CS303 - Honey Bee Dance Language Translator App
Status Report

Date: November 1, 2020

1) Project Members:

- *Paul Cochran*
- *Christopher Flippen*
- *Chelsea Greco*
- *Vinit Patel*

2) Accomplishments for the week -- and which team members participated/contributed

- *On October 25, we met in pairs to work on designing parts of the UI and the backend of the app.*
  - *Paul and Christopher worked on the ideas for the UI. Their idea began with using AI assistance which would save clips of video if someone noticed bees waggling in the hive. The app would have a button which when pressed would save the last 2 minutes of footage along with the time the footage was taken. Next, the user of the app would crop the video to just include the part when the bee is dancing. Next, they would overlay a "waggle curve" image on top of the video to show the orientation and length of the dance. Using this information, the app could calculate where the waggle dance is pointing to.*
  - *Vinit and Chelsea worked on the ideas for the backend parts of the app. Vinit and Chelsea mainly focused on understanding the math that the app would use to decide what location the bees are waggling about. They took notes on this research paper and wrote down information about using a Fourier Transform to determine the orientation of the bees in the video and the function for "scoring" pieces of footage to detect if a bee is waggling. These equations are very complex and will require us to study them further to understand how to implement them.*
- *On October 29, we met as a group to discuss our findings from our paired meetings. After this meeting, we met with Professor Dahlberg to get advice on our project ideas. This meeting mainly focused on Paul and Christopher's ideas for the app and led to several changes. One change was that rather than the user overlaying an image on the waggling footage, they would point out two coordinates: the starting point and turning point of the dance. This would lead to more precise data since the bees don't always follow an exact waggle path. We also took notes on how our demo of the project would look for the capstone expo in the spring. Finally, we discussed creating a "design document" for the project which would formally describe how our app will work and that we will turn in before the end of the semester.*

3) List of Milestones to be completed and anticipated date (indicate which ones are in danger of not being met)

- *On November 2, we will meet as a group to create a draft of our design document*
- *On November 5, we hope to meet with Brandon Smith in order to confirm some details about setting up the camera in the museum*

- *On November 12, we are planning on visiting the museum to set up the camera. We are still waiting for confirmation on this.*

4)   List of issues, problems, or concern(s)

- *There aren't any issues to report currently.*