



FACE RECOGNITION AND PCA

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Outline

- Introduction
- Implementation
- Results
- Conclusion

INTRODUCTION

- Applications of face detection.
- Seven facial expression:
 1. Anger
 2. Contempt
 3. Disgust
 4. Fear
 5. Happiness
 6. Sadness
 7. Surprise



IMPLEMENTATION

- Preprocessing of the image.
- Overall face extraction using Viola-Jones cascade face detector.
- Faces are extracted and cropped out.
- Calculation of Mean Image.
- PCA and dimensionality reduction via projection on eigenfaces.
- Sirovich and Kirby method for PCA.
- **Eigenfaces**

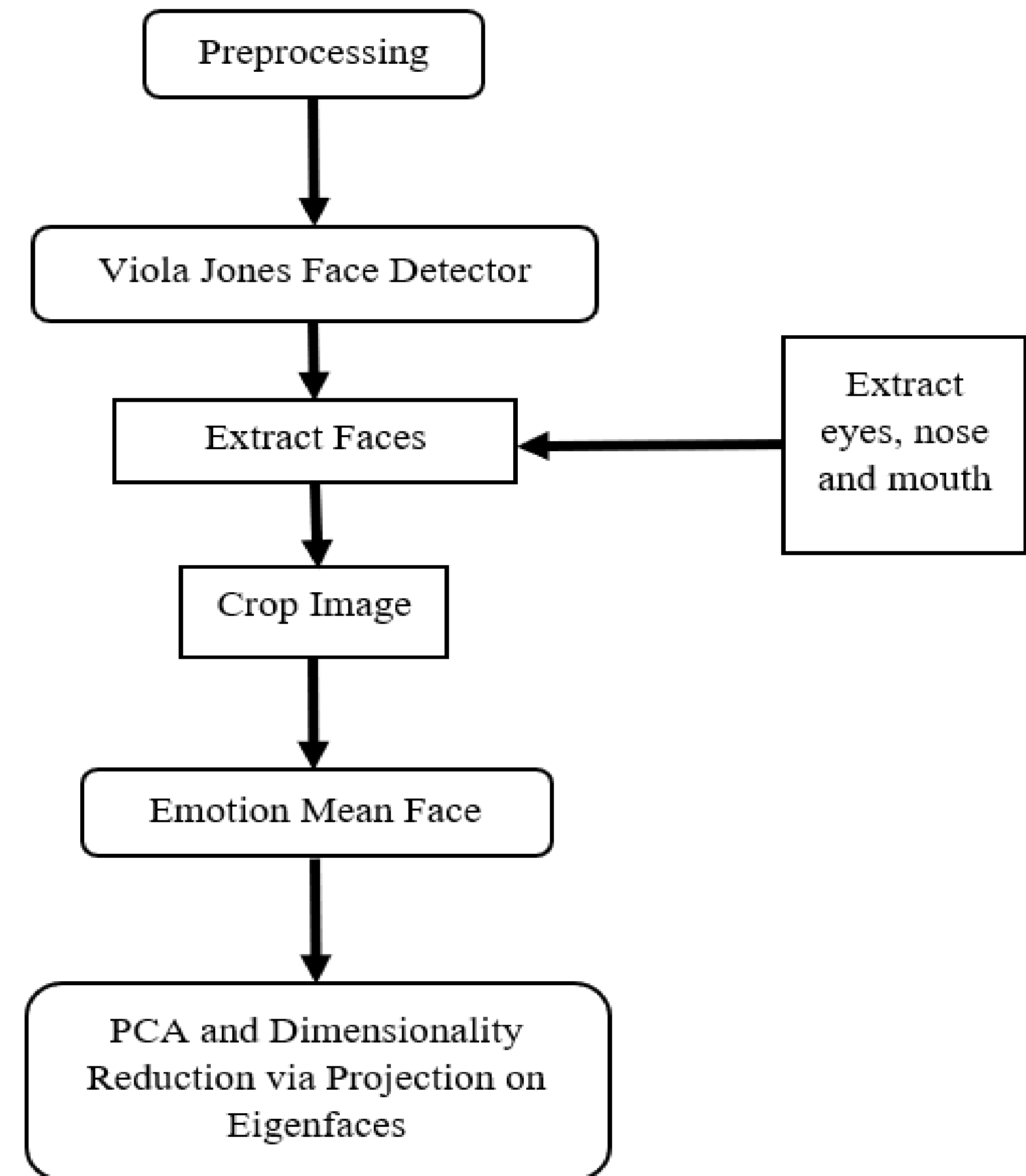
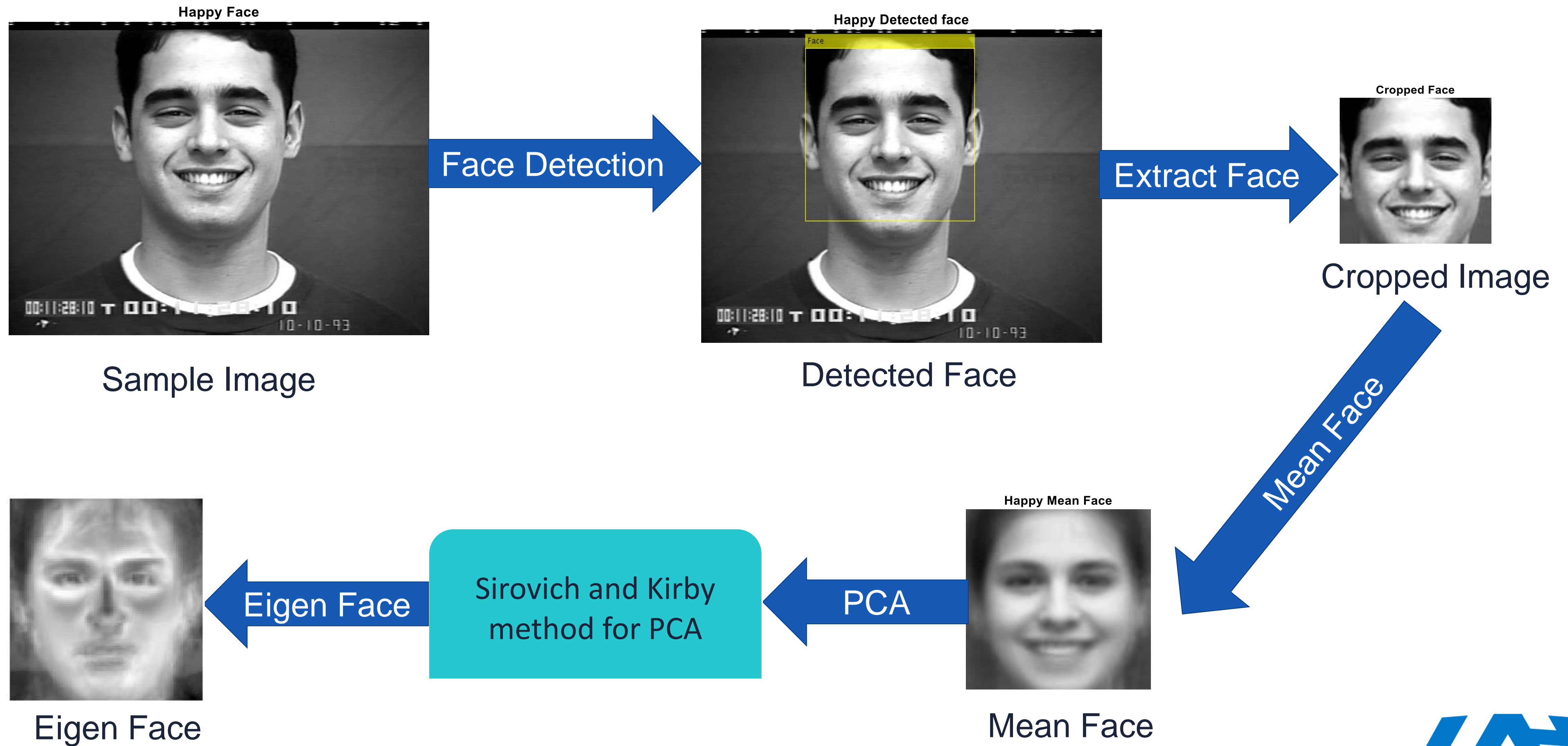


