and an imaginary conversation between thoughts and smartphone connections data.

Video 

Made with: TouchDesigner

Keywords: data visualization, EEG

Listen Facebook

La scatola nera e il suono dell'antimateria

La scatola nera e il suono dell'antimateria
is a gesture-reactive audio installation.

It is based on the sonification of L'Anticamera
della Morte (The Death Waiting Room), a work by
Pinot Gallizio (1902-1964), painter, chemist, poet
and situationist.

More 

Made with: TouchDesigner and Max/MSP

Keywords: interaction design, sound design

The Interactive & Immersive HQ

Content creation for The Interactive & Immersive HQ, a leading online platform dedicated to digital art and creative technologies.

Last contributions:

- [Creative Uses of POPs in TouchDesigner](#)
- [Best AI Tools to Pair with TouchDesigner in 2026](#)
- [Five Creative Prompts to Kickstart your next TouchDesigner Project](#)
- [TouchDesigner TOPs vs CHOPs](#)
- [Using Cameras as Input Devices in TouchDesigner](#)
- [The TouchDesigner Python Environment Manager](#)
- [Data Visualization with Python](#)
- [Using POPs to Drive Audio Reactive Visuals](#)
- [Interactive Artwork Ideas You Can Create with TouchDesigner](#)

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Well, thanks for your attention