Team 36

Project Title: AI-VVO (Artificial Intelligence Volt-VAR Optimization)

Date: 10/3/2021

Members:

Jaden Alamsya

Demetrius Christou

Evan Dinnon

William Dulaney

Rachel Owens

Megan Phinney

Derrick Vang

What we've accomplished in the past week/what we've been researching

Jaden Alamsya – Over the last week, I have looked over some of the front-end code from the last senior design team. I also looked into React and how that can be used as I do not have a lot of experience with it. I followed a React tutorial that the last senior design team suggested and it helped with understanding some of the syntax. Then I went back through the front-end code from the previous team again to analyze it after gaining a better understanding of React.

Demetrius Christou -This past week, I looked over the previous teams backend code. I also spent time learning more about python as I don't have very much experience using it. I have been researching Django and looking at the previous resources that the previous team used to do the project.

Evan Dinnon - This last week, I began looking at the previous team's machine learning resources. This included research videos as well as their code. I also began looking into PyTorch tutorials. Along with Will, I also looked into the Google Colab Platform for our development.

William Dulaney - Over the past week, I analyzed the previous team's machine learning code. I investigated using Google Colab for developing the new reinforcement learning algorithm in PyTorch and learned the basics of reinforcement learning.

Rachel Owens - I completed a ReactJS tutorial that was suggested by the previous team and looked into ReactJS implementation. I reviewed the previous team's frontend code base to get a better understanding of how they developed their app and what components they used.

Megan Phinney - Over the last week, I spent time reading over documentation for Docker and Charliecloud sense we are using containers for testing purposes.

Derrick Vang - This past week, I went over the frontend from the previous team's code, followed the tutorial to learn React that they used and found out how to run the project. I don't have much experience with React so I plan to do more research on it.

What we're planning to do in the coming week

Jaden Alamsya – For the next week, I plan to continue to work with React and gain as much understanding as I can. This will be vital when we go to make changes and additions to the front-end code. I will also be looking into the previous team's code more in depth in order to grasp how the system works.

Demetrius Christou - For the next week, I plan to continue to research Django and look deeply into the backend code in order to find the issues that the previous had with their database connection. I will also begin to look into other materials explaining Django so that I can have a more balanced understanding of the framework than just looking at previous resources.

Evan Dinnon - For this next week, I plan to further follow PyTorch tutorials to get a general understanding of how to utilize the framework. I will also work with Will in utilizing the Google Colab resource for our development.

William Dulaney - For the coming week, I plan to continue using Google Colab and to start researching deep convolutional neural networks in greater depth. I also plan to research PyTorch to enable me to develop the deep convolutional neural network quicker.

Rachel Owens - I will be completing a more in depth ReactJS tutorial that goes over more of the fundamentals of the framework. I will also checkout the current code base to my local machine and figure out how to run the application and look at ways to

improve it. The frontend team will refine requirements based on our findings after running the application and reviewing how it currently works.

Megan Phinney - Next week, I plan to dig into the previous backend code to make sure I understand exactly what the previous group did. With that I also plan to start researching Django for our implementation.

Derrick Vang - For the coming week, I plan to continue researching React, review javascript and improve my understanding of the front end code.

Issues we had in the previous week

Jaden Alamsya – I had some trouble with getting into React as I have not used it much; however, I will be putting more time into it and I will grow more comfortable over time. I also had some trouble deciphering some of the previous team's front-end code, but that can also be attributed to my lack of general React knowledge.

Demetrius Christou - I have had some trouble picking up on the basics of Django since I am completely unfamiliar with both Django and Python. I plan to continue to practice with both so that I can understand the previous team's work.

Evan Dinnon - The issues I ran into last week were mainly in regards to understanding how machine learning works. Given I have never been introduced formally to the concept I had a limited understanding going into my research. In continuing this research I plan to gain the underlying knowledge needed to fully understand machine learning.

William Dulaney - In the previous week, I had a few issues with understanding some of the higher-level mathematics for deep learning. I plan to continue my research of deep convolutional networks in order to strengthen my knowledge base and to fill this gap in my knowledge.

Rachel Owens - The current code base is not well documented and there are very few comments on how it works, why certain decisions were made, and how to install and run it. The code itself seems a little messy and hard to follow. I am not very familiar with React so it was also more difficult to understand what they have written.

Megan Phinney - This week the biggest challenge I ran into was giving myself enough time to work on this project. For following week, I am going to block off more time in my schedule to get more research done.

Derrick Vang - In the previous week I had trouble finding out how to run the project. I had to do a few downloads and it took me a while to figure it out. The frontend code isn't really documented well so it was hard to get a good understanding of the code.