**Project 4 Proposal**

**Title:** Classifying Human Emotions

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**Project Description/Outline:**

Creating a machine learning model for classifying images of human facial expressions by their emotion, into one of eight different categories.

The dataset used was obtained from Kaggle, available from the following link: <https://www.kaggle.com/datasets/sudarshanvaidya/random-images-for-face-emotion-recognition>

The purpose of this project is to develop a machine learning model capable of accurately determining the emotion a human is displaying based on their facial expression. The dataset contains images categorised into: anger, contempt, disgust, fear, happiness, neutrality, sadness, and surprise. If time allows, we also are aiming to create a webpage in which the user can upload an image of a human face for analysis by this model.

**Research Question:**

Analysing human facial expressions to determine the emotion they represent.

**Breakdown of tasks:**

* Data collection (there are 5,500+ images divided into 8 emotions: anger, contempt, disgust, fear, happiness, neutrality, sadness, and surprise. All images contain grayscale human face (or sketch). Each image is 224 x 224 pixels, grayscale in PNG format.)
* This project will use the Pandas and Matplotlib libraries for Python, Google Colab, and possibly HTML/CSS/JS
* Following preprocessing of data, Tensorflow will be used for the development of the machine learning model
* Train the Model
* Test the Model
* Save the model
* Prepare a Readme File
* Create a write-up summary based on our findings
* Present our findings via Powerpoint presentation