Sweet Shades:
Exploring a Framework for Augmented Reality

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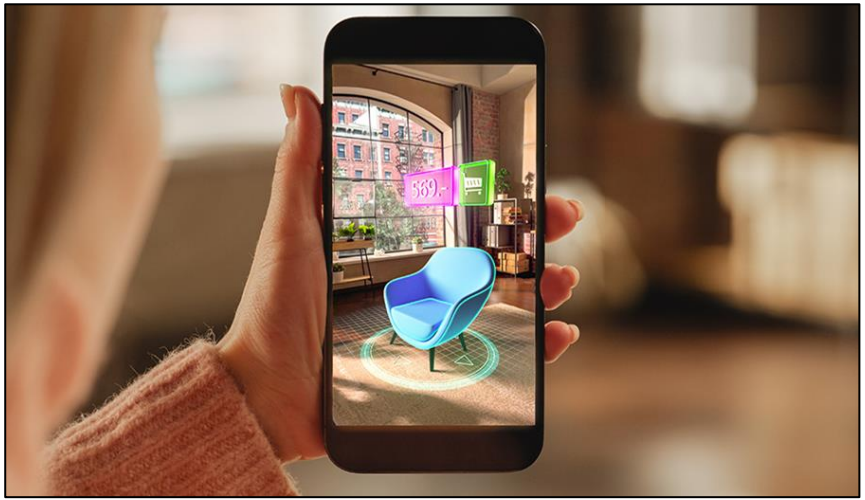
UCSB Four Eyes Lab

