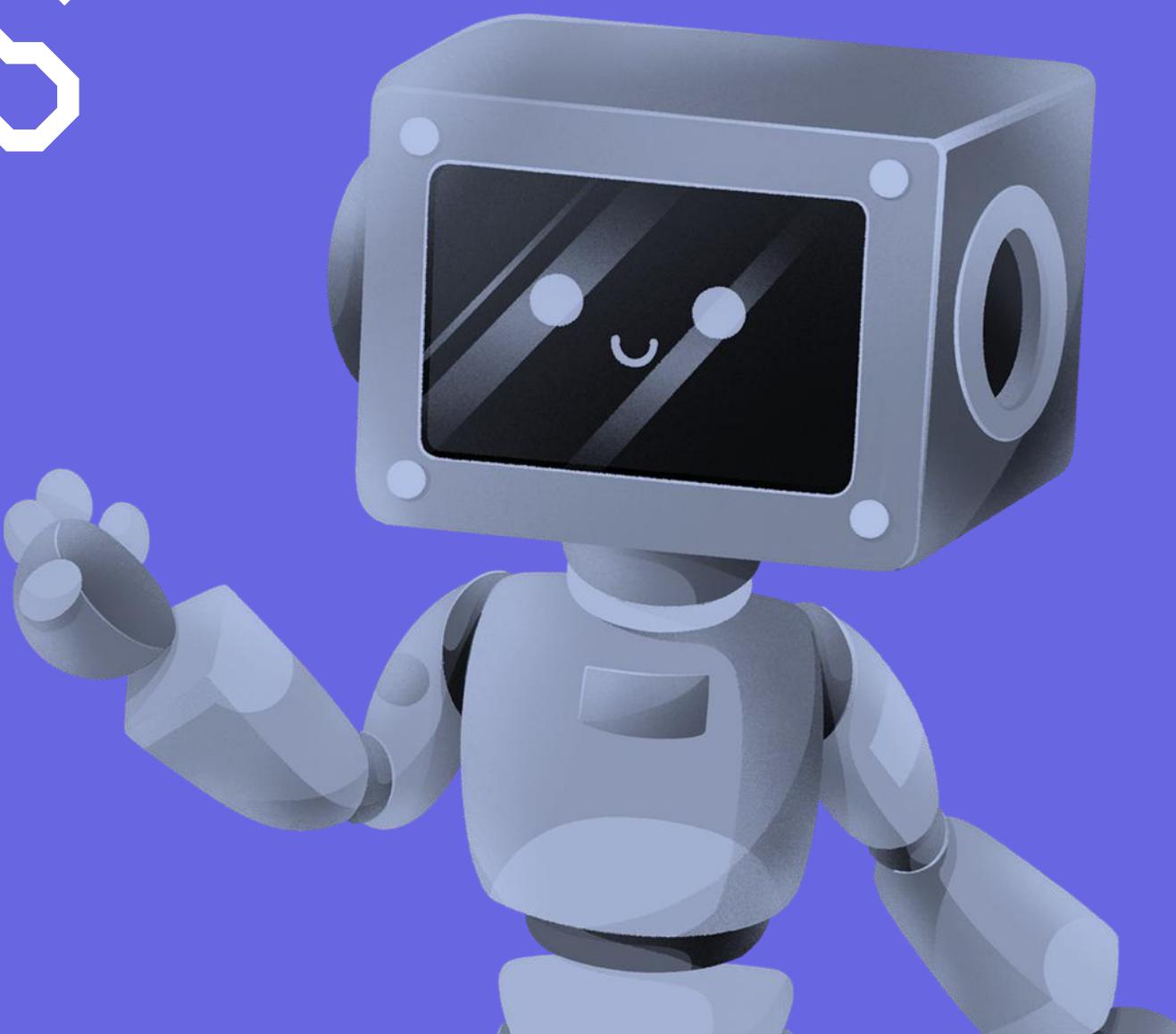


DEPI-MICROSOFT MACHINE LEARNING

FACE ANALYTICS

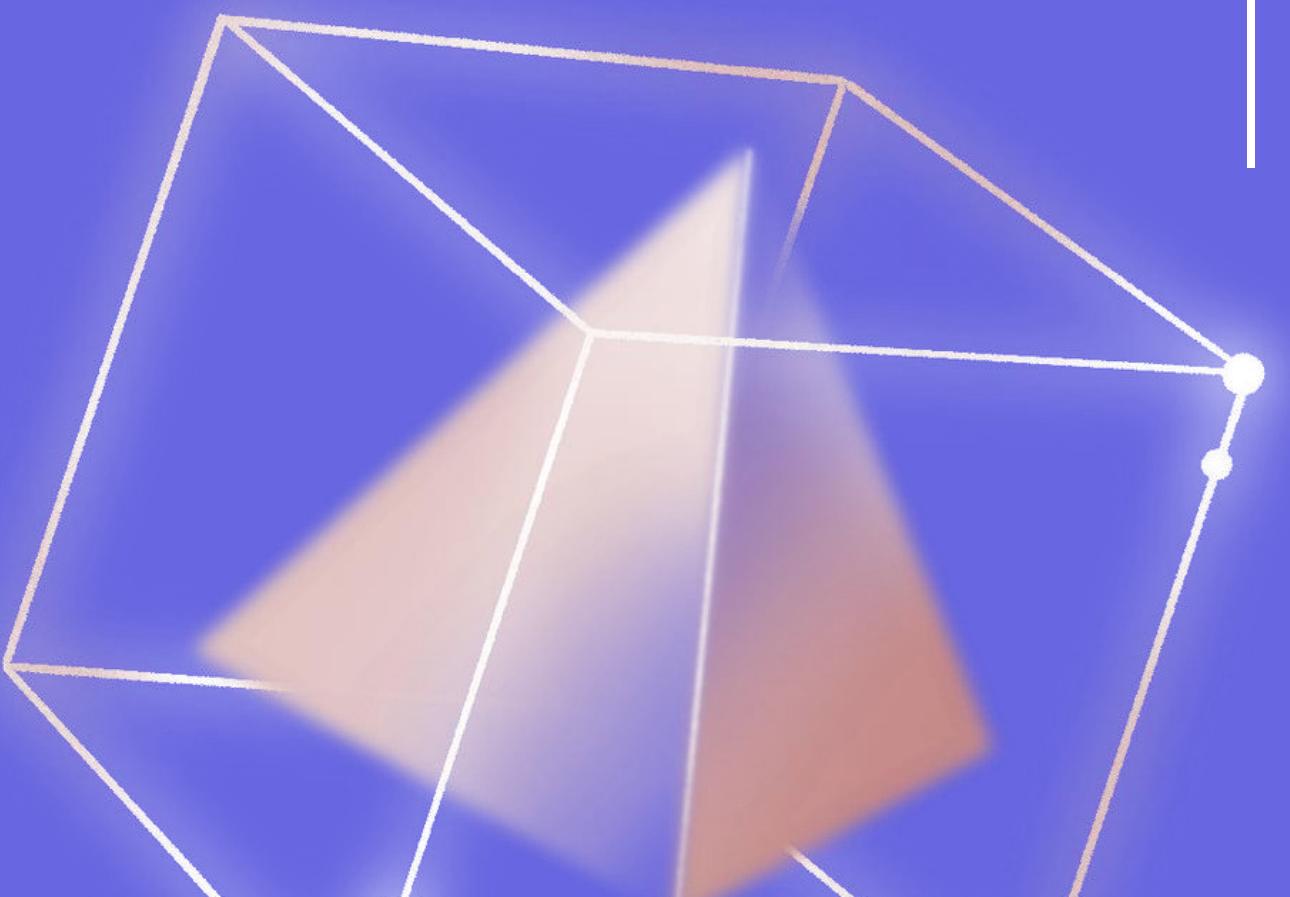
By : Mennatallah Mohamed Taha
Yara Hesham Mohamed Elmowafy

SUPERVISED BY: ENG/ AYA HISHAM



