

## Project Proposal

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My goal for this project is to leverage my machine learning experience and create a DeepFake Detection AI system. I was thinking a lot about the field of Digital Forensics and what would be some of the biggest challenges in the upcoming years. I kept coming back to the conclusion that AI development is moving very rapidly and that development is going to swiftly encroach itself in Digital Forensics. For example, Midjourney, an AI Generative Art company has seemingly pushed the bounds of reality by creating photorealistic fake photos. There are almost at the point where you can't tell if the images were taken in real life or were created by these AI systems.



*Figure 1-2: These are not real photos. These are created by the AI company Mid Journey. From user @mileszim*

As you can imagine these AI generated photos are only going to get better. That is why I chose to make my project about DeepFake Detection because in the very close future we need to know if what we are seeing is reality or fake. The goal of this project is to create an AI DeepFake Detector that can recognize AI generated content (images and video). The scope of my project is

not going to go in the realms of me creating my own deep fake generator. This is often the case where some people will create a Deep Fake AI Generator to train another AI Deep Fake Detector what Deep Fakes look like. The scope will purely lie in the field of detecting not generating ai made content. In respect to deliverables, I plan on creating multiple python files that will be used to code up and train the model. However, I will upload the trained model to a Jupyter Notebook which will allow me to better show the class what the AI Detector is doing. I plan on using the Midjourney App during my presentation by prompting it to create an AI generated image. I then plan on putting that image into my AI Detector (in Jupyter Notebook) and showing the class what the AI prediction of the image is, whether it's fake or not. I will also test it with real photos I actually took in my life.

## **References**

Images came from: <https://twitter.com/mileszim/status/1613965684937224192/photo/4>