Applications of Mixing the Real and Virtual World



Augmented Reality (AR) layers digital content over the real world

Using Facial Detection to Build a Filter for Shades

Face

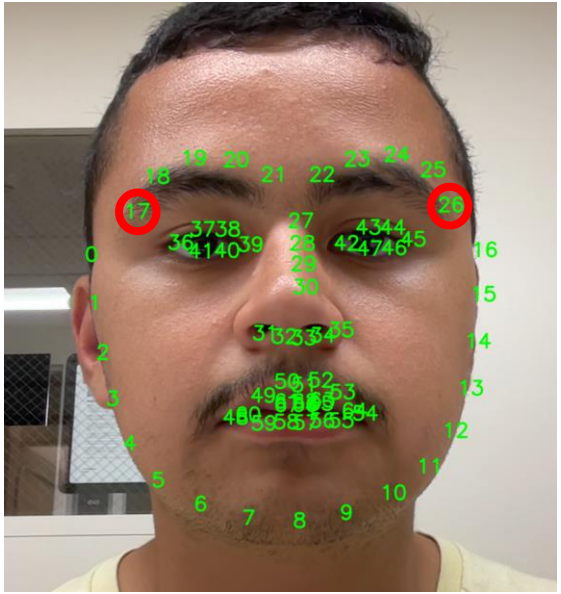
+

Shades

=

Shades Filter

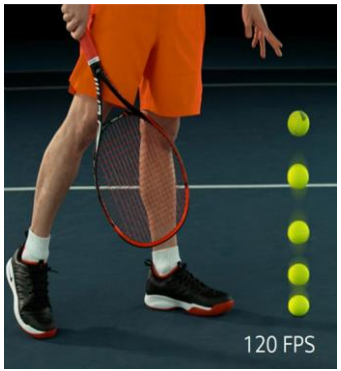
Using OpenCV for Facial Detection



Facial Keypoints

Points of interest on shades

Troubleshooting by Fixing a Performance Bug



x1

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import cv2
import numpy as np
```

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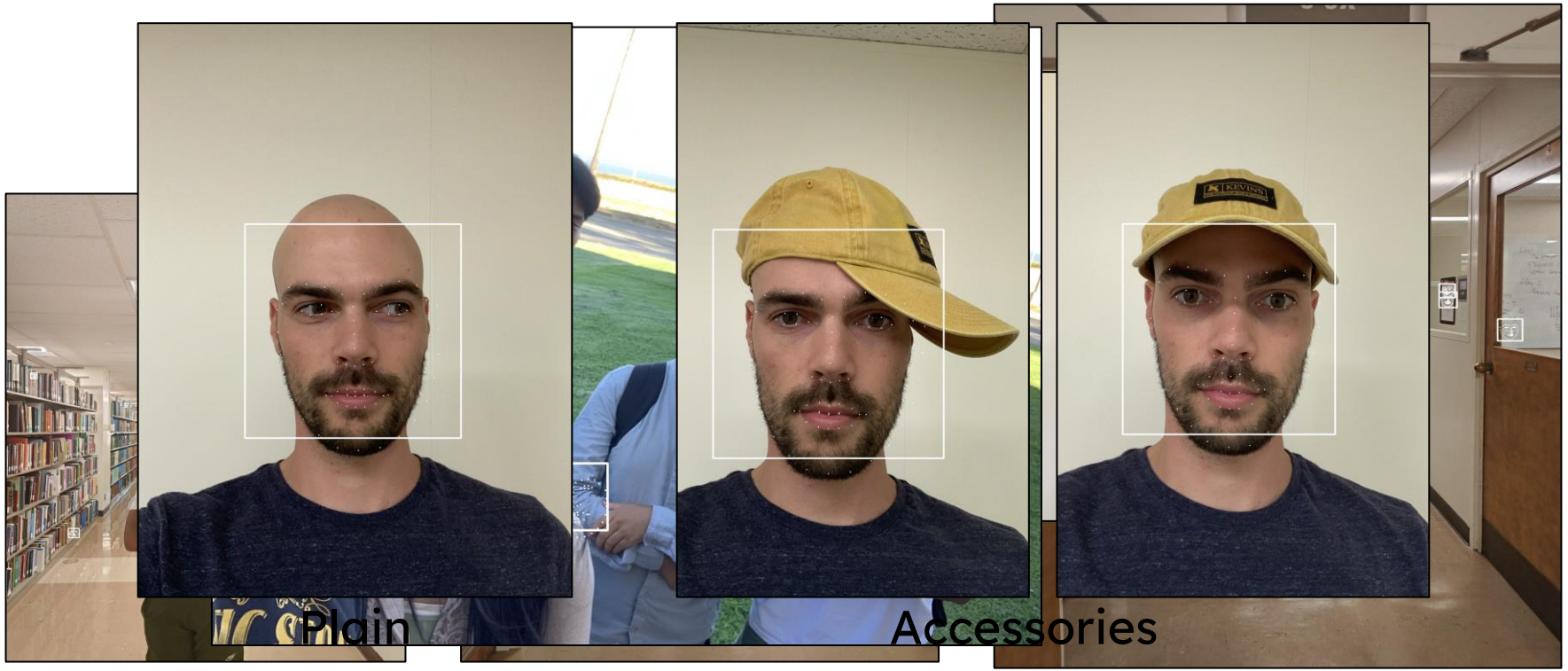
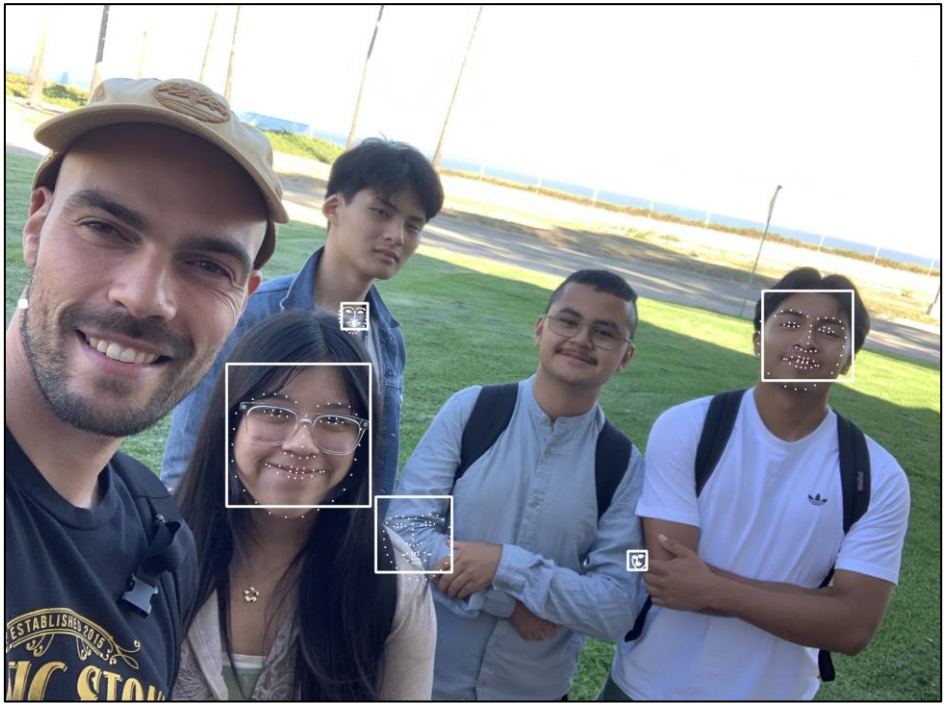
```
