

aMiRROR: An Interactive AI Mirror Experience

Interactive AI Mirror Designed by DDisArteDD Studios

Project Statement

aMiRROR is an interactive art installation that redefines the concept of reflection. Using real-time AI image processing, *aMiRROR* captures a viewer's image and transforms it before displaying an altered version back on an LCD screen—turning a traditional mirror into a portal of self-exploration.

Concept

At its core, *aMiRROR* challenges the boundaries between reality, perception, and identity. Instead of a static, unfiltered reflection, users are presented with a dynamic and evolving version of themselves—one shaped by artificial intelligence, generative algorithms, and artistic interpretation. By integrating real-time AI tools such as Stable Diffusion and RunwayML, *aMiRROR* offers unique, unpredictable visual transformations, shifting between surreal, abstract, and hyperreal aesthetics.

This project invites participants to question the nature of self-image and perception in an era of deep fakes, digital identity, and machine creativity. How do we recognize ourselves when our reflection is no longer fixed? What does it mean when an AI interprets us in real time? What does it see “**when the mirror dreams of being you**”.

Using found and repurposed materials in its construction, *aMiRROR* also embodies the philosophy of DDisArteDD—turning discarded technology and objects into an immersive artistic experience. It blurs

the line between art, technology, and identity, encouraging viewers to see themselves—and the world—through a transformed lens.





Technical Approach:

- A hidden camera in the frame captures the viewer's image.
- AI-powered software processes the image in real time, applying transformations.

- An LCD screen mimics a mirror but displays the altered image instead.
- Variability in transformations ensures no two reflections are ever the same.

aMiRROR is not just a reflection—it is a reinterpretation, a distortion, and an invitation to see oneself in a new and evolving way.

Ideation with ChatGPT

I am an artist and want to brainstorm on ideas for creating an interactive art installation that uses realtime AI to create an "AI Mirror". The user will stand in front of the piece and camera will capture their image then alter it in realtime and display back the ai image as their "reflection". help me figure out how to make this.



That sounds like an amazing interactive art installation! Here's a breakdown of how you could build the **AI Mirror** step by step:

1. Concept & Vision

- The AI Mirror should act as a reflection but with an altered or enhanced perspective.
- The modification could be **abstract**, **dreamlike**, **psychedelic**, or **data-driven** (e.g., merging faces with historical art styles, distorting time, or creating emotional responses).
- Consider **real-time interactivity**, **gesture-based responses**, or even **text-to-image transformation**.

Ask anything



2. Hardware Components

- **Camera:** A high-resolution webcam or depth-sensing camera (like a **Kinect**, **Intel RealSense**, or **OAK-D**) to capture the user.
 - **Display:** A large screen, TV, or projection to reflect the modified image.
 - **Processing Unit:** A powerful PC, **NVIDIA Jetson**, or Raspberry Pi (depending on real-time needs).
 - **Lighting:** Controlled lighting can enhance the captured image and the overall experience.
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3. Software & AI Models

To manipulate the reflection in real-time, you can use:

Real-Time AI Image Processing

- **Style Transfer:** Use a **GAN** (Generative Adversarial Network) like **DeepArt**, **StyleGAN**, or **Neural Style Transfer** to transform the reflection.
- **Face Morphing & Augmentation:** Utilize **OpenCV** and **MediaPipe** for facial tracking, then modify expressions or overlay artistic effects.



- **Stable Diffusion & RunwayML:** If you want a more generative AI approach, tools like **Stable Diffusion** with **ControlNet** can generate surreal versions of the user.
- **Depth & 3D Effects:** Combine **Blender**, **Three.js**, or **TouchDesigner** for immersive depth-based warping.

