



Gender Classification Model

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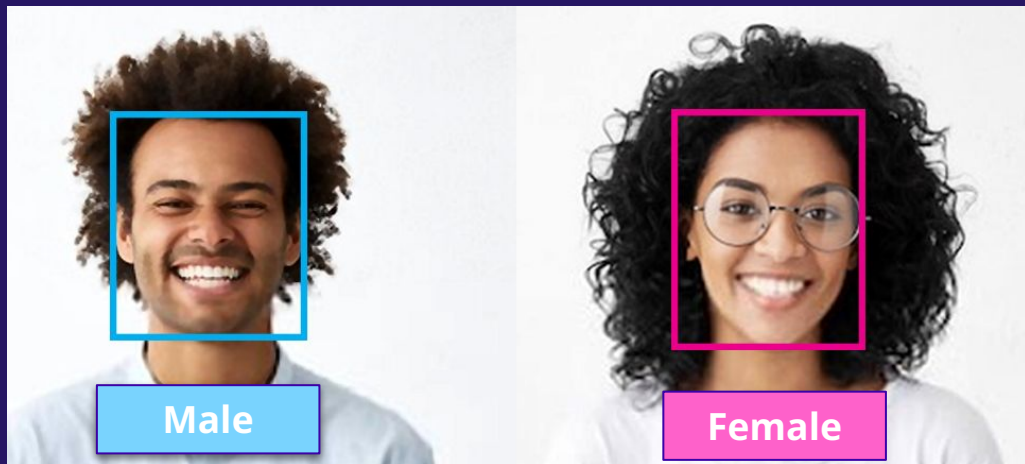


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Project Board

Define and collect data

Define project goals and gather relevant data

01

Preprocess Data

Clean and prepare the data for analysis

02

Model Selection and Training

Choose an appropriate model and train it on the prepared data.

03

Evaluate and Deployment

Evaluate the model's performance, deploy it in production

04

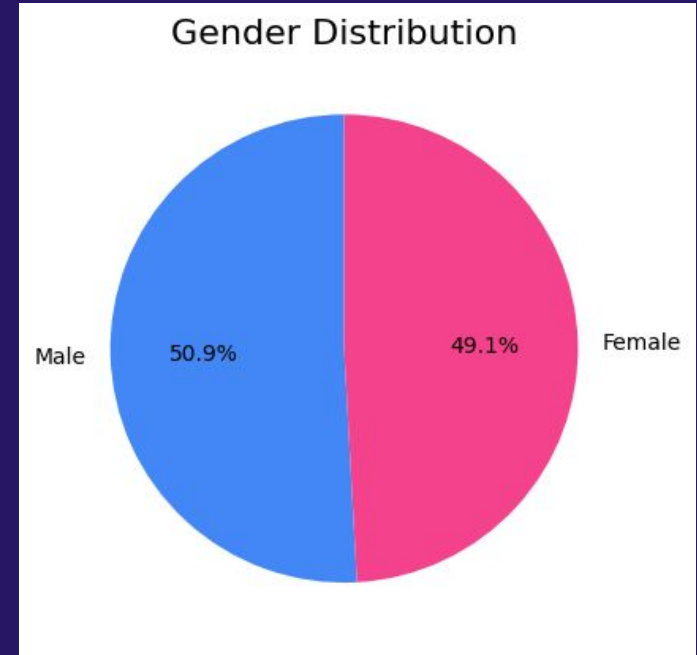
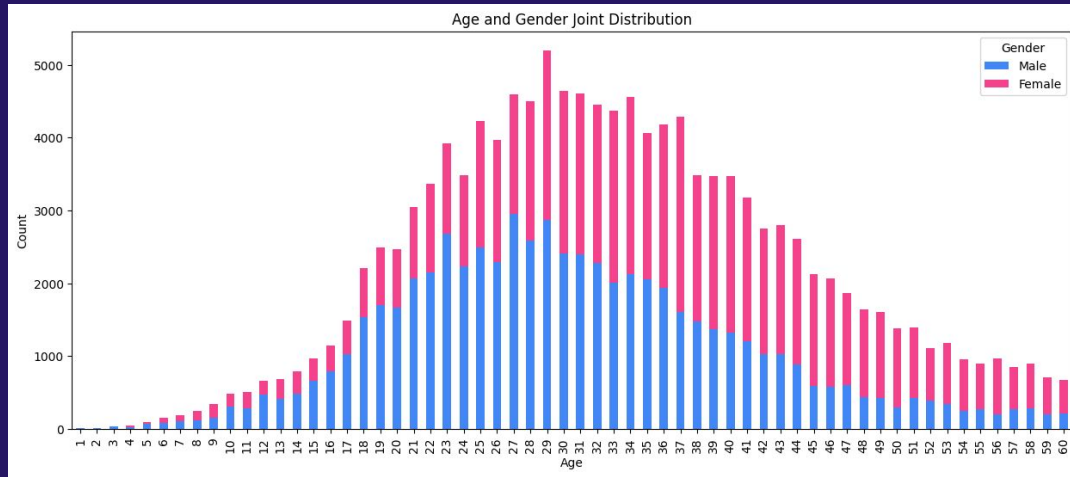
Development Stage

