Face Recognition and Augmented Reality with Interactive Art/Music

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Introduction

The goal of this project is to use live video to create animations that respond to viewers and synchronize to music. In order to further develop the augmented reality on media entertainment products, I combined facial recognition features and music analysis to add animations to front-facing camera videos based on movements and musical elements.

What Did I Do?

- Real-time implementation in Python
- Integrate OpenCV face-recognition library
- Synchronized music playback, beats, and video display
  - Music beat timing captured from manual tapping
  - Implemented music amplitude detection
- Explored interaction and visualization techniques
  - Various effects follow facial features and synchronize to music beats

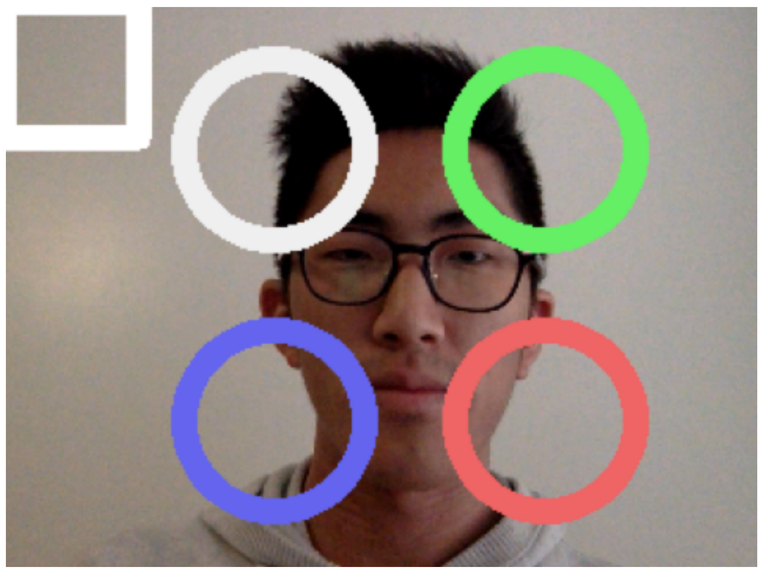
Related Work

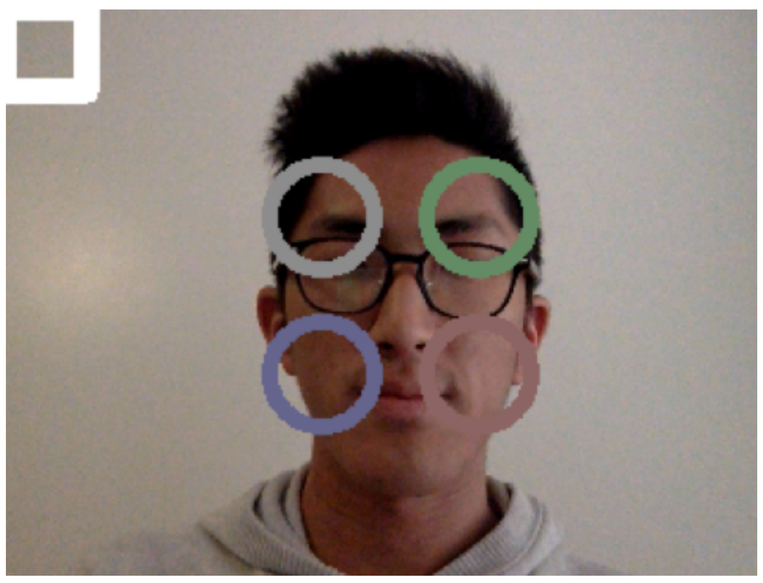
Snapchat

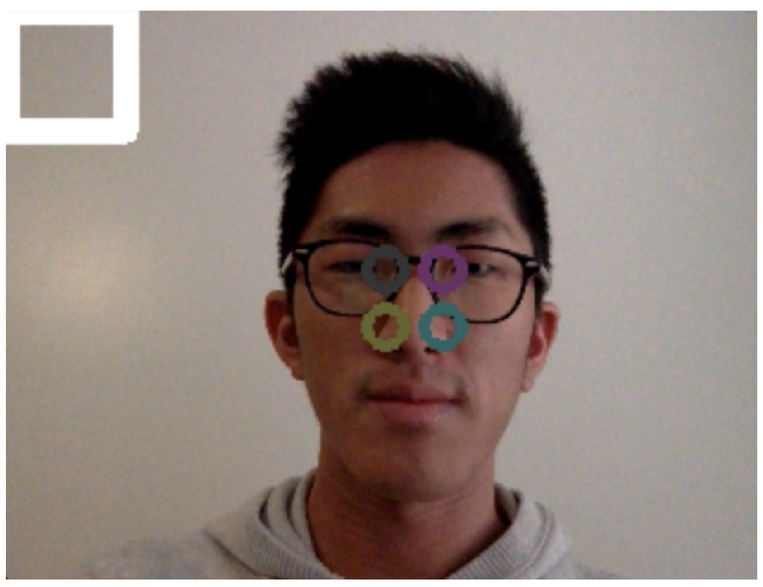
Camille Utterback's Interactive Installation

Romy Achituv's Text Rain

Visualization







Results & Future Work

- Successfully showed automated, beat-driven augmented reality animation
- Runs in real-time on laptop with built-in camera
- Gained experience with music processing, scheduling, music data
- Elaborate animations for each functions