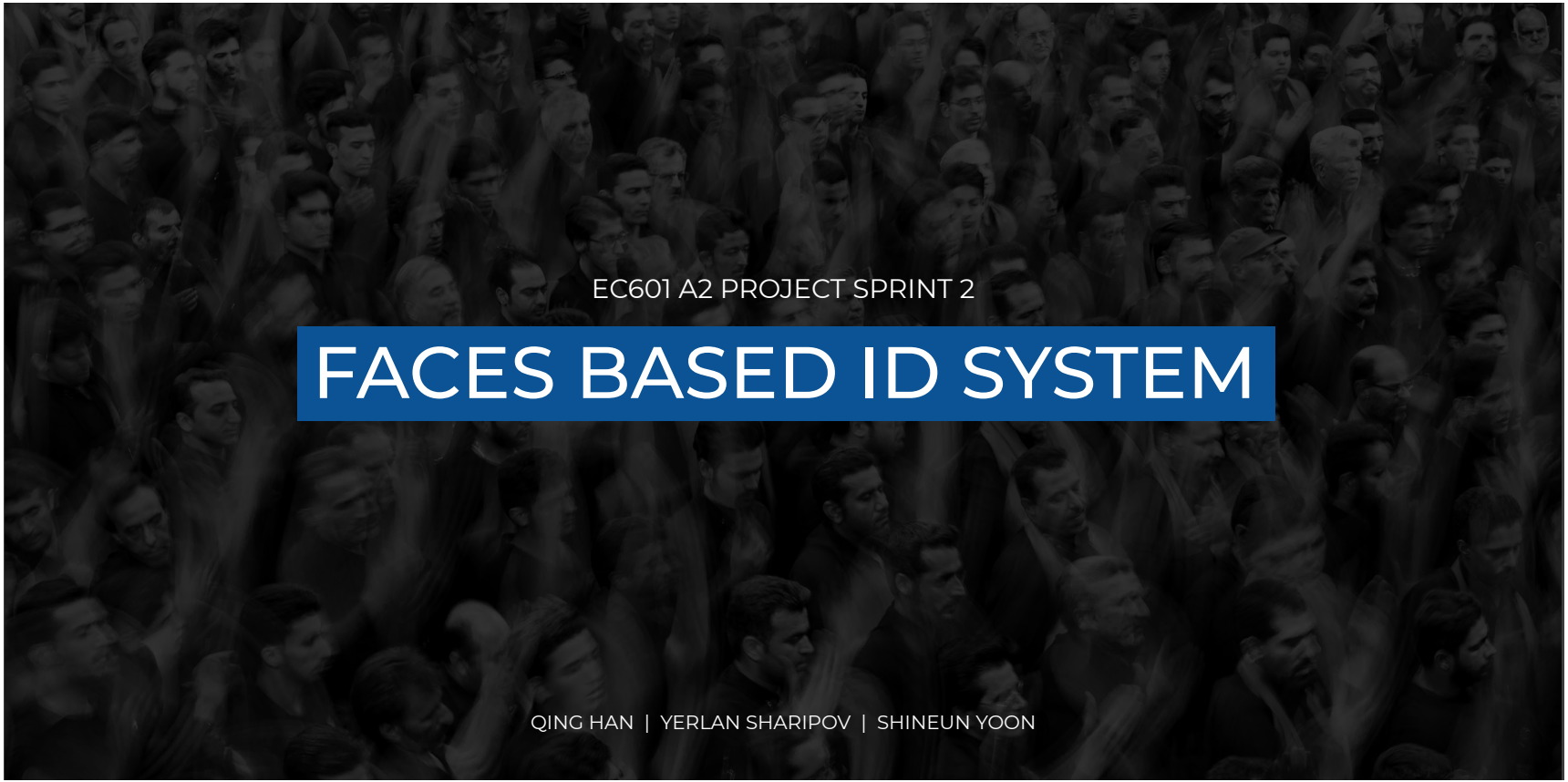