Stage	Description
Data Collection	IMDB Wiki Faces Dataset IMDB Wiki Faces Dataset (kaggle.com)
Data Preparation	<ol style="list-style-type: none">1. Acquiring Essential Libraries2. Establishing Connectivity3. Data Preparation Process
Data Preprocessing	<ol style="list-style-type: none">1. Convert MATLAB "datenums" to years, assign to date_of_birth column.2. Calculate age from 'photo_taken' and 'date_of_birth' columns.3. Remove pictures without faces based on 'face_score' column.4. Remove pictures with multiple faces using 'second_face_score'.5. Remove pictures with age >60 or ≤0.6. Drop rows with missing 'gender' values.7. Filter DataFrame by 'face_score' ≥ 2, removing low-quality images.8. Convert 'full_path' elements to strings using str() and np.squeeze()

Development Stage

Stage	Description
Data Preprocessing	<ul style="list-style-type: none">9. Exploratory Data Analysis (EDA)10. Resized Image (150X150)11. Split Data in Training, Validation and Test12. Data augmentation with image generators
Model Building and Evaluation	<ul style="list-style-type: none">• CNN• Logistic Regression• Decision Tree
Development UI	<ul style="list-style-type: none">• Streamlit and Render

Exploratory Data Analysis(EDA)

