

Facial Tic Detection Using Computer Vision

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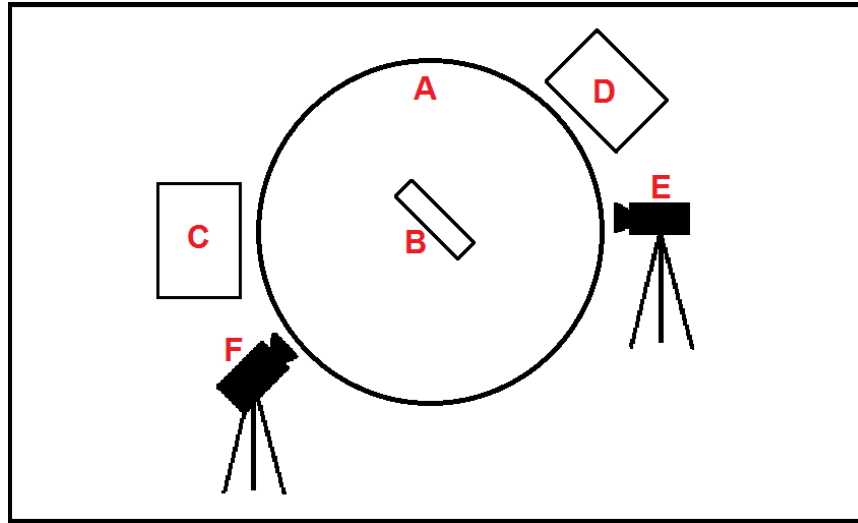
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Introduction

- Facial feature detection
 - In particular, detecting dishonesty
 - Poker as an example
- Project goal: to build a system able to accurately identify occurrences of a particular facial tic in a video using methods of computer vision

Which facial tic?

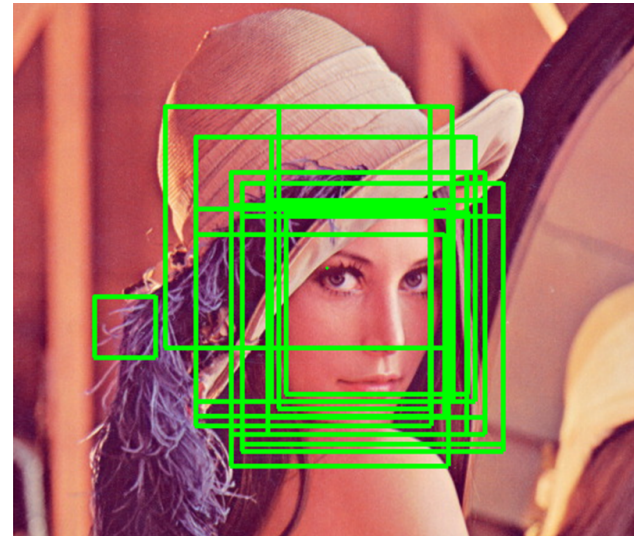
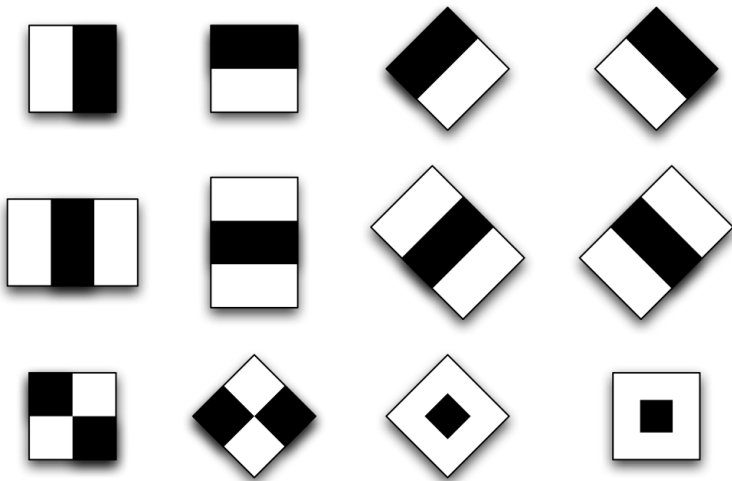