CONTENTS

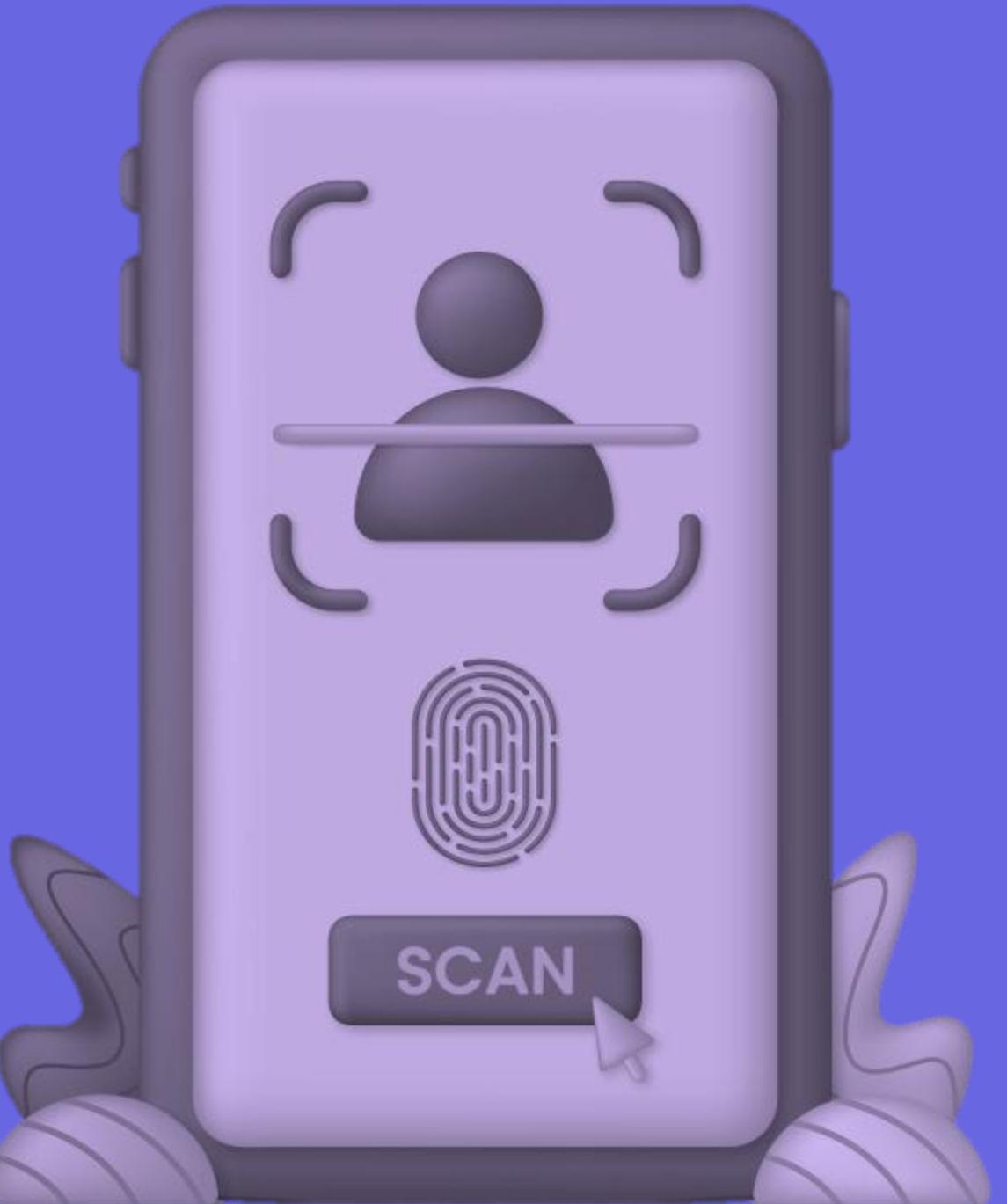
- 01 • Problem statement
- 02 • System diagram
- 03 • Dataset
- 04 • Data preprocessing
- 05 • Model architecture
- 06 • Model evaluation
- 07 • Model Deployment



