Dynamic Modeling Final Project

Journal & Group Evaluations

Jacob Leonard

Tuesday April 28th (4:30pm – 6:45pm)

Arrived early to brief myself on the topic and a possible flow for the project. Mikela and Keely arrived around 5:15pm. We discussed the initial stages of the development of the model, and boiled down the growth of a leaf into its primary components and how those components can be represented in Matlab. Chose to model the shape of an oak leaf for simplicity, and figure out what the driving factors for the leafs development are.

Monday May 4th (10am-3pm)

Sent an email to the group that described my ideas on the use of conditioning matrices in regards to how the leaf grows, and decides to place veins. I wasn’t able to make the group meeting on Monday because I has a study session for another final, but I went through the length of our next steps and described in detail what it was that I thought would be a good next move for the project.

Thursday May 7th (10am – 4pm)

Worked on a brunt of the coding, trying to get the shape of the leaf to show up visually in Matlab. This leaf shape was very basic, and is intended to clearly define areas for the veins , separation of lobes, and areas for new veins. Once I had the basic shape down, I coded the growth algorithms for the leaf to ensure that it expanded correctly according to what we decided as a group.

Friday May 8th (3pm-6pm)

Worked more on the growth of the leaf, and figured that all dimensions of the leaf grow proportional to the length of the midrib, not just the area.

Saturday May 9th (10am-4pm)

Worked more on the growth of the leaf and the development of the veins. Our group met from 1-3pm and dealt with the remainder of the coding problems for the project. Worked afterwards on the vein development and the nutrient supply.

Sunday May 10th (11am-5pm)

Worked on nutrient coverage and vein development and figured out how the veins develop without “expanding” and how they are selected.

Sunday May10th – Monday May 11th (9pm-5am)

Finished up the coding and the rest of the project. Sent my results to Keely and Mikela for the paper and presentation.

Group Evaluations:

Mikela – did a great job with the research and presenting her ideas during our group meetings. Always on time, and did her best to be available during finals.

Keely – pulled her weight from the very beginning and was very on top of getting her sections of the project done. Always on time, and made an effort to always be in communication, as well as provide adequate research.