Mini Project for HCL:

Age Prediction through Image Processing

Project Overview:

This project aims at developing a program that can predict the age group of a person from an image.

Image processing and machine learning are used hand-in-hand to enhance and identify the facial features of a person in the image to predict the age.

Features:

- The program works as a backend program that can be used to integrate with any of the use-cases.
- The program is developed based on deep learning and image processing techniques.
- The program predicts the age within the system (Edge computation).

Programming skills:

- Python programming
- TensorFlow, Keras – Python module for AI model
- OpenCV – Python module for Image processing

Scope:

The prediction of age of a human using image processing and AI helps in crime investigation to assess the age of the suspects or victims. Age prediction is also useful in age-based data detection in a crowd and gatherings.

This project aims at developing such a program that can predict the age group of a person from a given image. The use of machine learning and image processing establishes a strong foundation for the development based on this program to predict the age groups.

Flow diagram:

The following steps describes the flow of developmental procedure of the program:

1. Data

    1.1. Data Collection

    1.2. Exploratory Data Analysis (EDA)

    1.3. Data Classification - (Age classes)

    1.4. Data Split - (Train - val - test)

2. Process Image

    2.1. Preprocessing image
3. Model Training
    3.1. Build a model structure
    3.2. Train the model
    3.3. Validate Model
4. Model Performance monitoring
    4.1. Test the model
    4.2. Confusion matrix
    4.3. Other performance metric monitoring
    4.4. Conclusions on the trial
5. Export model (After finalizing the model and metrics)
    5.1. Save the model
    5.2. Export the model
6. Deploy