while True:
    # Loads a database for a facial detection algorithm
    face_detector = cv2.CascadeClassifier("haarcascade_frontalface_alt2.xml")
    # Loads the face landmark detector
    facial_landmark_detector = cv2.face.createFacemarkLBF()
    facial_landmark_detector.loadModel("lbfmodel.yaml")
```

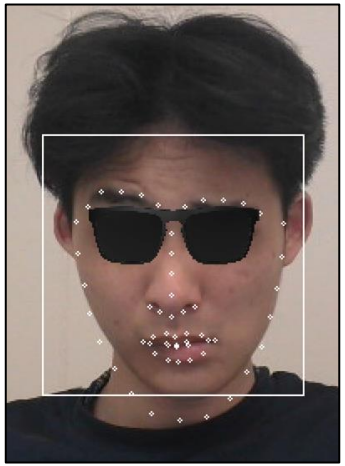
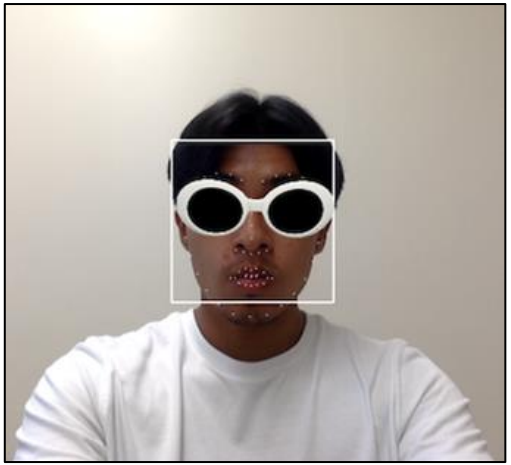
Testing Facial Detection Accuracy and Limitations

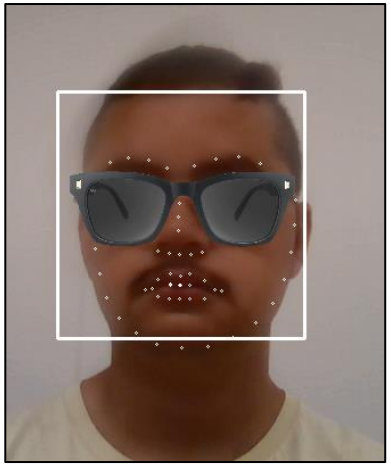


Testing Facial Detection with Multiple Variables



Improving Accessibility and Entertainment via AR



Acknowledgements

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