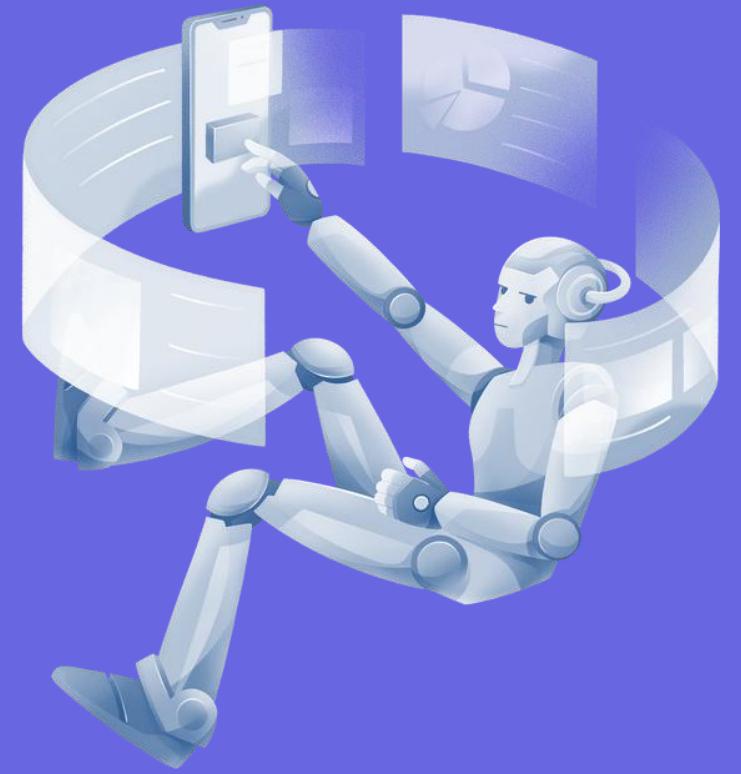
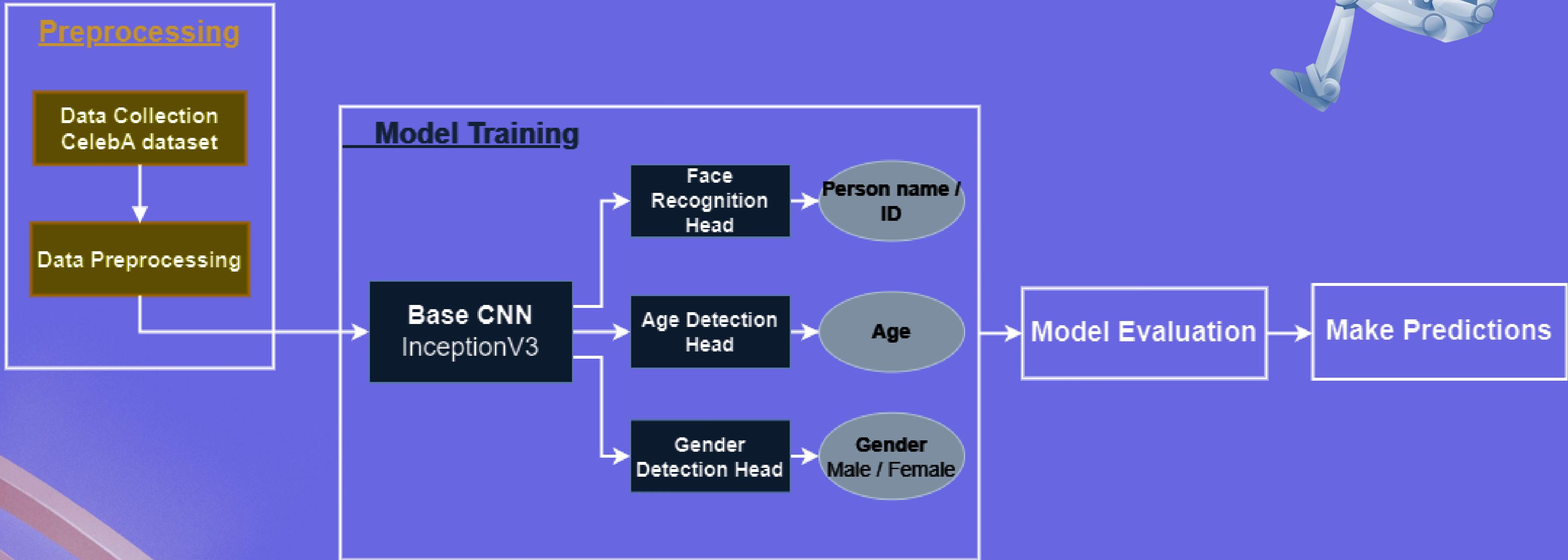
PROBLEM STATEMENT

"Multitask Face Recognition with Age and Gender Detection using Deep Learning"

This project aims to build a multi-task learning model that can simultaneously perform face recognition, age estimation, and gender classification.



