

Instructions



1. Starting the Program:

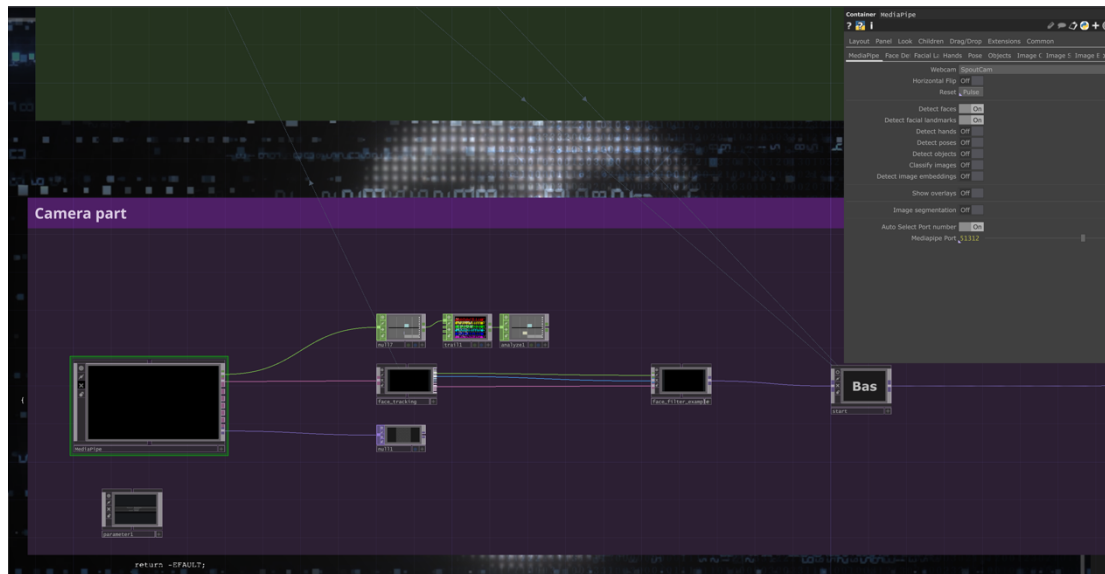
- Open the program to enter the standby screen. If the webcam is not automatically selected, choose your webcam from the top-left corner.
- Press the “Reset” button next to “pulse” to initialize the camera (if needed).
- To exit the playback mode, press the ESC key to return to the editing interface.

2. Interaction:

- The program activates when the webcam detects a face.
- In the **first phase**, your face will appear as a model on the screen, mirroring your movements.
- After a few seconds, distortions will begin, transitioning to the **second phase**, where live video from the camera is processed with noise, motion, and blurring effects. Few seconds later, it would introduce further distortions, such as liquefaction and disintegration, creating a chaotic and fragmented view.
- Once you step out of the camera’s view, the program resets to the standby screen.

Technical Explanation

This interactive program was developed in **TouchDesigner** using open-source tools and components to enable real-time face recognition and visual effects. Below is a detailed breakdown of the technical components:

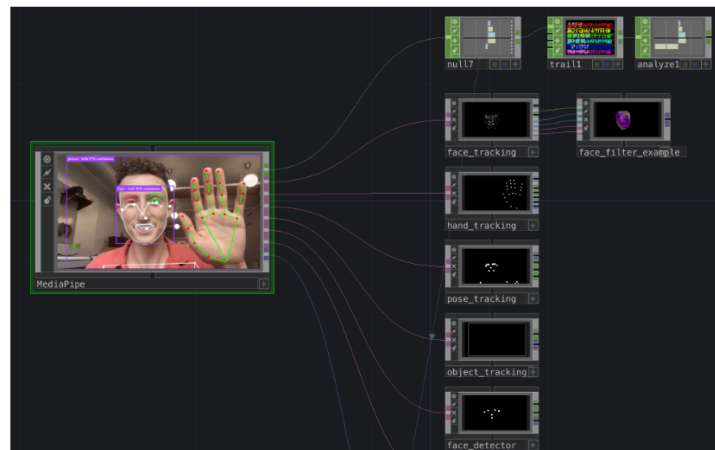


1. Face Recognition:

- **Tool:** [MediaPipe TouchDesigner Plugin by Torin Blankensmith](#)

