Gender and Age Prediction using UTKFace Dataset

This project aims to utilize deep learning techniques to predict the gender and age of individuals using the UTKFace dataset. The UTKFace dataset contains over 20,000 images of individuals from various ethnicities, with a range of ages from 0 to 116 years old. By training a deep learning model on this dataset, we aim to accurately predict the gender and age of unseen individuals. The results of this project have potential applications in a variety of fields, including facial recognition and marketing research.

Data

The UTKFace dataset contains over 20,000 images of individuals from various ethnicities, with a range of ages from 0 to 116 years old. The images are annotated with the individual's gender and age. Before training the model, the data was preprocessed and cleaned to ensure that it was ready for use.

Model

For this project, we used a convolutional neural network (CNN) as the basis for our model. The CNN was trained on the UTKFace dataset using the Adam optimization algorithm and cross-entropy loss. We also employed transfer learning and data augmentation techniques to improve the performance of the model.

Evaluation

The model was evaluated using a variety of metrics, including accuracy, precision, and recall. The results showed that the model was able to achieve high accuracy in predicting both gender and age

Conclusion

In conclusion, we were able to successfully build a deep learning model that is able to predict the gender and age of individuals using the UTKFace dataset. The model achieved high accuracy in its predictions, and has potential applications in a variety of fields.

Installation

To install and run this project, you will need the following dependencies:

- Python 3.x
- TensorFlow
- Keras
- NumPy
- Matplotlib

You will also need to download the UTKFace dataset and place it in the project directory.