SYSTEM DIAGRAM



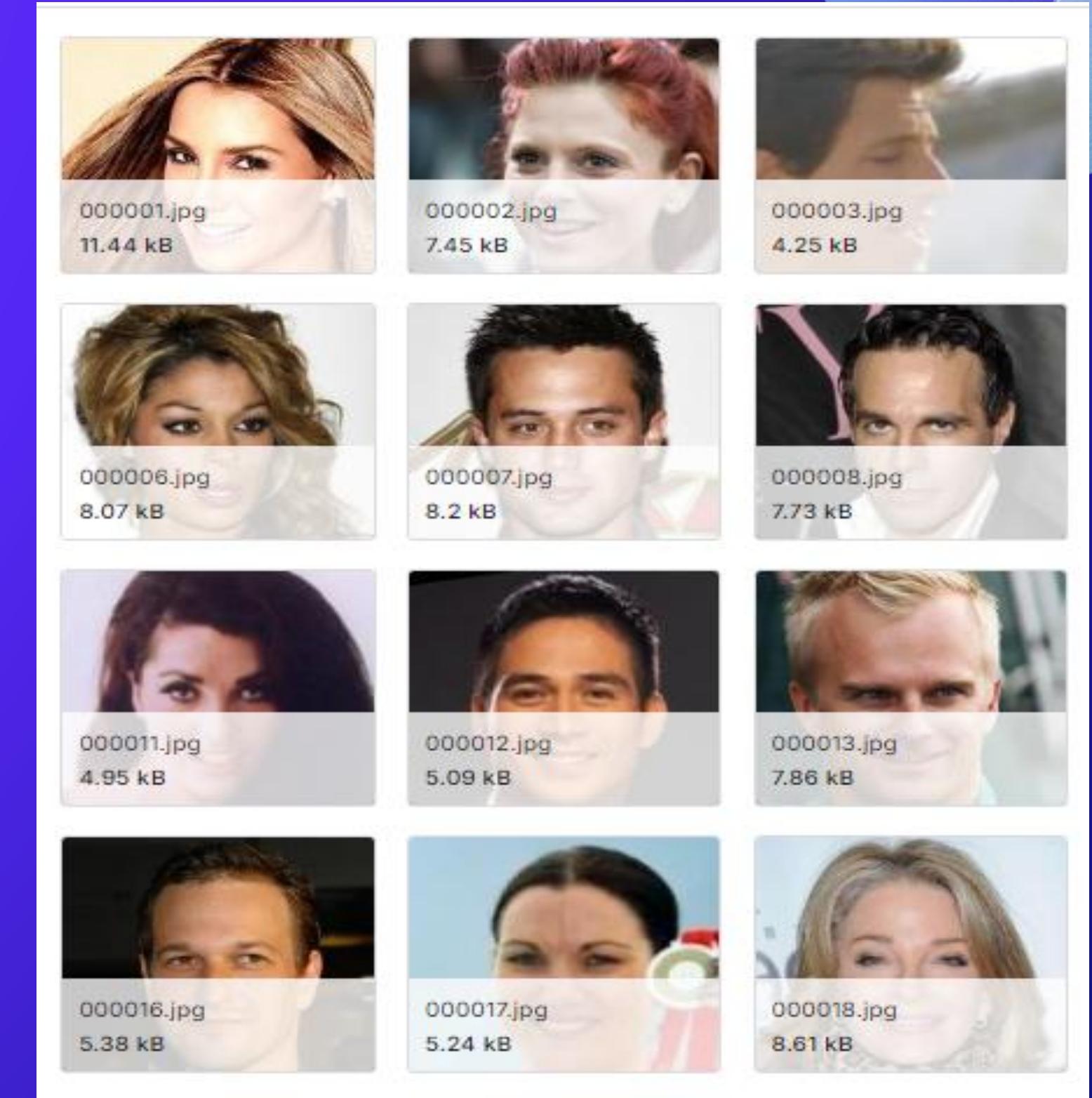
DATASET

CelebA Dataset

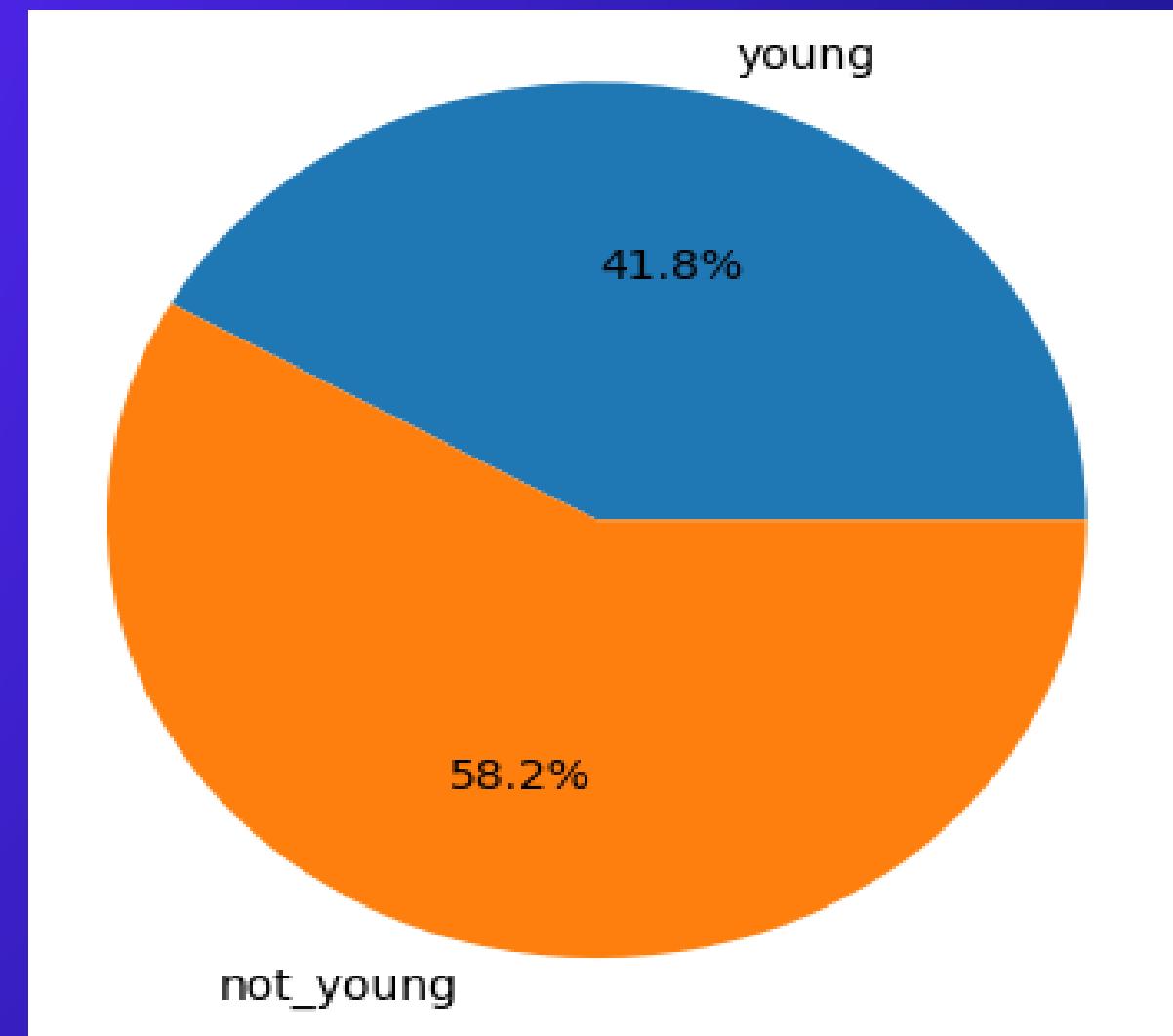