MediaPipe TouchDesigner Plugin

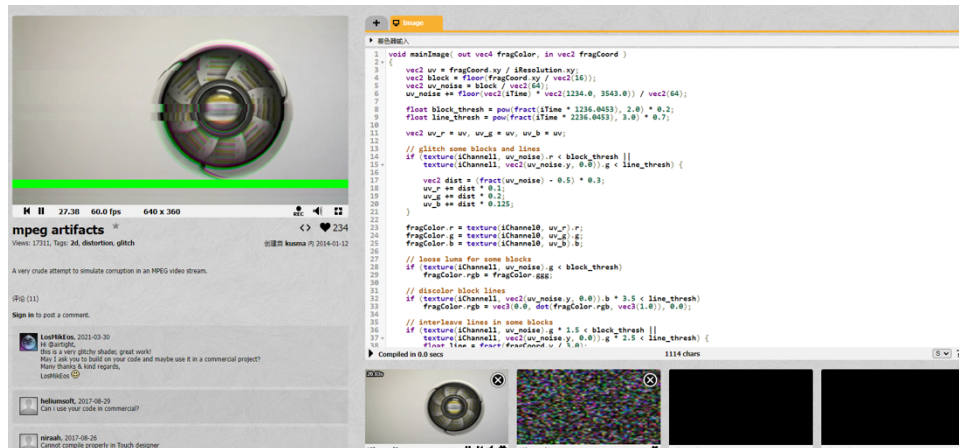
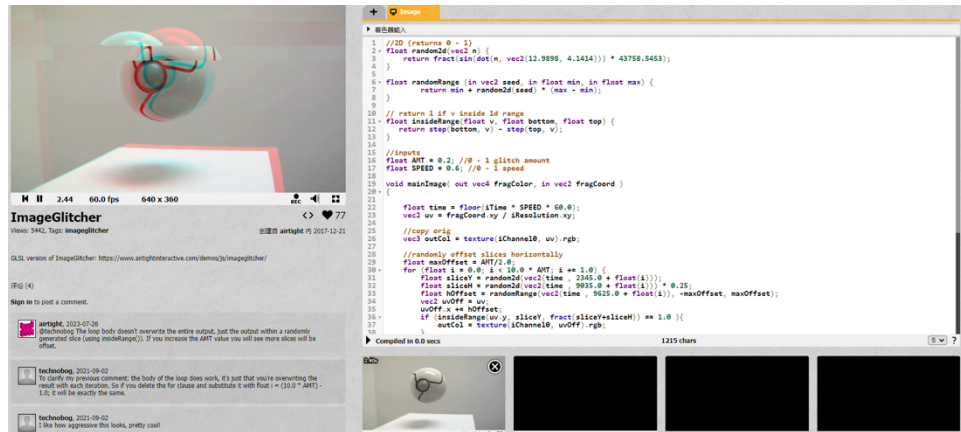
A GPU Accelerated, self-contained, [MediaPipe](#) Plugin for TouchDesigner that runs on Mac and PC with no installation. This project currently supports all MediaPipe vision models except Interactive Segmentation and Image Embedding.



- **Purpose:** Detects and tracks facial features using a machine learning model. This data drives the program's interactivity by controlling the facial model and triggering transitions between program phases.

2. Visual Effects:

- **Shaders:** Visual distortion effects such as noise, movement, and liquefaction are adapted from open-source shaders on Shadertoy:
 - [Original Shader by Airtight](#)
 - [Distortion Effect by Md2GDw](#)



- **Integration:** These shaders were customized and integrated into TouchDesigner to manipulate the video feed in real time, achieving the desired aesthetic of distortion and chaos.

3. Scene Transitions:

- Transitions between phases are controlled using **CHOP trigger components**, mapped to a **switch index** for smooth phase switching.

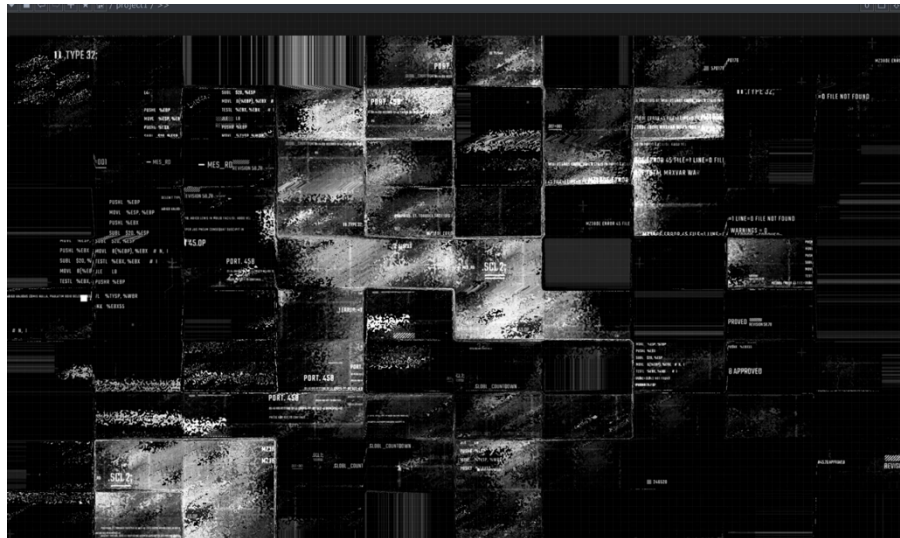


- Filters were applied to create easing effects for smoother visual transitions between distortion levels.

4. Rendering and Mapping:

- A **Grid structure** is used for geometric instancing, with UV mapping applied to project live video footage onto the grid for dynamic particle effects.

- Feedback elements were added to enhance texture and depth, amplifying the chaotic atmosphere of the later phases.



Standby Screen Design



- The standby screen is composed of:
 - A pre-recorded transparent PNG facial image.
 - Overlaid with noise and text line effects to create a dynamic visual.
- Logic operators detect the presence of a face in the camera feed, triggering the program's start when a face is detected.

