EE 420 Engineering Logbook

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Dates:

9/8/2022 – Thursday, first meeting, discord created, planned for a meeting on the 11th (Sunday) to work on vision statement. Figuring out how to install and use ZenHub, lots of trouble with permissions

9/13/2022 – Tuesday (working on vision statement due 9/15/2022) Rose Ellen made a summary in the Discord, talked a bit about roles/responsibilities

9/15/2022 – Thursday Vision statement due tonight, William moved it to the GitHub (note to self: get better at GitHub). Will submit soon. More importantly, Alejandro informed us there's going to be a flight tomorrow and I've talked to Prof. Pang about taking my quiz early so I can skip my morning class tomorrow so I can go. Looking forward to seeing the UAV in action!

9/20/2022 – Tuesday

We had set up another Sunday meeting, and reviewed what we saw during the flight. The UAV flying was pretty cool and the setup was interesting, but the payload still had the issue of shutting down part of the way into the flight. Maybe overheating it causing it?

Next Tuesday have your sections done (I'm sections 3 and 3 in SRS and SDD)

We divided up SRS and SDD document for everyone to take specific sections and write down the requirements and information that needed to go there

We spoke with Professor Ahkbas about who saw the flight, and also our deliverables for Sprint 1 - he suggested we add getting the test Jetson and running a neural network on it to our deliverables

Went over the flight from Friday and current issues/status. We are each going to develop a rough outline for the SRS and SDS, and we are going to look at and compare them on Tuesday.

9/22/2022 – Thursday Was a bit late (missed the shuttle)

We did some talking about passive cooling methods to potentially alleviate the overheating problem, if that is what is making the Jetson shutdown while it is in flight.

9/27/2022 – Tuesday

Was the only one in class for a bit. Let Prof. Akbas know that we are still working on SRS and SDD (I'm done with my sections in SRS, just need some slight additions on SDD)

Explained that most of the group had already evacuated.

I asked him about deadlines, he said at this point looks likely that he's gonna push things back

Looks like school might be closing for the hurricane spinning up in the Gulf.

10/04/2022 – Tuesday 10-4-2022

After the storm, due date for the SDD and SRS got pushed back Got the Jetson Nano, but the on board computer is a Jetson AGX Xavier

Got around a 100 more images for testing the neural network downloaded

Downloading developer image and trying to get the Nano SD card to work

Willam had some important questions for Alejandro about how to get the Jetson to interface with a PC.

Everyone present, we spoke with professor Ahkbas about our progress.

10/06/2022 – Thursday Going to work on finalizing the SRS and SDD tonight and tomorrow – it's now due the 7th. There's definitely some wonky formatting that needs repairing.

10/11/2022 – Tuesday (Career Expo, no class)

10/13/2022 – Thursday

Note: I was the one to submit the SRS and SDD last week, so I need to keep an eye out for potential feedback on Canvas, as I'm not sure it will show up on everybody's slides.

Submitting the SRS was stressful. I almost missed some last minute leftover highlighting and I hate making formatting mistakes like that.

Now onto presentation, we're presenting next week (Tuesday) but we got lucky, some of the other groups are presenting earlier. Working on PowerPoint some, got in my System architecture slides

Don't like how we switch formatting halfway through the PowerPoint but hopefully it won't be an issue

10/18/2022 – Tuesday (Presentation Day) Presentation went ok. We met over the weekend assigned which slides went to who (Chris didn't show up) so we had some preparation. We didn't have quite as many scrutinizing questions as some of the other groups, like the gym app group. Prof. Akbas let us know he can potentially provide more turtle photos, which would be useful for training the neural network.

10/20/2022 – Thursday (FALL BREAK)

10/25/2022 – Tuesday

Was super busy over Fall Break and still am. Filling out lots of extraneous forms, it's slowing me down on coursework.

Parker isn't feeling well, so he wasn't there.

Test plan due next week, we were assigning sections.

