Project 4 Group 1 Proposal

Emotion Classifier

Scope

The goal of this project is to develop a machine learning model capable of automatically detecting and classifying facial expressions as either "happy" or "sad" from a dataset containing over 2000 images. This project will be particularly relevant in fields such as psychology, social sciences, and human-computer interaction, where understanding and interpreting human emotions through facial expressions is crucial.

Questions

1. Can we build a model to accurately classify facial expressions as happy or sad?
2. Does the model perform equally well across different demographic groups?
3. Can the model detect mixed emotions (e.g., slightly happy, neutral, slightly sad)?

Steps

1. Perform data collection and preparation
2. Train data in the machine learning model
3. Evaluate the model on test datasets. We aim to achieve an accuracy of 75% and above
4. Deploy it for real time image testing

Data Source

The data will be sourced from publicly available datasets, specifically the dataset titled **Over 2000 Sad and Happy faces Auto Detection** available on Kaggle here. This dataset provides a diverse collection of images labelled with sad and happy expressions, which is suitable for training models to detect and classify emotions based on facial features. The images in this dataset vary in terms of lighting, angle, and demographic characteristics, ensuring the model's robustness and generalizability.

Output

The end product would be a platform to upload photos of emotions where the model can automatically categorise them into happy or sad.