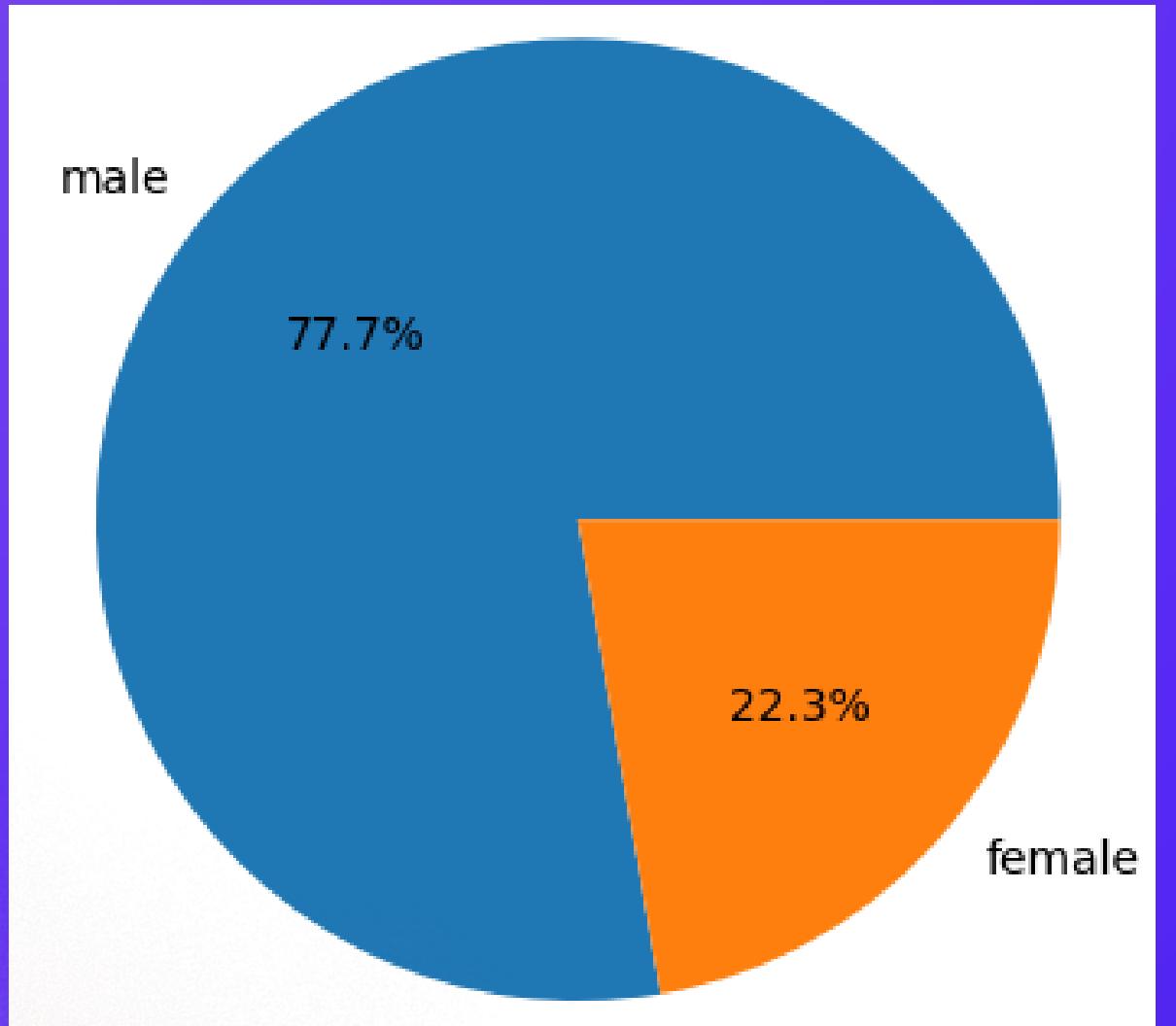
- 202,599 number of face images
- 10,177 number of identities

