Report-wf2020-09-25

September 25, 2020

1 Setup

Setup path to include our files. import them. use `autoreload` to get changes in as they are made

```
[115]:  import os
        import sys
        import cv2
        from matplotlib import pyplot as plt

        # load our code
        sys.path.insert(0, os.path.abspath('../'))
        from tracker import set_tracker, TrackedFrame, Box
        # specific to jupyter notebook
        from jupyter_help import cvplt, cvplt_sub

        # load any changes as we make them
        %load_ext autoreload
        %autoreload 2
```
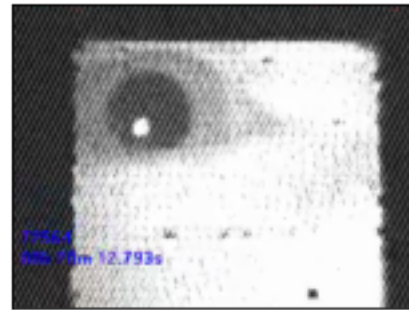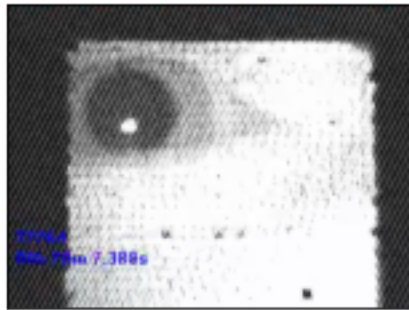
2 Load

load an interesting frame from video. fast forward some and load a new frame with the eye positioned differently

```
[106]:  vid_fname = "../input/run1.mov" # path relative to this document
        frame_number = 200
        frame_jumpto = 500

        # read in
        vs = cv2.VideoCapture(vid_fname)
        vs.set(1, frame_number)
        frame = vs.read()[1]
        vs.set(1, frame_jumpto)
        frame_jump = vs.read()[1]

        # show in notebook
```
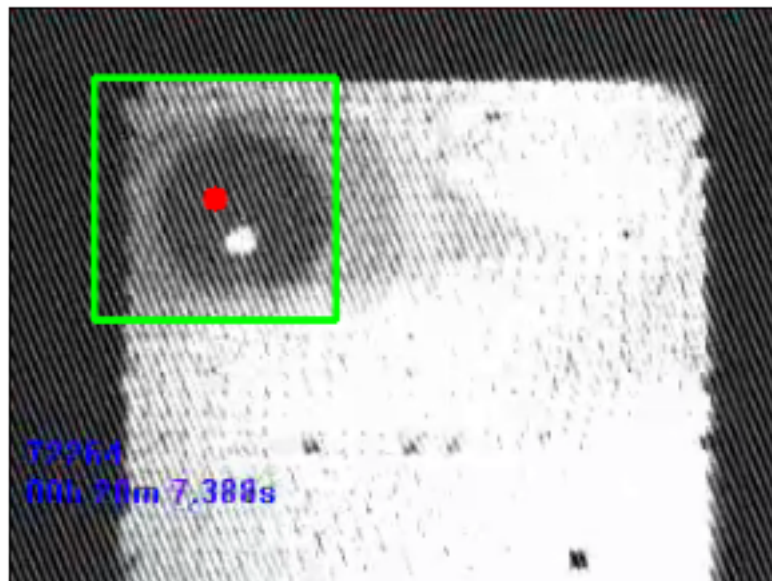
```
cvplt_sub([frame, frame_jump],1 ,2)
```


[95]:
```
# intiail bounding box
bbox = (35, 30, 100, 100)
init_box = Box(bbox)
frame_box = frame.copy() # normally passed by reference. dont want to touch␣
 ↪orig. 'frame'
init_box.draw_box(frame_box)
```
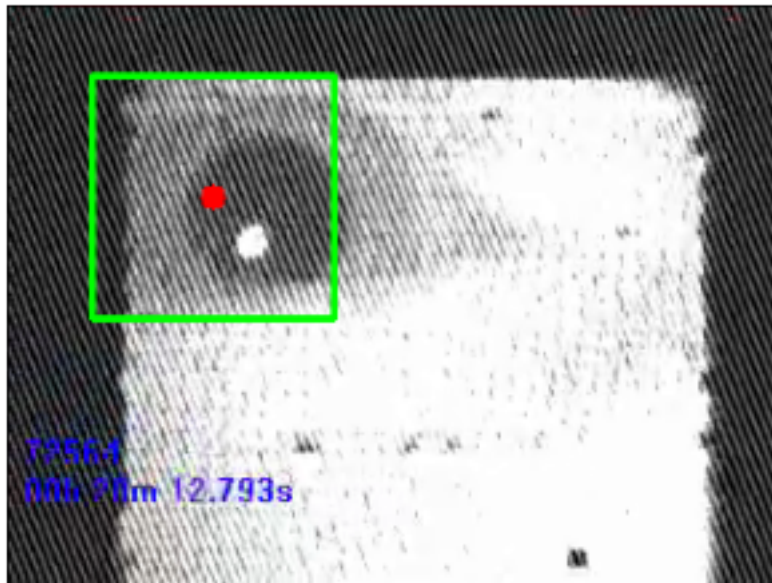

