

Part A

This semester, I was given responsibility for implementation and design of our QML frontend and computer-vision integration with the camera hardware. Although I had some experience with QML through use with C++, it was a steeper learning curve than I expected to get property bindings, signal-slot connections, and importing modules sorted—it was more trial and error than I thought. I was responsible for the image-processing pipeline: setting up the camera feed using Python, preprocessing frames with OpenCV, and wiring up our Roboflow API calls to the birdv2 model. Along the way, I was forced to learn some SQL basics to understand how our database was storing sightings, which included relying on my teammate's experience as well as reading on schema design as necessary.

Pushing through these difficulties caused me to grow technically and personally. I am now comfortable at creating rich, interactive UIs with QML/PySide6, along with how to interface these with Python backends. I also gained a general sense of SQL workflow and how to rely on other members of the team to be there for me when I move outside my comfort zone. My success was the ability to deliver a completed live viewfinder page and a good snapshot feature within the application; my greatest difficulties—dealing with unfamiliar frameworks and with several different technologies simultaneously—made me a more patient, more resourceful, and more confident solo learner.

Part B

Together, we accomplished all of our target milestones through a team-driven, interactive process. We learned to break a large project down into smaller sections, and hold each other accountable through weekly meetings. Our collaboration worked most effectively when we split up technical tasks by skill set—Rayhan worked on backend services and databases while I worked on frontend and vision pipeline—and then split documentation, research, and management tasks down the middle.

In this collaboration, I realized that open communication and trust are the keys to successful collaboration. Although we never had real disagreements, we did find it beneficial to set firm deadlines for group assignments to prevent procrastination. Overall, our fair division of responsibilities and open channels of feedback made this senior-design experience both productive and enjoyable. Overall, our balanced division of labor and open feedback loops made this senior-design journey both productive and enjoyable.