 # Personal Background

I have taken MATH 425 and CS 450 but I have not taken MATH 488. I have, however, spent an entire semester working on a face recognition program for a BYU-I professor. I want to use machine learning and AI in the media industry. There are several companies building AI to analyze and evaluate scripts, various media industry markets, and content. After graduation I hope to work for such a company, such as Storyfit or perhaps Angel Studios. You can reach me at gra11027@byui.edu.

 # Project Background

Can video feeds be scanned, edited, and then presented in real-time, and perhaps more importantly can an AI be trained to do this without a program needing to look at the data directly. If this can be done, and since machine learning is already used by companies and programs like Sightengine, Google Vision, and Amazon Rekognition to notice suggestive images, it should be capable of scanning for the same before such images are presented on a screen and without a programmer needing to sift through indecent training images.

To protect against indecency, I will simply train the program to take a video feed search for people and put a bounding box around each person in real-time. I will also use current encryption techniques to use a training set without being able to see the image directly.

 # Domain to Investigate

I will be studying image recognition and how to encode image data so that it can be used for training but can't be viewed as an image such as Facebook has done. I will need to learn to feed an algorithm live data, run it through an image recognition program, edit the image, and then display the image probably with the OBS Studio software program. Before that, I'll need to find pre-gathered data, encrypt it for privacy and security, and train the algorithm with the same.

 # Proposed Deliverables

I request that I use the following deliverables to track my progress:
- Find dataset to use
- Encrypt the dataset and make a Google Colab that documents the process.
- Make a Google Colab that documents how I trained a Convolutional Neural Network (CNN) to recognize people.
- Document the speed at which the CNN returns images of various standard sizes while running a live feed of testing data and the CNN in OBS studio simultaneously

 # Faculty Request

I will pass on requesting particular faculty members to assist me for the time being.