Attributes

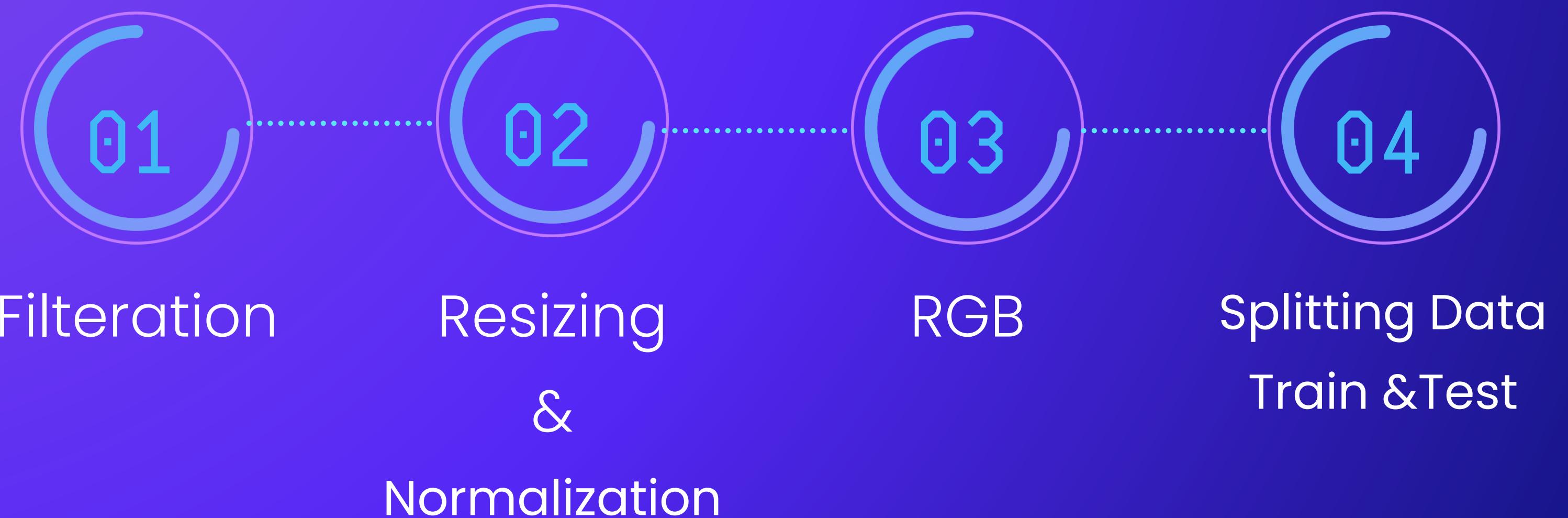
- ID
- Attractive
- Young /Not Young
- Male /Female
- Blond Hair
- Black Hair
- Big Nose
- Big Lips



DATASET STATISTICS



PREPROCESSING

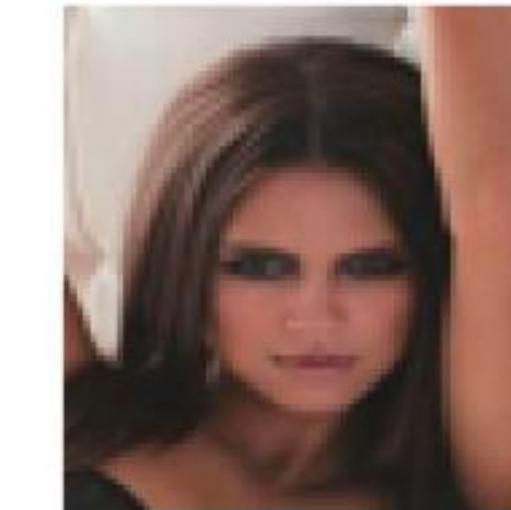


PREPROCESSING

Gender: Female, Age: Young



Gender: Female, Age: Young



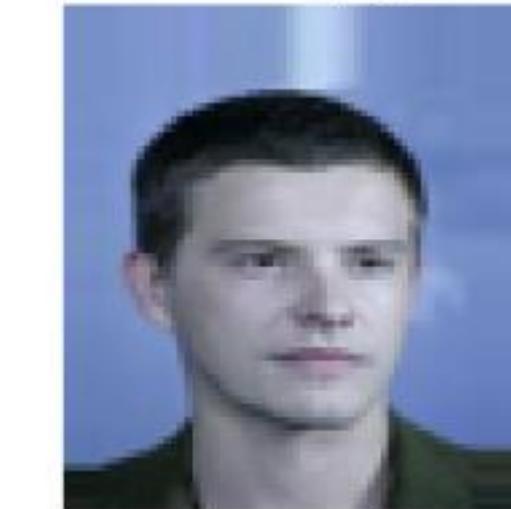
Gender: Female, Age: Young



Gender: Male, Age: Not Young



Gender: Male, Age: Young



Gender: Male, Age: Young



Gender: Female, Age: Young



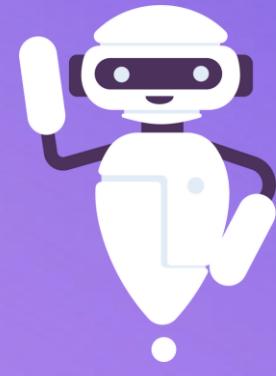
Gender: Female, Age: Young



Gender: Female, Age: Young



DATA LOADING (MATCHING TRIPLETS)