2.1 kcf

defautl tacker

```
[108]: tracker = set_tracker("kcf")
       tracker.init(frame, bbox)

       (success, box) = tracker.update(frame_jump)
       kcf_box = Box(box)
       print(f'box: {box}')

       # deal with tracking
       kcf = TrackedFrame(frame_jump, frame_jumpto)
       kcf.set_box(kcf_box)
       kcf.draw_tracking({})
       cvplt(tframe.frame)
```

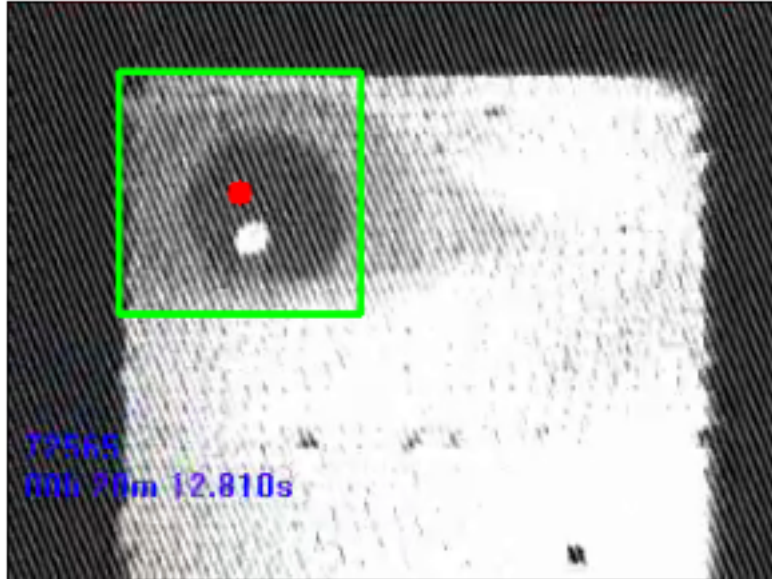box: (35.0, 30.0, 100.0, 100.0)

2.2 Boosting

alternative

```
[109]: tracker = set_tracker("boosting")
       tracker.init(frame, bbox)
       next_frame = vs.read()[1]
       (success, box) = tracker.update(next_frame)
       boost_box = Box(box)
       print(f'box: {box}')
       boost = TrackedFrame(next_frame, frame_number + 1)
       boost.set_box(boost_box)
```
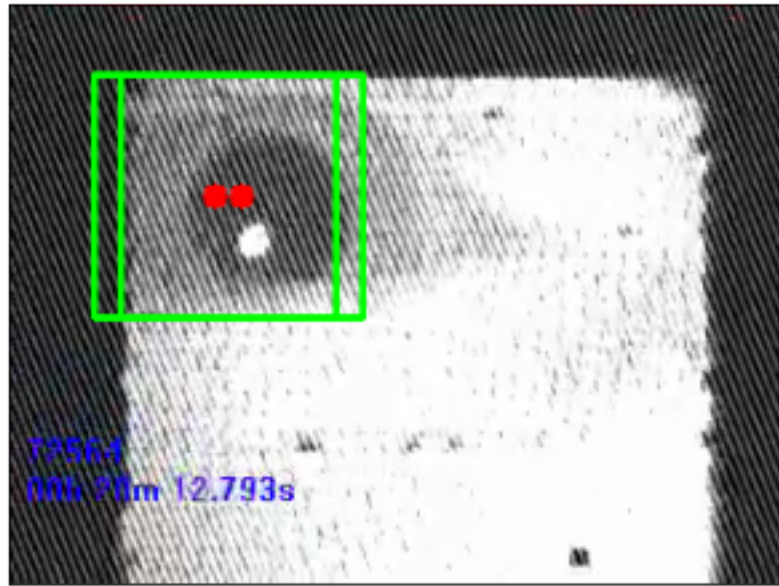
```
boost.draw_tracking({})
cvplt(boost.frame)
```

box: (46.0, 30.0, 100.0, 100.0)

3 Results

boost does better than kcf?

```
[114]:  combined = frame_jump.copy()
        kcf_box.draw_box(combined)
        boost_box.draw_box(combined)
        #cvplt_sub([kcf.frame,boost.frame, combined], 1, 3)
        cvplt(combined)
```

[ ]: