README.md

Optical Flow Feature Detection

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File Structure:

Folders

- `Datasets` : all input videos
- `Haarcascade_Classifier` : two classifiers. We used `haarcascade_frontalface_alt.xml` classifier because it has better performance
- `Output_Video` : contains all types of output videos, including `.avi` , `.m4v` , `.mov` . Grade whichever opens on your laptop.
- `First_Frame_with_Features` : contains all first frame images with feature points and boxes overlaid
- `Resources` is micellaneous, can be ignored

Function Files

- `detectFace.py` : default `scaleFactor=1.1` . Adjust `scaleFactor=1.02` when running on `strangerthings.mp4`
- `helper.py` : contains `drawBox` function which copies image with feature box overlaid on it, and gaussian convolution function `gaussianPDF` which returns an operator for Ix and Iy

To run test videos

`faceTracking.py` : main function produces the tracked videos.

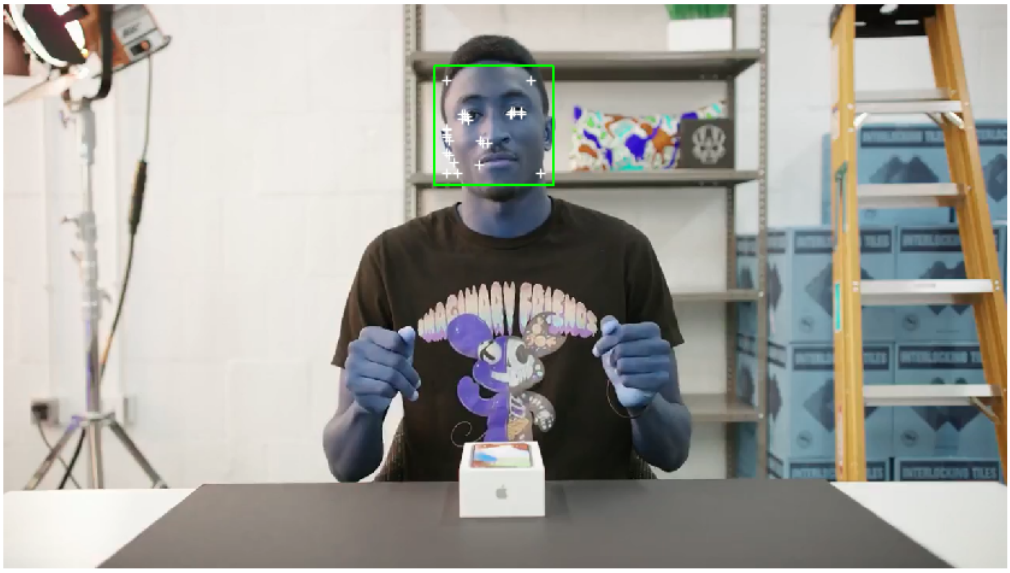
> To test on different input videos, change `rawvideo` file path and `tracked_video` file path. If a `tracked_video` with the same name already exist, videowriter does not override and will fail to produce new tracked video file.

First Frame of Test Videos

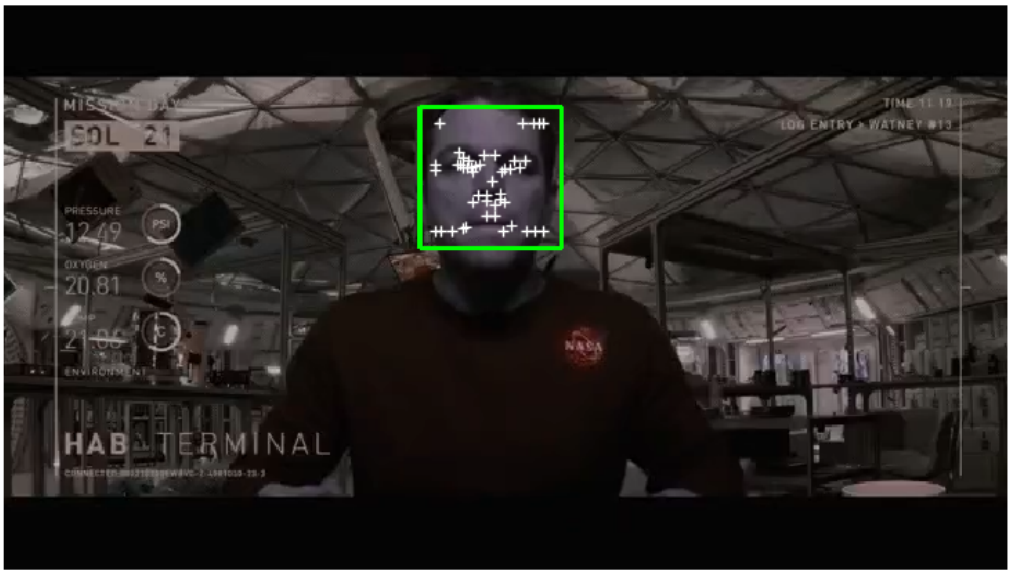
note: the color scale is a bit off

Easy

Marques Brown Lee



The Martian



Medium

Tyrion Lannister

Hard

Stranger Things