Programming Environment

- **Processing (Java-based)** – Since you're into Processing, you can use it for computer vision, OpenCV integration, and AI calls.
 - **Python (OpenCV, TensorFlow, PyTorch, or RunwayML API)** – If you want deep AI manipulation.
 - **TouchDesigner or Unity** – If you're aiming for real-time 3D visual effects.
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4. Interaction & UI/UX

- **Real-Time Sliders & Controls** – Let users choose their transformation style.
- **Motion-Based Effects** – Use hand gestures or movement tracking to change the AI effect.
- **Voice & Emotion Recognition** – The AI could modify the reflection based on the user's mood.



can you generate some images that help visualize each step?

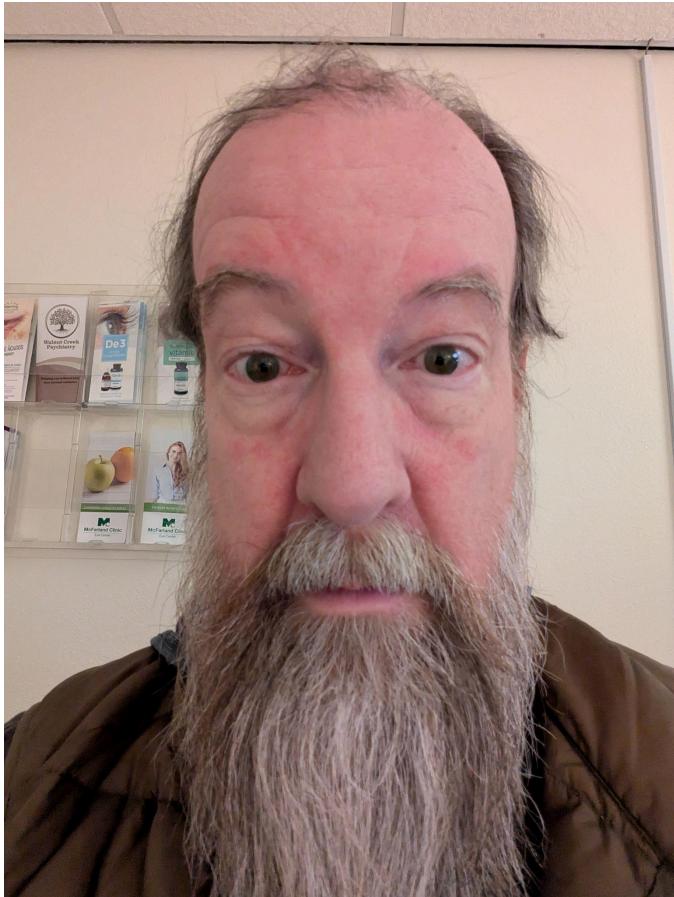


Here's a visual representation of the **AI Mirror** concept. It illustrates the interactive digital mirror capturing a user's image and displaying a surreal AI-generated transformation. Let me know if you'd like variations focusing on specific components, such as the camera setup, real-time processing, or user interaction!



Ideation with Krea.ai real-time Image Generation

Source Images





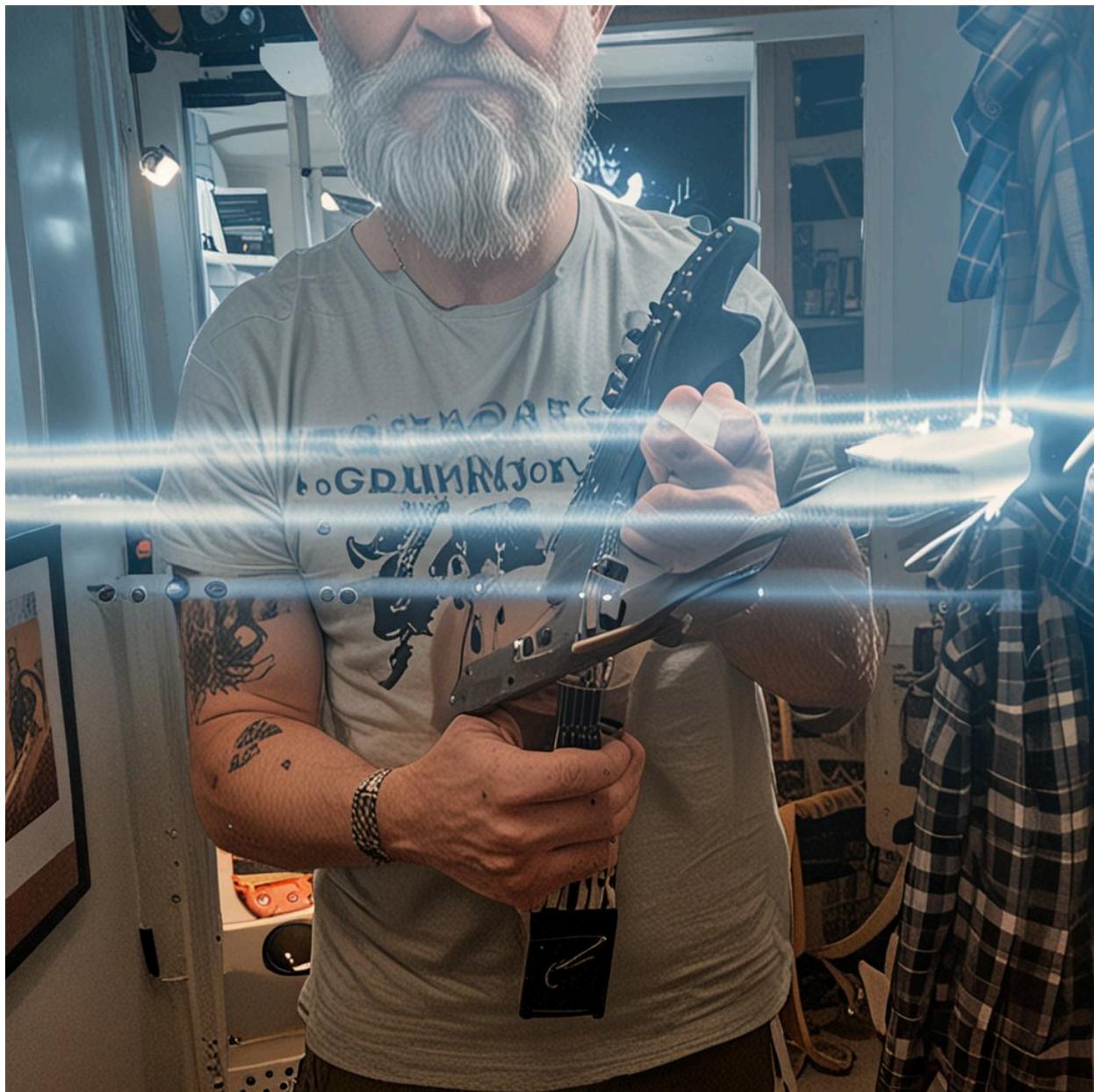
Prompt: Indiana Jones



Prompt: David Letterman



Prompt: Rockstar





Prompt: Spaghetti and Meatballs



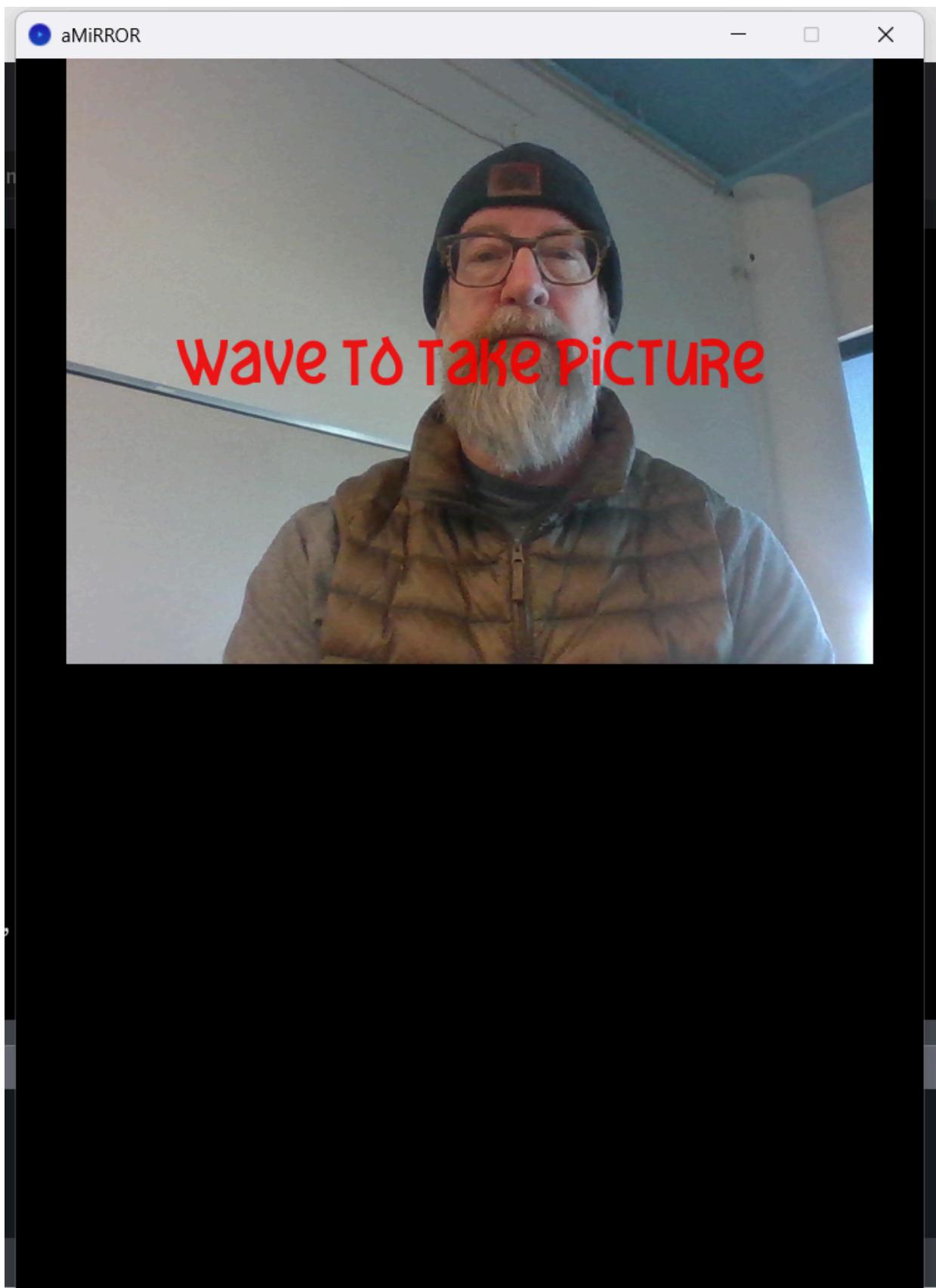


Prototype

<https://github.com/dandegeest/aMiRROR>

Using Processing as the coding environment.

Simple motion detection for camera capture was implemented.





aMiRROR

Then I uploaded that capture and used in Krea.ai to experiment with prompts, weights, and background textures/images.













Next steps

Find an API that can be called to do the real-time AI generation. At this time Krea does not have an API and I am investigating other options.

About DDisArteDD

DDisArteDD is a creative studio founded by Creative Technologist Dan DeGeest (DD), dedicated to blending traditional assemblage and environmental art with technology, AI, sound, and interactive media. By repurposing found objects and discarded materials, the studio fuses physical and digital elements, integrating microcontrollers, real-time data, and generative AI to push the boundaries of what art can be. Sculptural reliefs, site-specific installations, and mixed-media compositions come to life through dynamic layering, light, and motion, creating immersive experiences that challenge perceptions of waste, value, and transformation. **"Transforming the discarded into the DDisArteDD"**