

ART AND MACHINE LEARNING
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Machines Won't Dream of Us



Selam Gano

DESCRIPTION

Concept

Piassa is a historic central square in the city of Addis Ababa, Ethiopia that was recently completely redeveloped in 2024 by the federal government. The redevelopment was a politically controversial decision that, in addition to displacing many residents and businesses in the Piassa area, also drew criticism for not attempting to maintain the historic character of the neighborhood. Proponents believed it was a necessary step to modernizing the city.



Image from [this Guardian article](#) about Piassa's redevelopment

Setting the political controversy aside, I wanted to explore (as a first-generation Ethiopian-American) how we would remember Piassa with our digital tools. Even though we are in the modern era with hundreds of recording devices, Piassa, Ethiopia, and the African continent as a whole has a smaller digital footprint online and is represented on the internet in a very different way than its reality. This extends to machine learning models, which often represent the African continent poorly in their training data.

Process

I knew I wanted to do some kind of video generation project related to Piassa, but when I experimented with online generators, they struggled to depict scenes of Piassa with culturally appropriate markers. Text on signs appeared skewed toward sanskrit-like glyphs rather than Amharic letters, and clothing also appeared more southeast Asian than east African. I was simultaneously impressed that generators such as Image_FX by Google were able to get anything right at all and dismayed that a country with 110 million people has such little digital footprint and online representation.

In one attempt to turn an image from instagram into a video, the video generator turned an Ethiopian man in the image to a white European-looking man:



Prompt image (left) and final frame of generated video (right)

I began asking questions such as, how would people like us be remembered by machines? This influenced the direction I ultimately chose to produce a video for this work.

Technique

After being disappointed by online models, I decided for both data privacy and cost reasons to use an open-source video generation model, Stable Diffusion, from Hugging Face. This allowed me to process public images from users on Instagram into video without giving that data to a corporation. Though Stable Diffusion videos are not as “realistic” as paid tools online, in many ways it preserved ethnic and cultural characteristics better. So I leaned into the distortion of Stable Diffusion in order to explore the distortion of collective memory. I used images I collected from Instagram, video clips generated from those Instagram images using Stable Diffusion locally on a PC with GPU, text-prompt generated images from Google Image FX, and the clip of the Ethiopian man washing a car referenced above, which was generated by Runway ML.

Reflection

The video I created first displays a series of real images of Old Piassa selected from Instagram. It starts with the song “Maleda” by Ethiopian artist Kassmasse. As the video progresses, the images are replaced by the machine-generated video clips playing in reverse. I chose to play them in reverse to lean into the distortion that Stable Diffusion created, much the same way the internet distorts its representation of Ethiopia. As the machine distortion slowly takes over, the generated video clips from real Instagram images give way to text-prompt generated images and video clips. The text-prompted videos contain more cultural distortion than the previous clips, finally ending with the clip of an Ethiopian man washing a car in Old Piassa who then turns into a white man, which was generated with runway ml. Throughout the video, the voice of Kassmasse slowly fades away until, with the final frames of the video, it disappears completely. I faded the track intentionally to reflect the erasure of minority cultures in online spaces.

In order to get Stable Diffusion to successfully run on my lab PC, I spent a lot of time on the technical portion of this project. If I were able to refine the artistic or narrative portion of this work further, I would try to add more clips and images from social media, and try to clip together more narrative themes from those found images. Aside from that, I think I was able to successfully turn what was originally a blockage (ML video generation tools that are not inclusive) into artistic commentary.

RESULT

The resulting video is linked below, along with the python script for Stable Diffusion. The images above of the man washing a car represents the general theme and progression of the video.

- Video:
 - https://github.com/selamie/piassa_dreams/blob/main/Machines%20Don't%20Dream%20of%20Us.mp4
- Python Script:
 - https://github.com/selamie/piassa_dreams/blob/main/im2vid.py

CODE and/or TOOL LIST

- Google Image-FX (<https://labs.google/fx/tools/image-fx>)
- Runway video generator (<https://runwayml.com/>)
- Stability AI Stable Diffusion open-source model
(<https://huggingface.co/stabilityai/stable-video-diffusion-img2vid-xt-1-1>)
 - This model ran on my lab PC, an Alienware with a single Nvidia GPU
 - I included my python script with my uploaded files