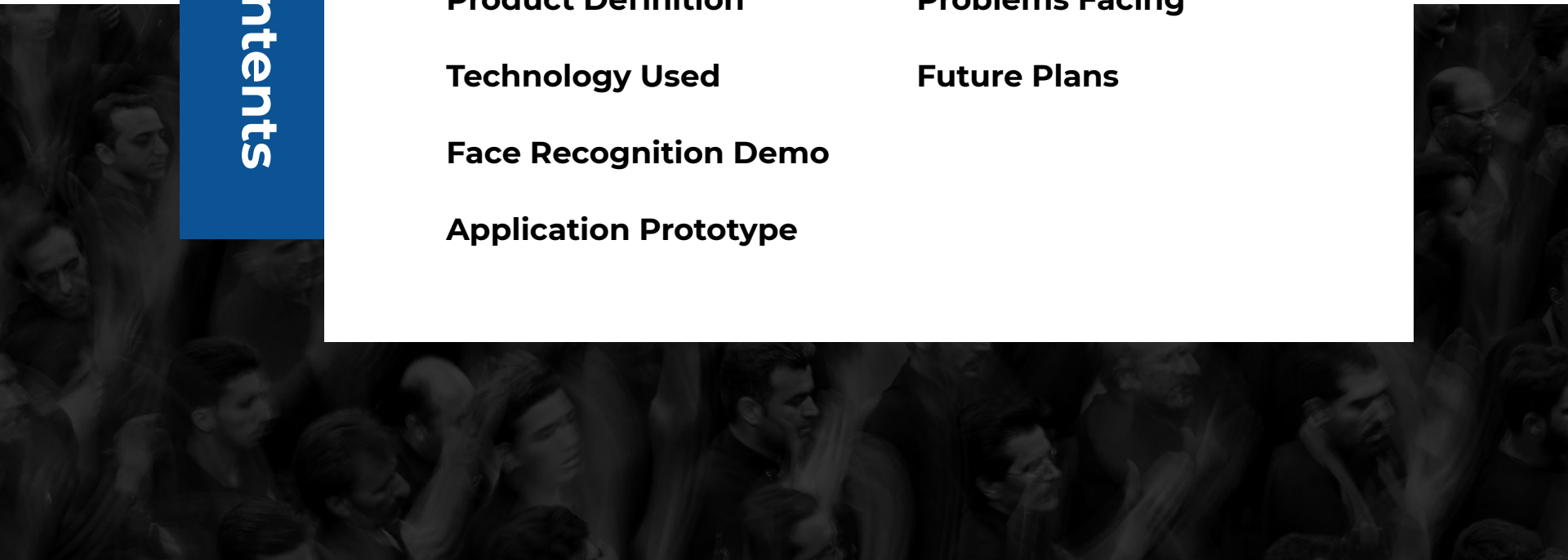


