ATTENDANCE MATE

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GOALS AND OBJECTIVES

Objective 1

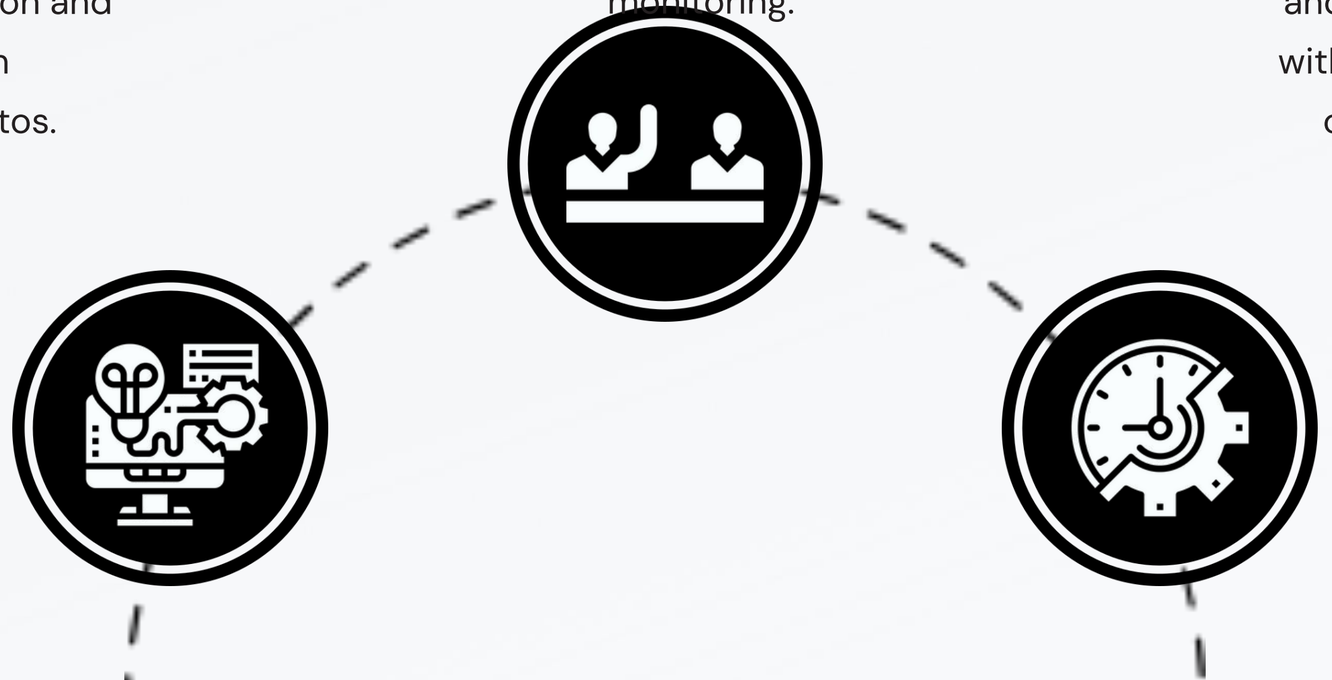
Develop a Python-based facial recognition system with ML algorithms for accurate face detection and recognition from app-captured photos.

Objective 2

Implement the system to streamline attendance in classrooms, reading halls, and mess areas, replacing traditional methods for efficient, cost-effective monitoring.

Objective 3

Utilize the system to mark attendance in real-time, enhancing overall efficiency and student engagement without requiring physical camera installations.



WORKING

Capture an Image

Black-box

CHECKS IF THE PERSON IS SAME

"Yes"

ATTENDANCE MATCHED

"No"

ATTENDANCE NOT MATCHED

BLACKBOX

- Use YOLO to extract the face
- Use Keras VGGFace2 to extract face embeddings
- The embeddings of positive, anchor, and negative images are passed into the Siamese network which uses the Triplet loss function during training

WORK DONE

01

CAPTURE IMAGE

https://colab.research.google.com/drive/1CwRFTdMMSO7tiShFgHXa_mqwnxih1qWr?usp=sharing

02

YOLOV8

https://colab.research.google.com/drive/1lwH6pUz-o7FRxxqSYAgUatsNkhYTag6l?usp=sharing

03

MTCNN

https://colab.research.google.com/drive/1Mteo8sz1OehoxCDr4_ajPt07Y_DN80G-?authuser=1

04

SIAMESE NETWORK

https://colab.research.google.com/drive/1Qg3VNibMj6gUrX1su-hyle2XLq54k6UM?usp=sharing

FUTURE

TRAINING

We intend to fine-tune the model on a custom dataset prepared from images of IIT Bombay students

DEPLOYMENT

We still need to figure out the specifics and look into the deployment of such a model. Our current focus is training

BUDGET

Our projected budget as of now is 0

THANK YOU