Journal Report 1

8/29/19-9/6/19
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Daily Log

Thursday August 29

Set initial goals for one and two week intervals. Did light housekeeping in the shared Google Drive folder my partner and I will use.

Bought and installed the iPCamera app, and successfully followed Joshua Pan's instructions from last year to link it to OpenCV on my laptop. Found out school wifi blocks the connection, so used phone hotspot as a workaround.

Downloaded videos of chess matches to be cleaned later.

Tuesday September 3

Attempted to write a script to capture still images from the live video feed given by iPCamera. I say attempted because I couldn't figure out why cv2.waitKey() was being unresponsive (resolved on Thursday.)

Successfully created a different script to save video feed input. Discovered OpenCV's VideoCapture property flags, which indicated the iPCamera app locks framerate at 25 FPS.

Took initial images of chessboards with two or three pieces for my partner.

Thursday September 5

Found out cv2.waitKey() only works when the python window has focus (in other words, I have to click off Terminal and onto the video feed).

Added still capture functionality to the video recording script—now it takes pictures on spacebar and saves the full recording. Also transposed the input image to get horizontal video instead of vertical video.

Took new images of chessboards with the new script for Kevin Chung. Messed with an enormous tripod since the one we ordered hasn't arrived yet (sadly, it's unsuitable).

Friday September 6

Learned from my partner how to transfer video files via Google Cloud. Discussed minor timeline changes.

Timeline

Date	Goal	Met
Aug 19	Summer; no goals	n/a
Aug 26	Link phone video feed to laptop; gather stills and footage of real chessboard	Stills and video link done; no footage yet (no tripod)
Sept 9	Clean raw chess footage from online; set up router to avoid using phone hotspot	Chess footage downloaded but uncut; no router yet
Sept 16	Create a script to convert digital board states to moves in PGN notation	Not started
Sept 23	Gather video of chess match with iPCamera (tripod situation allowing); research image augmentation for CNN	Not started, though live chess video is flexible

Reflection

This week was mostly about getting the framework for Kevin Chung and I set up. I gathered images and set up the video feed software, while Kevin Chung implemented a basic board detection algorithm. Aside from being stuck on the usage of cv2.waitKey() on Tuesday, everything went smoothly for me. I'm happy with the spacebar to save frames, as well as my choice to name files by the times they were taken to prevent duplicate filenames. I'm planning to add a command-line argument to let the user decide if they want to save the full recording or not, but that won't take long, so I didn't add it as an official goal for this week.

Chung and I talked on Friday and he said he'll need a few weeks to get automatic segmentation of the board for a piece-detecting CNN, so in the meantime I'll continue to do setup work. My goal for this week is to clean the chess footage I downloaded from YouTube last week, which will hopefully give my partner enough to test with. I also hope to receive a router this week and set up a local network so I don't have to use my phone hotspot for the phone-laptop video link.

My next goals—create a PGN notation script, gather live video, research image augmentation—can really be done in any order. I chose this ordering because it lets me code in between the two grunt work weeks. The PGN script will be important much later on in the project, since we'll need to translate our detected board states to move notation. The live video goal date is just a guess; I intend to do that whenever our ordered tripod arrives. And eventually I'll be working on piece detection with a CNN, so the image augmentation research is aimed at making that go smoothly.