EC601 A2 PROJECT SPRINT 2

FACES BASED ID SYSTEM

QING HAN | YERLAN SHARIPOV | SHINEUN YOON

Contents

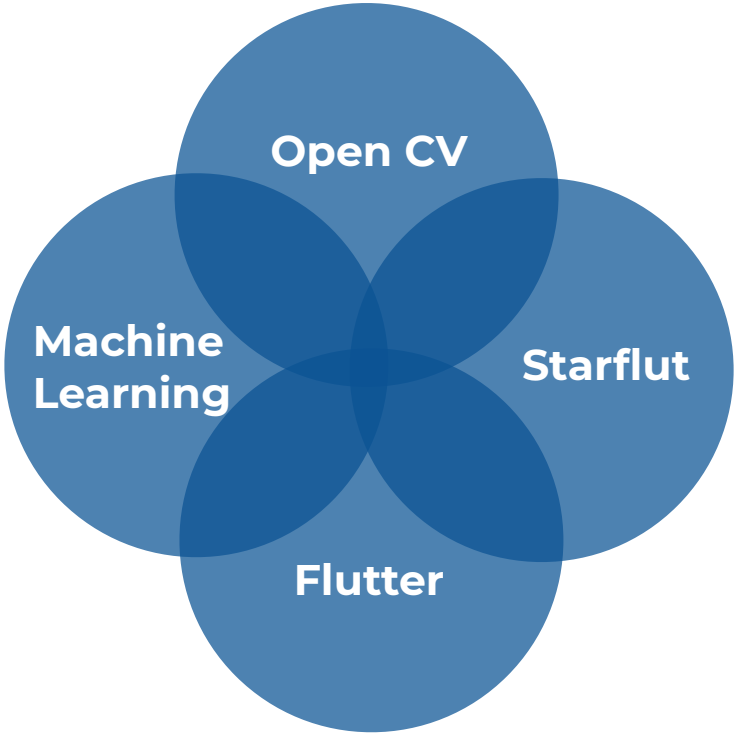


Product
Definition

Attendance Application

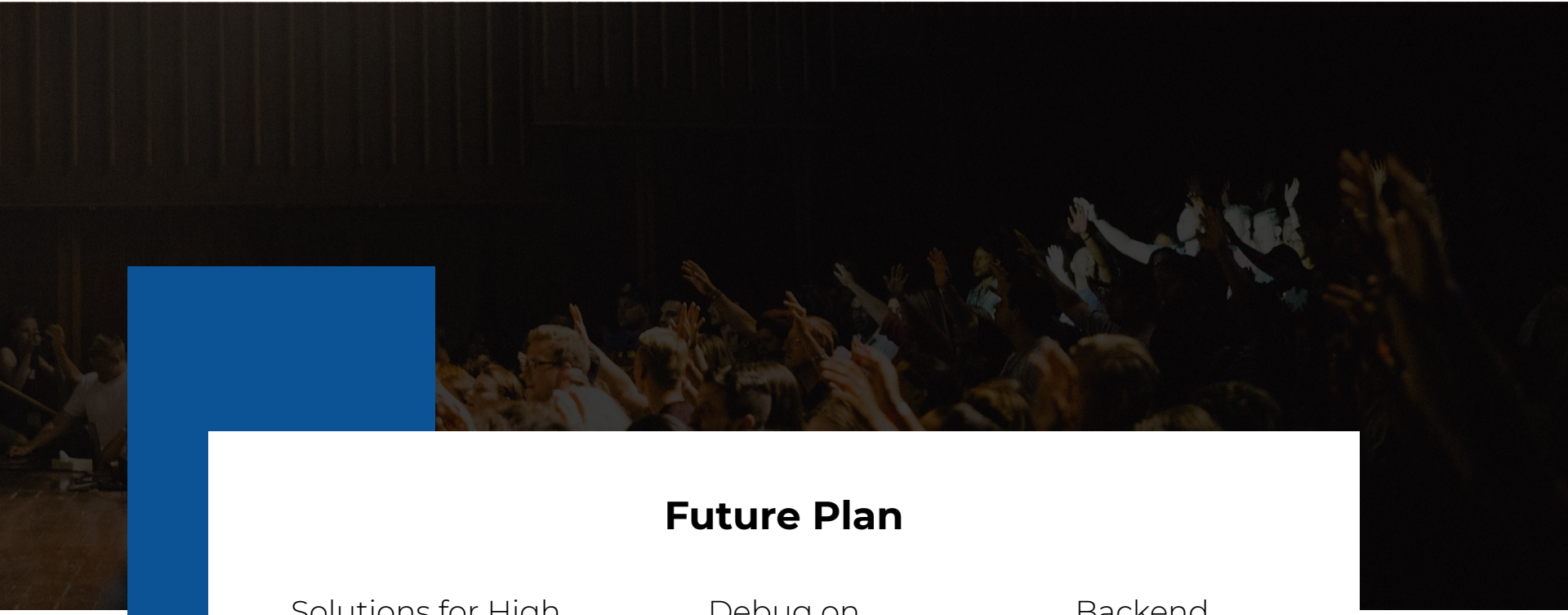
For Students
& Faculty members

Technology Used



Face Recognition Demo

Application Prototype



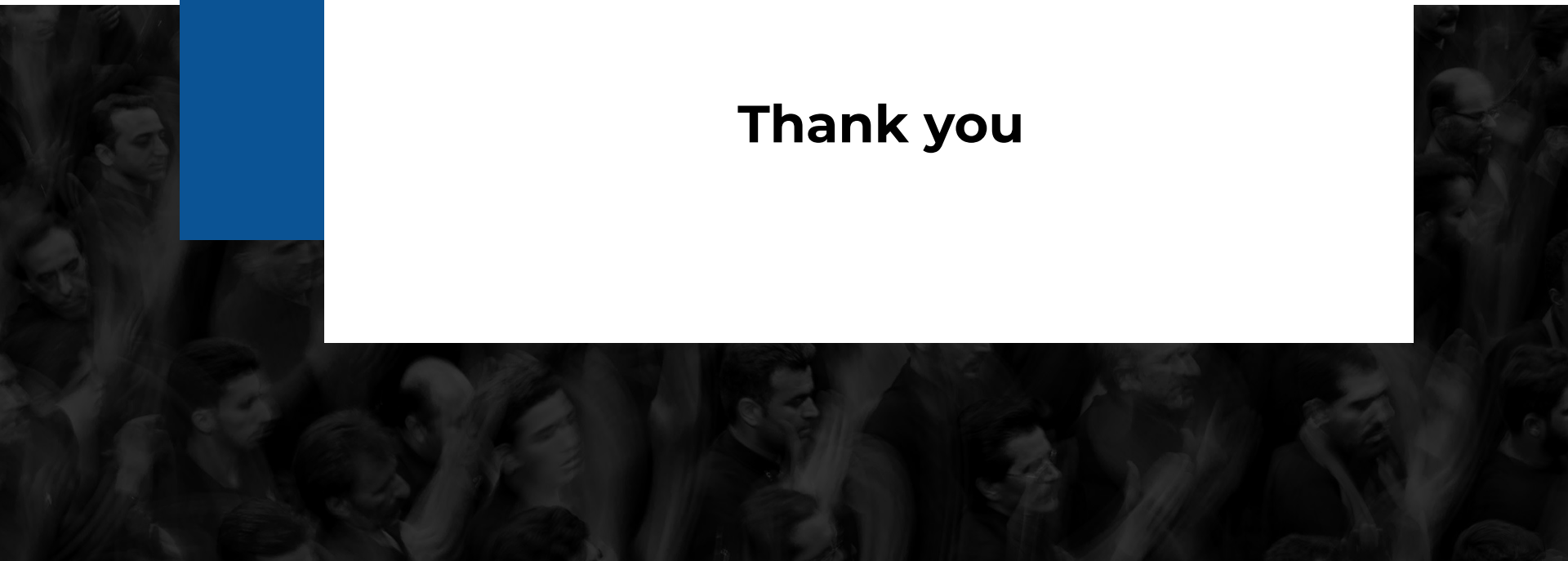
Future Plan

Solutions for High Resolution Pictures

Debug on Firebase Connection

Backend Configuration

Thank you



Product mission

Target user(s)

Schools (Classroom Access, Dormitories)

Libraries

Companies (Educational Testing Services)

Residents (Visitor Access Control)

User Stories

As a building’s administrator I want to improve security by implementing access system based on face recognition

As a lector I want to track class attendance using reliable method and without spending much time

As a hospital associate I want to identify a person who has a accidence without documents to facilitate the hospital check-in process.

As an apartment owner I want to define the list of people who allowed to enter

As a representative of Education Testing Services I want to authenticate a person before they start the exam

Minimum Viable Product

The system which can authenticate and authorize access to premises based on face recognition.