ANCHOR

The Original
Image



POSITIVE

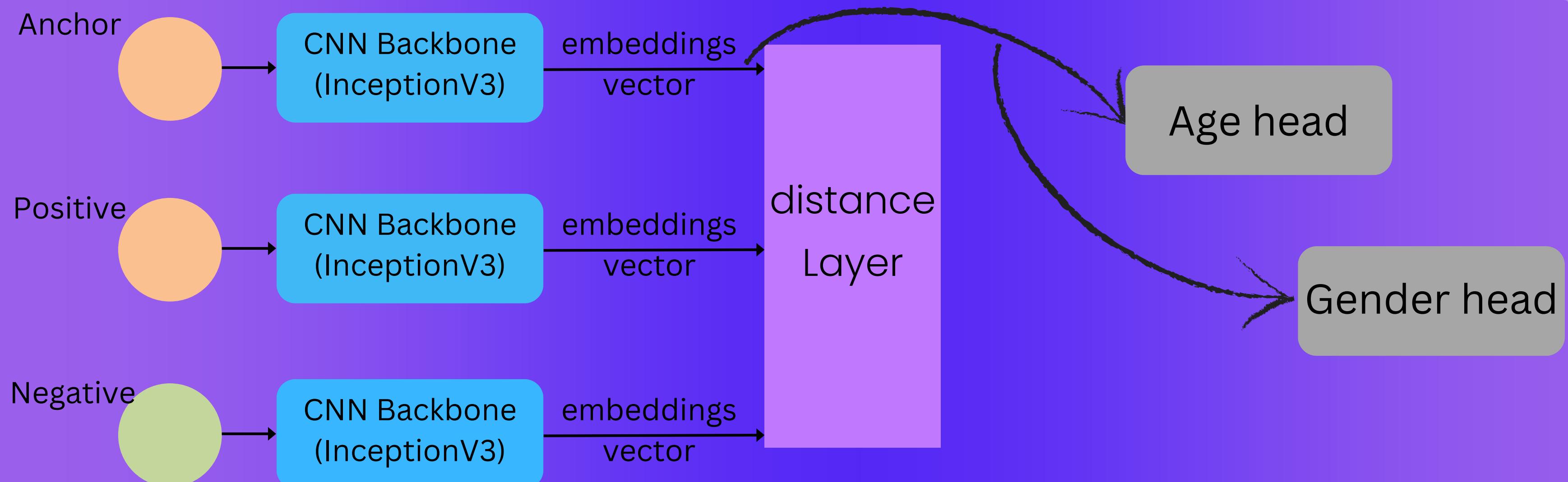
The Same
Person



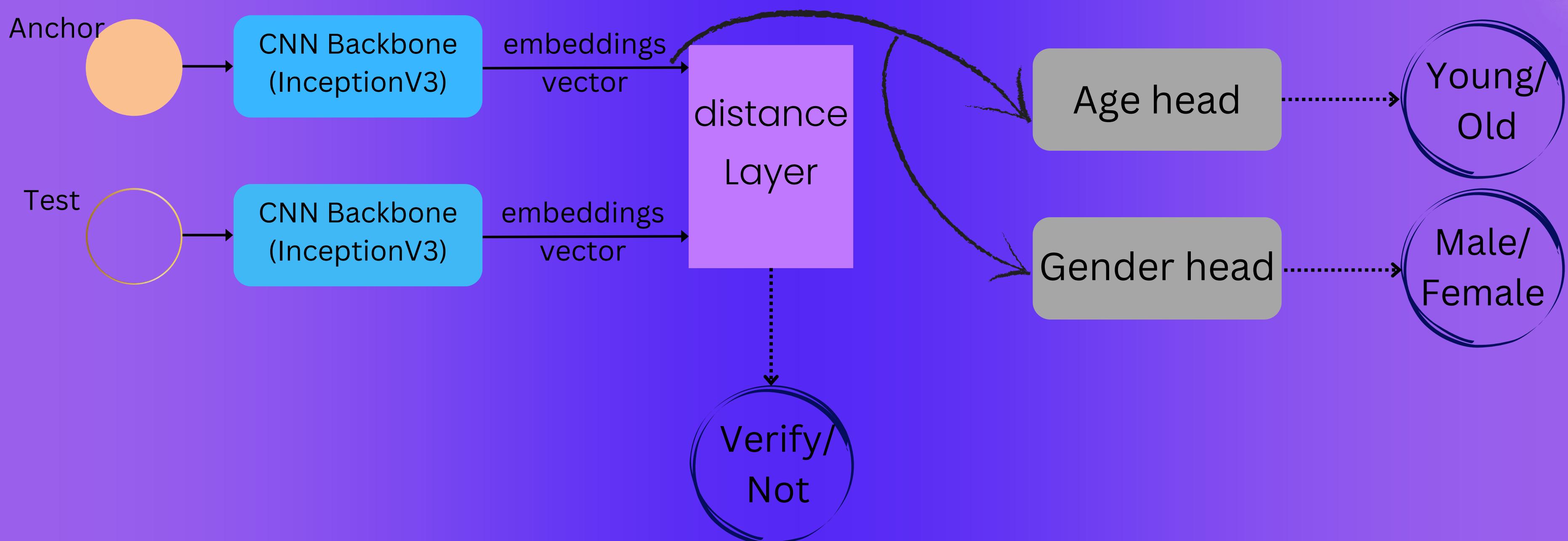
NEGATIVE

Another
Person

MODEL ARCHITECTURE



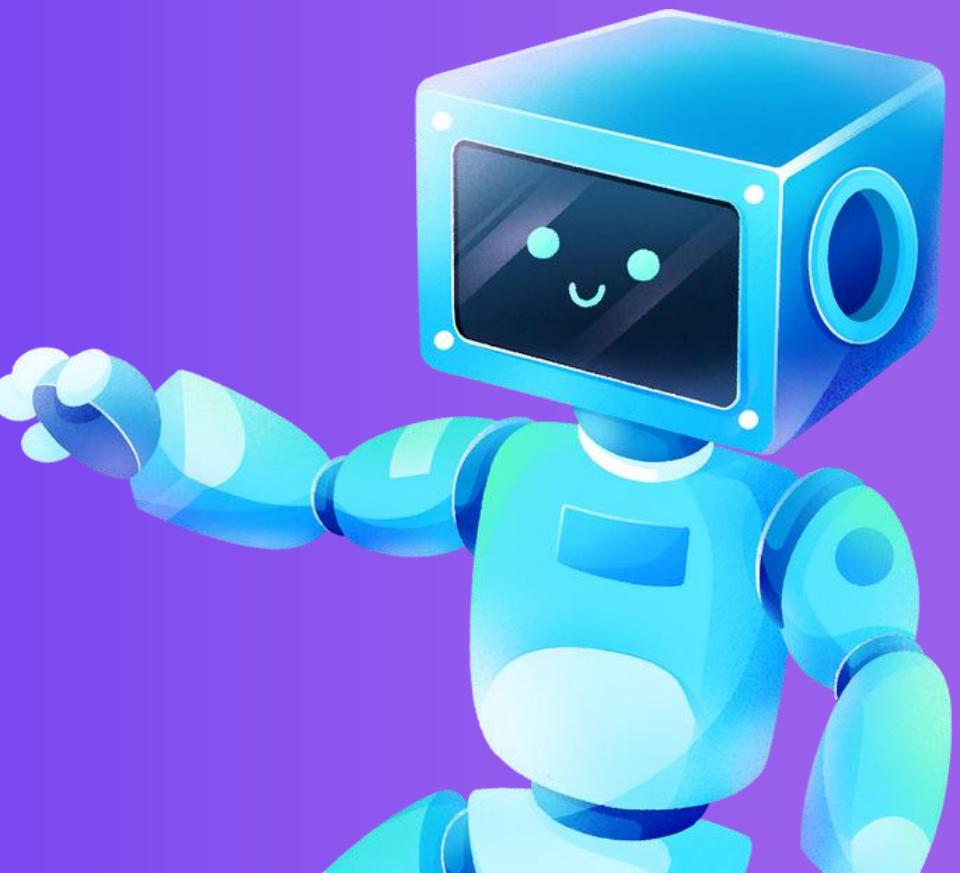
INFERENCE





MODEL EVALUATION

- | | |
|-----------------------------|---|
| • Training dataset | Age accuracy: 0.80
Gender accuracy: 0.79. |
| • Validation dataset | Age accuracy: 0.76
Gender accuracy: 0.83. |
| • Test dataset | Age accuracy: 0.77
Gender accuracy: 0.83
Positive accuracy: 0.69
Negative accuracy: 0.60 |





MODEL DEPLOYMENT

Using Flask API & Frontend

Making A website

user can upload Image of A specific person
and Another Image

Model predict if that is the same person or not
and detect his Gender and age



INTERFACE PAGE



Image Classification

Upload Anchor Image:

No file chosen

Upload Test Image:

No file chosen

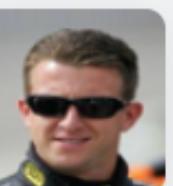
Results

Gender: Male

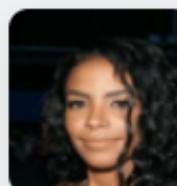
Age Classification: young

Verification: Negative

Anchor Image



Test Image



INTERFACE PAGE



Image Classification

Upload Anchor Image:

