EE/CprE/SE 491 WEEKLY REPORT 8

4/7/26-4/21/26

Group number: sddec26-03

Project title: Squirrely Bird Feeders - Using AI to outsmart the Squirrels

Client &/Advisor: Randall Geiger

Team Members:

- Wyatt Sinclair
- Jack Morrison
- Miles Nichols
- Kenny Tran
- Benjamin Bartels
- Nolan Hoenert

- **Weekly Summary:**

- **Past week's accomplishments**
  - Jack Morrison: Worked with Ben to setup the pi on Gieger's property to collect images. Talked to ETG about GPU power for virtual machine requests. Began designing the application service API.
  - Wyatt Sinclair: Worked on the design document and worked on the team's website.
  - Nolan Hoenert: worked on ideas for the first raspberry pi case, as well as the bird feeder design. Planned where to set up the raspberry pi for image capture.
  - Benjamin Bartels: Got some testing in with the raspberry pi and image gathering. Got the raspberry pi set up as a bird feeder watcher at our advisor's place.
  - Kenny Tran: Started Node.js and Angular project. Research into how to use Capacitor so we don't have to build a native mobile app.
  - Miles Nichols: Complete sections 4.1 - 4.4 of the design document

- **Pending issues:**

Wyatt Sinclair: N/A

Jack Morrison: N/A

Nolan Hoenert: N/A

Miles Nichols: N/A

Kenny Tran: N/A

Benjamin Bartels: waiting for a part to come in so we can assemble the gate and get the positions calibrated.

Everyone: N/A

- **Individual contributions:**

NAME	**Individual Contributions** *(Quick list of contributions. This should be short.)*	**Hours past 2 weeks**	**HOURS cumulative**
Jack Morrison	Worked with Ben to set up the pi on Geiger's property to collect images. Did more work on the cloud backend and talked to ETG about GPU.	16	54
Miles Nichols	Complete sections 4.1 - 4.4 of the design document	5	46
Wyatt Sinclair	Worked on the team website and design documents.	4	35
Nolan Hoenert	Started block diagram iterations	6	52
Kenny Tran	Resources about bird feeder maintenance and central Iowa bird species available from Audubon. UX implementation stuff.	12	46
Ben Bartels	Set up the raspberry pi as a motion activated camera. Placed an order for birdfeed. 3D modeled a case for the raspberry pi, the camera and motion sensor, and printed the case off. Set the raspberry pi up in front of a bowl of birdseed and let it gather training images. Went to our advisor's place to set up	35	76

	the birdfeeder so it can better gather images of squirrels.		

- **Comments and extended discussion**

[Squirrely Bird Feeder Design Sets - Google Docs]
[Cloud Tech Stack]

- **Plans for the upcoming week** *(Please describe duties for the upcoming week for each member. What is(are) the task(s)? Who will contribute to it? Be as concise as possible.)*

  • Jack Morrison: Continue prototyping the infrastructure and get the VM requested from ETG after clarifying our GPU requirements with Kenny and Wyatt. I'd also like to work on more documents relating to infrastructure layout.

  • Miles Nichols: Get involved in the machine learning and identification part of the project

  • Kenny Tran: Get a readme for UX into the GitLab project for installation. If cloud backend MVP is complete, then consume the endpoints exposed to the front end.

  • Benjamin Bartels: continue to collect training images, check on the raspberry pi that's watching the birdfeeder and refill the birdfeeder, as needed. And start getting the gate for the birdfeeder printed off and assembled.

  Wyatt Sinclair - Make a detailed list of how the software runs and its functionalities, along with how it connects to other parts of the project.

  • Nolan Hoenert: Start collecting photos of birds/squirrels for the ml model. Get information on what gpu specs we might need for the vm.

- **Summary of weekly advisor meeting***:*

In this week's meeting, we showed our advisor our raspberry pi with the pir sensor and camera. We also showed him the basic case design for the raspberry pi for collecting initial data of squirrels and birds. We discussed locations for the raspberry pi and feeder to collect data, as well as how we would power the raspberry pi during photo collection. We confirmed our meeting for next week, Monday at 12.