

EE / CprE / SE 491

Machine Learning Heterogeneous Computing

Week 6 Report

Time: Mar.6 - Mar. 12
Client: JR Spidell
Faculty Advisor: Diane Rover

Team Members:

Sandro Panchame
Rudolph Nahra
Alek Comstock
Jeffery Kasper

Weekly Summary

This week, the team started working in Vitus so we can start learning how to use OpenAMP to control the flow of information on the Kria board. Rudolph and Sandro learned more about the tasks they had been assigned on the Machine Learning side of the project.

Past Week Accomplishments

Jeffery K: Started working in the Vitus environment.

Sandro P: Took a closer look at remodnav (general, not the folder). Remodnav is: Robust Eye Movement Detection for Natural Viewing. This package is responsible for detecting eye behavior. Need to look further into it. The remodnav folder of interest is 'wremodnav.' The python files don't seem to be interacting with the 'remodnav' folder in the Jan directory. There is a table that contains the eye position and movement classification in a file called 1_1.csv. Interestingly, the movement is classified in another table in the dataset directory.

Alek C. I got Vitus up and working. Had some problems with consistency; I had to redo my entire docker installation and docker container for it to work consistently.

Rudolph: Learned about different kinds of neural networks. Read research papers about neural network structure. Began writing program to try & test various network hyperparameters

Pending Issues

Jeffery K: Vitus is a very complex development environment that is terminal based. It will take time to become familiar with the features available and learn shortcuts to become an effective programmer.

Sandro P: Not sure where to go from here, may need to consult with JR Spidell. May need to also consult with Rudy,

Alek C. Vitus requires a lot of time to get used to, I was not expecting a bash based IDE.

Rudolph: Marabou is giving a segmentation fault error and I cannot find a way to fix it. I may need to post an issue on their github page.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Sandro Panchame	Took a closer look at some of the files, Couldn't find time to work on it more.	3	24
Rudolph Nahra	Read research papers about neural network structure - began writing python script to test hyperparameters of the neural network.	6	33
Alek Comstock	Tinkering and fine tuning docker installation and container, playing around if Vitus a bit	3	26
Jeffery Kasper	Began writing code in the Vitus IDE	6	33

Plans for Coming Week

Jeffery K: Working in the Vitus environment. Writing a Proof of Concept (PoC) that will simulate the data transfer that will be necessary to successfully execute two neural networks simultaneously.

Sandro P: Talk with JR, talk with Rudy, Study up on machine learning a bit more.

Rudolph: Continue writing my program to determine the best neural network structure for the task.

Alek C.: I plan on tinkering with the IDE and hope to get Helloworld running. My stretch goal is to get lights blinking on the board. My longer stretch goal is to understand how Vitus assigns and manipulates resources.

Meeting Notes

Our meeting this week was delayed because of spring break, so we don't have any meeting notes for now.