I have the first few parts of 3 (perhaps all of 3, depends on how busy will gets.) I'll work on it some this weekend (no Halloween plans) Fairly straightforward

10/27/2022 – Thursday There's a flight coming up, I don't think I'll be able to make it to this one.

Will gave some info about the neural network. Python's a good choice for a neural network, lot of resources for it, he says. Currently the neural network's got very limited accuracy, keeps thinking waves are turtles

Need more aerial images of turtles. More images = more training data = better recognition algorithm

11/01/2022 – Tuesday

Continuing work on the test plan - Group is discussing methods of attaching location to sorted images

(No communication between Jetson and flight computer - so no GPS?)

Maybe use timestamps on photos and correspond with flight path later

Ahkbas spoke with us about using several sets of training data and test data. Train with data, test with other data, tweak with more data, test with more data

Maybe focus with detecting turtle trails (making the trail videos into images)

Our neural network has not been run on Jetson yet, so we'll have to work on that

Alejandro has had some issues with the image for the Xavier so we may need to see some of his code to check how he customizes it to work (also may need to get that image for the Xavier that has the edits)

Added Scrumwise track to get turtle track images out of videos

11/03/2022 – Thursday

I submitted the System Test Plan last night

Did some last-minute refinements prior to submitting

Rose and Chris are here, Parker and William are not

Going to ask Alejandro how he gets code to run on the Xavier with the issues with the image he's been having

He said copy the whole folder that we train on to port it over to the Jetson

He said he would send that code from the Jetson over to us and we would focus on that after the neural network improves we need to work on the speed and accuracy of the neural network (possible separate the light spectrums to better identify turtles?)

Trying to eliminate blue for easy identification for more accuracy and speed of the neural network

There is another flight test tomorrow in Melbourne, if we want to come, let Alejandro know ahead of time

11/08/2022 – Tuesday

Making final fixes on the revised SRS and SDD

My section's not too bad. Just knocked for being vague which I knew might happen

Adding in more specific info about the aircraft and payload. Checking with Parker to make sure my info is accurate.

Chris is saying he won't work on it until 10, that's really not ideal

Got my section fixed. Will seems ready as well

Right after we get this SRS and SDD done there's going to be a presentation coming up

Ugh everything happens so fast, I'm so busy this week

11/10/2022 – Thursday (No class this Thursday)

11/15/2022 – Tuesday (Presentation Day)

Got my slides in fairly late but they were there before class

Had a doctor's appointment which was going to mean I couldn't make it to class for the presentation, but they had a cancellation and I was able to slide in early.

Met before class to review presentation

Made some adjustments to the PowerPoint, ensured everyone knew what slides they would be presenting

11/17/2022 – Thursday

There's another flight tomorrow, might actually be able to make it to this one

Glad, can get the chance to review the potential fix for the payload. Leading theory now is that it's a brownout so now we have it on a separate power supply.

If it's running off it's own battery it may have less voltage fluctuations, which may mean it won't shut down like before.

We're going to be testing tomorrow. Have talked to Prof. Pang to get my quiz done ahead of time so I can go to the flight.

There's been a sudden cold snap though so it's going to be chilly.

11/22/2022 – Tuesday (No notes)

11/24/2022 – Thursday (Thanksgiving)

11/29/2022 – Tuesday Met with Ahkbas - he says feedback on the SRS will be out soon and we will do revisions on it for submission next week

Will tried to rewrite neural network but had to fall back on old one

May be presenting next Tues or Thurs

Assigned different slides for presentation demo

12/01/2022 – Thursday Have the next SRS and SDD due very soon.

Did some work on those but luckily they do not have too many revision notes to change

12/06/2022 – Tuesday

Presentation Today, went ok but I feel like we disappointed Prof. Akbas a bit.

Hopefully next semester there will be fewer delays and we can get the neural network running on the Jetson.

12/08/2022 – Thursday – Test Plan due tonight.

Didn't have to make many revisions on my section (and Parker added some stuff to it, which helped.)

Met up with the group to try and film the video -very difficult and troublesome, but we think we got something we can submit.