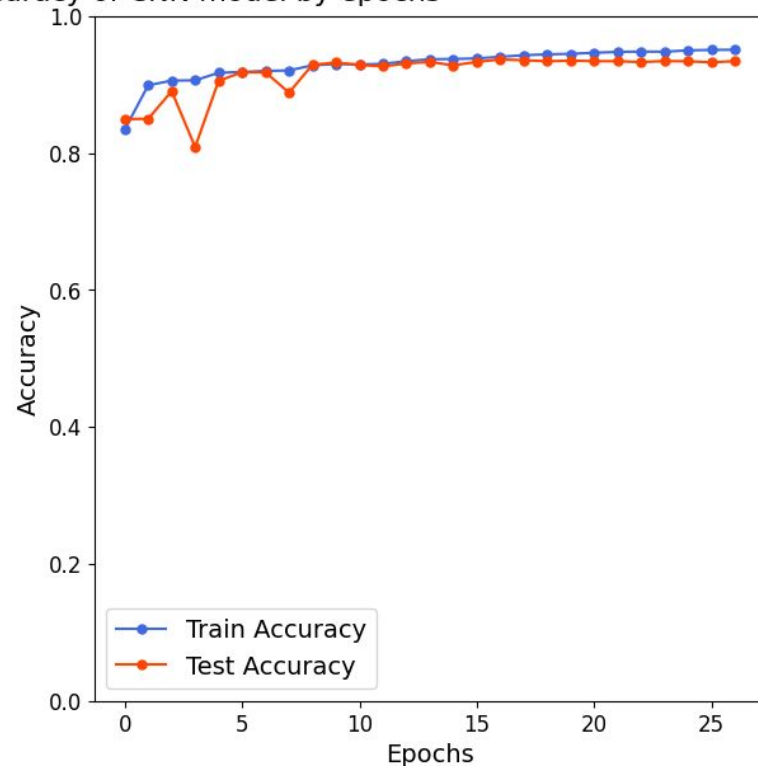
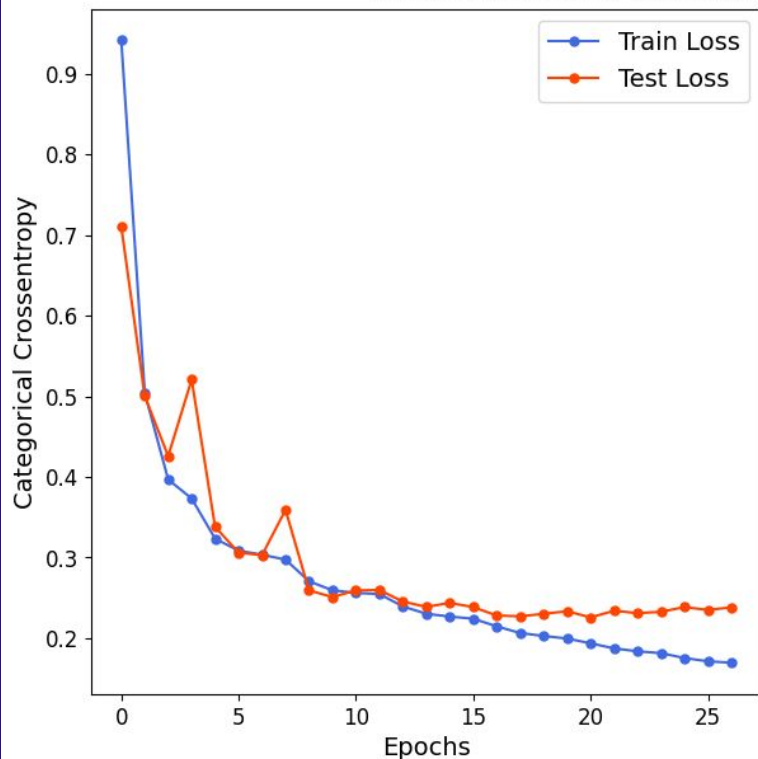


Model Results

Metric	CNN	Logistic Regression	Decision Tree
Accuracy	0.95 (Train) 0.93 (Test)	0.80 (Train) 0.56 (Test)	0.75 (Train) 0.68 (Test)
Precision	0.93 (Male) 0.94 (Female)	0.57 (Male) 0.55 (Female)	0.49 (Male) 0.47 (Female)
Recall	0.94 (Male) 0.93 (Female)	0.56 (Male) 0.56 (Female)	0.42 (Male) 0.55 (Female)
F1-Score	0.94 (Male) 0.93 (Female)	0.57 (Male) 0.56 (Female)	0.45 (Male) 0.51 (Female)