Deciding on a tic

Mouth twitch



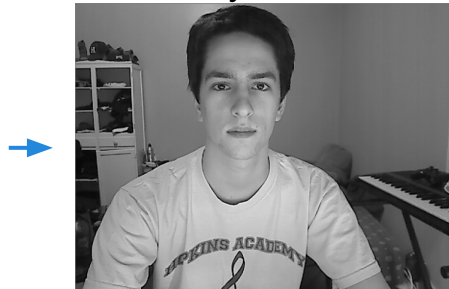
Haar-like features



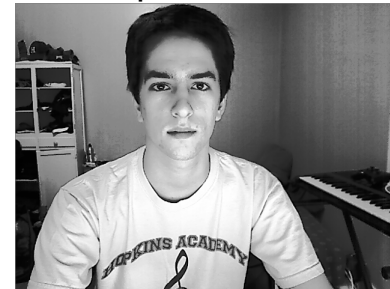
Color



Grayscale

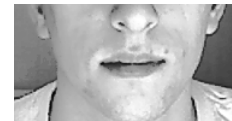
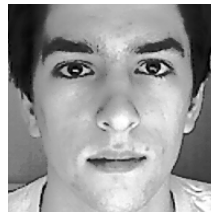
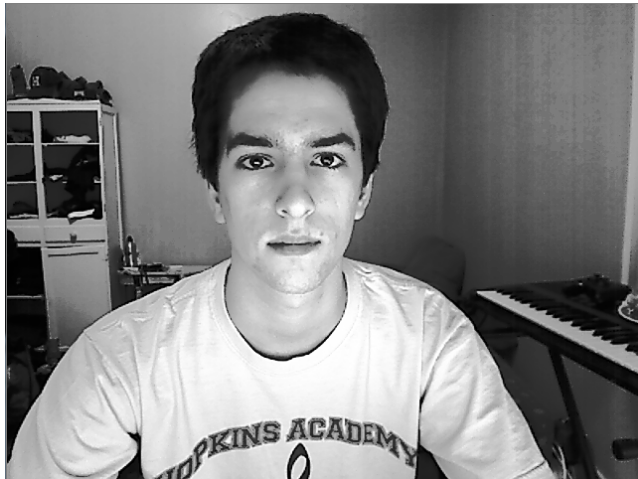
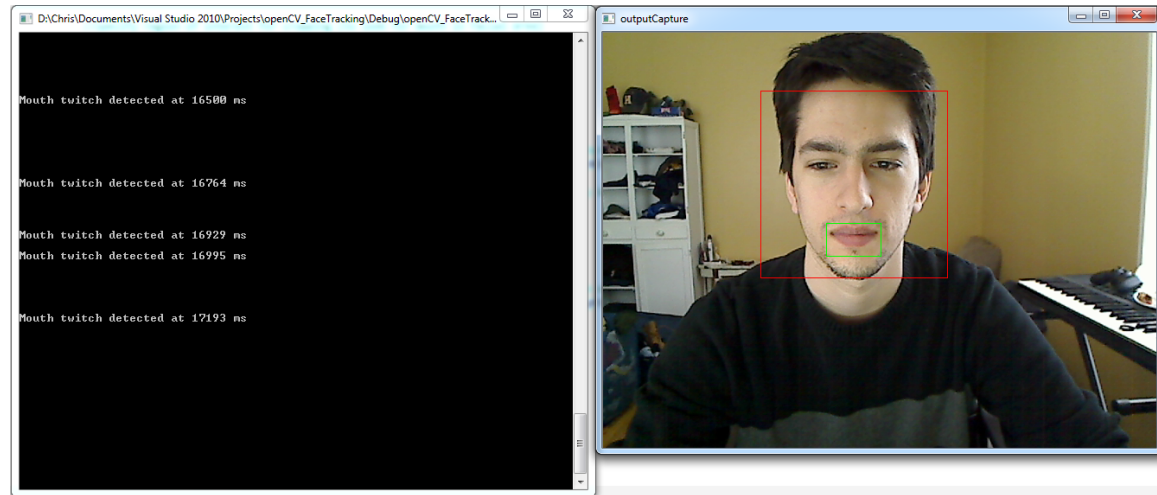