User Interface Design

- iOS Application

  Upload images

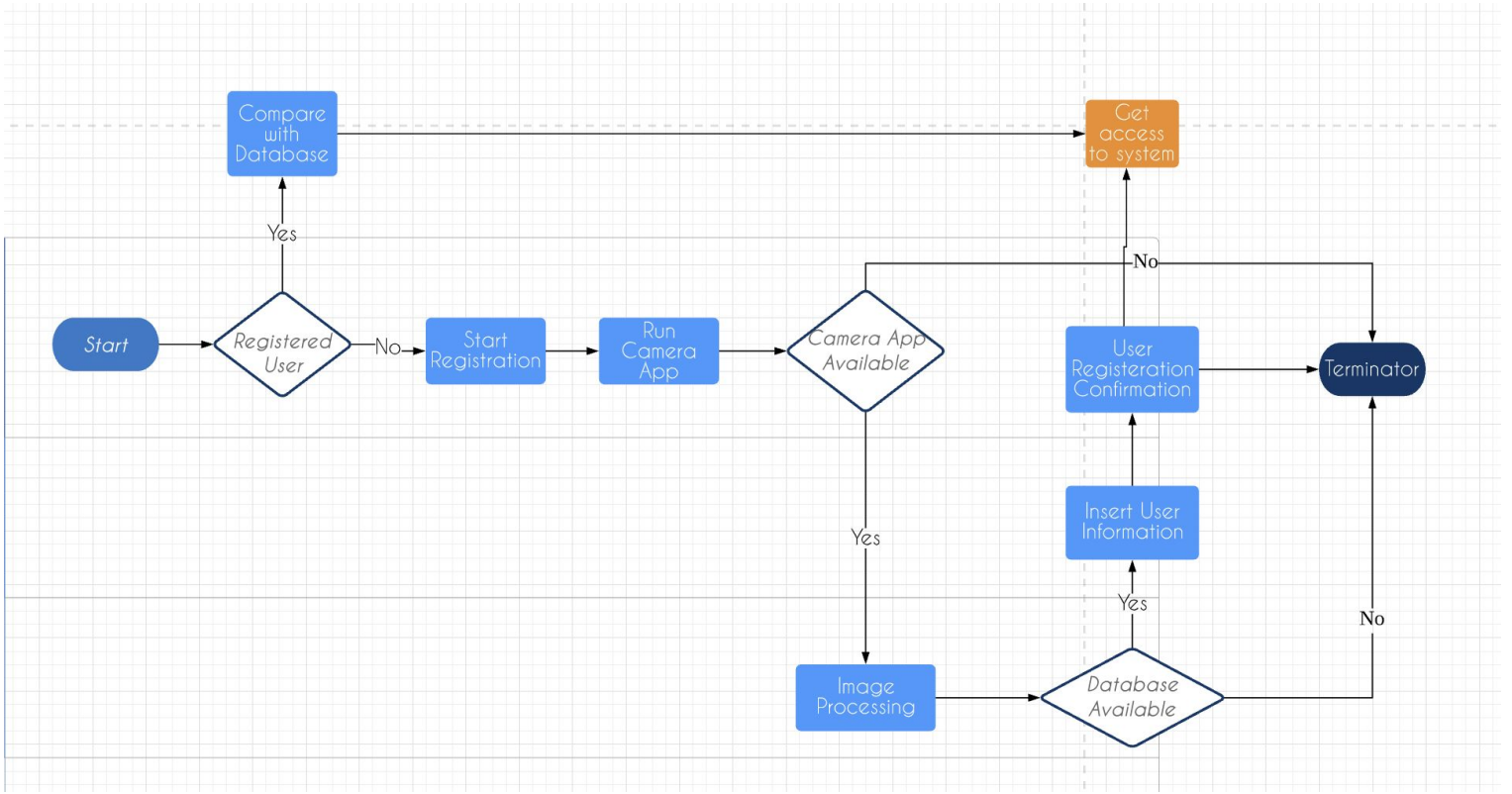
  Take pictures

  (New user)Fill in users’ information

  Display user’s information

Product Survey

System Design



Component and Technology

User Interface

Framework: CoreML

Pros:

- Simply integrate machine learning models into App
- Can use a wide variety of other machine learning libraries and then use CoreML Tools to convert the model into the Core ML format
- Support vision for analysis images
- Easely to call Mac camera

Facial Recognition

Theory

- Data Gathering: Gather face data (face images in this case) of the persons you want to identify.
- Train the Recognizer: Feed that face data and respective profile of each face to the recognizer so that it can learn.
- Recognition: Feed new faces of that people and see if the face recognizer you just trained recognizes them.

Facial Recognition

Algorithm: OpenCV

Pros:

- Wide library for image processing and python

Dataset

- More images used in training, the better!

- Dataset: Different ‘faces’ for each person, ex. with glasses, without glasses, laughing, sad, happy, crying, with a beard, without a beard, etc.

- Database: Profile for each person