Figure 1: Flowchart of the algorithm.

RESULTS



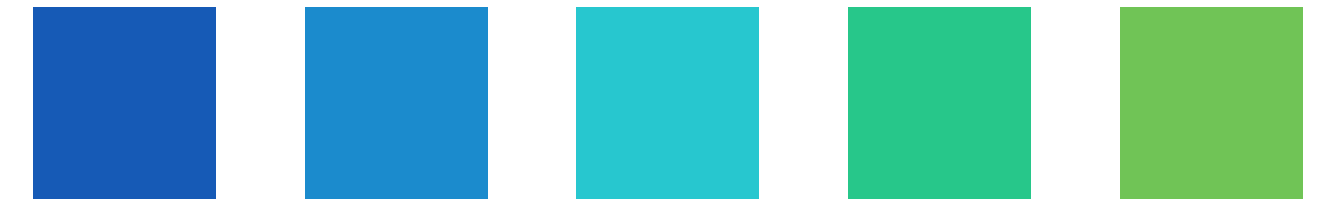
EIGENFACES

Top 10 Eigenfaces for All Face Images



CONCLUSION

- Face detection and PCA on the detected images is implemented in this project.
- Image processing involved steps to clean, color balance, and appropriate segmentation of the data.
- Implementation uses viola-Jones's Haar-like feature cascade detector.
- PCA was performed to obtain the eigenfaces.



Thank You!

Any questions?