Equalized



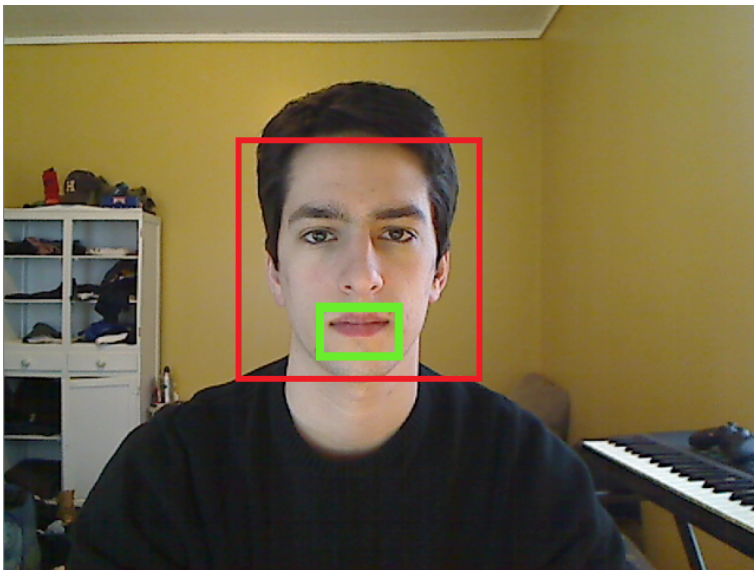
Finding the mouth

- Goal 1: find face
- Goal 2: find mouth



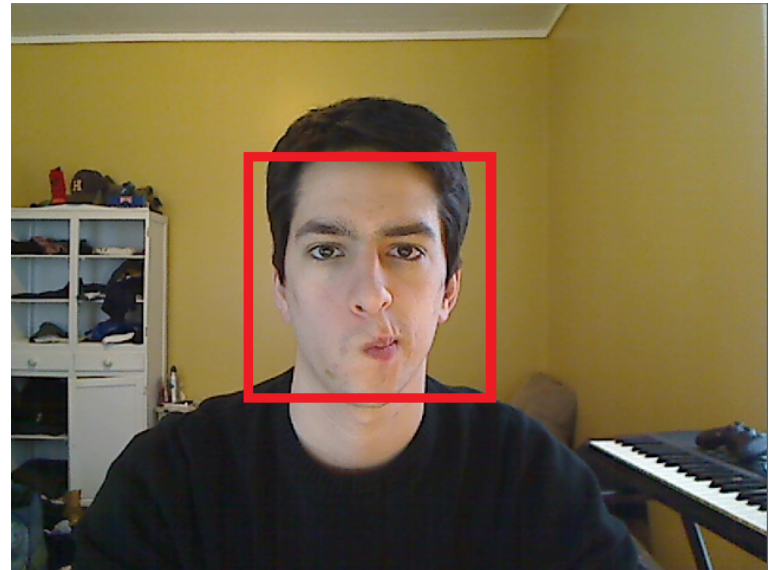
Detecting a twitch

No twitch



- Face detected
- Mouth detected

Twitch



- Face detected
- Mouth not detected

Evaluation

- Preliminary results:
 - Works well under controlled conditions
 - Not as effective with lab trial videos
- To do:
 - Formally test accuracy

Future Work

- Comparing to other methods of twitch detection
- Extending to support detection of other mannerisms

Questions?

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