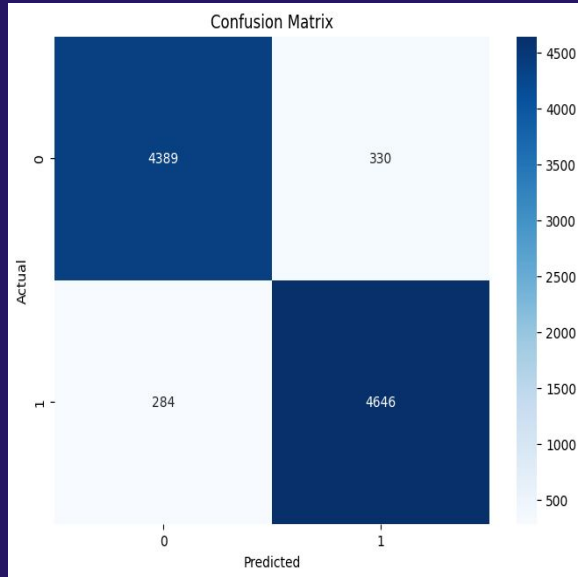
Model Results

Lineplots showing loss and accuracy of CNN model by epochs

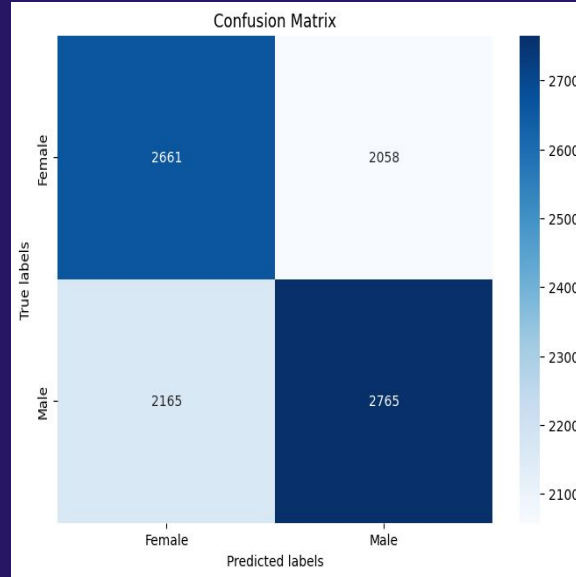


Model Results

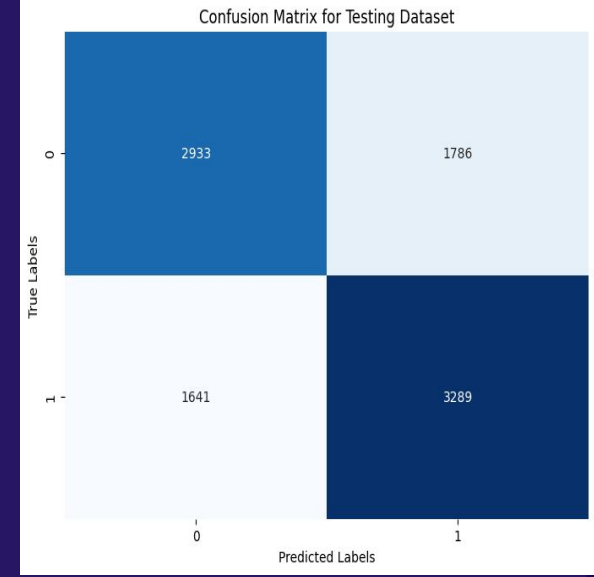
CNN



Logistic Regression

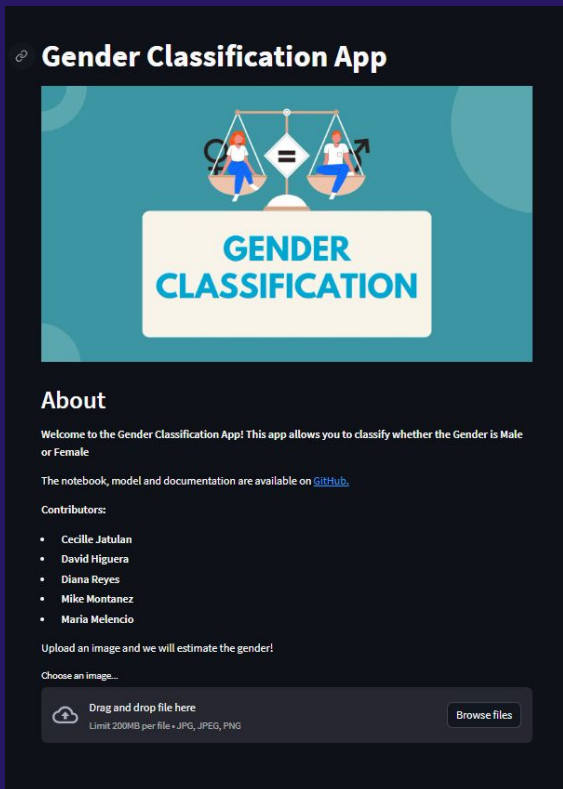


Decision Tree





USER INTERFACE



<https://gender-classification-wl8z.onrender.com/>