# Giuseppe Recupero

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Work and Academic Experience

## Graphics/Shader Programmer - Electrical Engineer

I am a graphics and shader programmer with an electrical engineering background. I create immersive, reactive visuals through creative coding and mathematics. I am passionate about crafting digital experiences that feel engaging, personal and satisfying.


### CONTACT

📍 Enschede, The Netherlands

X/Twitter - LinkedIn - Shadertoy

giusepperecupero97@gmail.com - g.recupero@alumnus.utwente.nl


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### Graphics & Shader Programmer - Freelancer

2025 - PRESENT, REMOTE / ENSCHEDE - THE NETHERLANDS

- Creating real-time visual effects and interactive shaders in GLSL, focusing on procedural generation with minimal and efficient code.
- Integrating shaders into web-based frameworks using webGL, enabling real-time rendering and interactive visual experiences directly in the browser.
- Exploring creative coding techniques for audio and signal processing (wavetables, FM-synthesis, filters) in GLSL.

### University of Twente - Master Thesis Project

2023 - 2024, ENSCHEDE - THE NETHERLANDS

- Design and analysis of a novel ultra low-power readout circuit for a MEMS microphone functioning as both a voice activity detector and a wake-up circuit within a more complex keyword spotting system.
- Verilog-A modeling of a novel MEMS Microphone tailored for Voice Activity Detection.
- Transistor Level Design of the readout circuit employing log-compression for ultra low-power consumption
- Verilog-A modeling of the ADC which provides a digital output to the classifier.

### Axign BV (Monolithic Power Systems) - Internship

AUG 2022 - DEC 2022, ENSCHEDE - THE NETHERLANDS

- Thorough study and analysis of state-of-art low-power always-on Voice Activity Detection (VAD) architectures.
- Designed, modeled and simulated a functional low-power VAD both from a high level perspective (Matlab/Simulink) and transistor level (LTSpice).
- Prepared weekly presentations on the work progress.

## Education

**University of Twente - MSc Electrical Engineering (ICD)**
NOV 2024, ENSCHEDE - THE NETHERLANDS

Thesis: Design of a Low-power MEMS Microphone Readout Circuit for Voice Activity Detection. Grade: 8.5/10.

**University of Pisa - BSc Electronics Engineering**
MAR 2020, PISA - ITALY

Thesis: Direct Digital Synthesis (DDS). Grade: 9.4/10.

## Skills

GLSL - Typescript - Javascript - WebGL - Three.js - C/C++ - Html - CSS - Python - Excel/Google Sheets.

Cadence Virtuoso - Spectre RF - Verilog-A - LTSpice - ModelSim - KiCad - Matlab - Simulink - LaTex.

## Projects

**Stock Performance Visualizer** stock-shader.vercel.app

Developed a real-time stock performance visualizer using WebGL, GLSL shaders, and TypeScript, integrating live market data to dynamically drive shader behavior.

**Shaders Playground** shaders-playground-beta.vercel.app

An interactive web-app for importing GLSL fragment shaders and experimenting live with different parameters. The goal is to showcase my collection of shaders and make them highly customizable and easy to export. Currently work in progress.

**Shadertoy** shadertoy.com/user/Jaenam

Active in the Shadertoy community. Testing new shader editors such as Sleditor and contributing to collaborative projects.

**Stonkfather Bot - Portfolio Tracker**

Developed a personal telegram bot which tracks my Google Sheet portfolio and fetches data directly in telegram. Implemented chart visualizers, portfolio percentage change tracking and custom signals alerts.

## Hobbies

Music Production and audio engineering. I play bass, guitar, piano and enjoy experimenting with both analogue and digital synthesizers.

I love pixel art and retro gaming, including modding classic consoles and developing games for older systems like the Game Boy Color. I'm also a Blender enthusiast and enjoy building games with Godot and GameMaker. Passionate about Asia, basic proficiency in Chinese and Korean. Currently studying 日本語.