No file chosen

Upload Test Image:

No file chosen

Results

Gender: Female

Age Classification: young

Verification: Negative

Anchor Image



Test Image



INTERFACE PAGE



Image Classification

Upload Anchor Image:

No file chosen

Upload Test Image:

No file chosen

Results

Gender: Female

Age Classification: young

Verification: Positive

Anchor Image



Test Image



INTERFACE PAGE



Image Classification

Upload Anchor Image:

No file chosen

Upload Test Image:

No file chosen

Submit

Results

Gender: Male

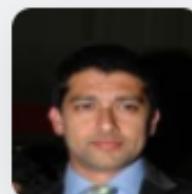
Age Classification: young

Verification: Positive

Anchor Image



Test Image



INTERFACE PAGE



Image Classification

Upload Anchor Image:

No file chosen

Upload Test Image:

No file chosen

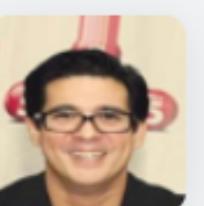
Results

Gender: Male

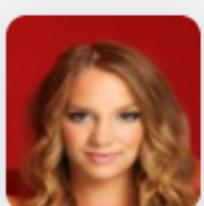
Age Classification: Old

Verification: Negative

Anchor Image



Test Image



Github Link:

https://github.com/menna687/DEPI_FaceAnalytics/tree/main

Visit this link for the complete project source codes and implementation details.

THANK YOU!

