

# EE / CprE / SE 491

## Machine Learning Heterogeneous Computing

### Week 4 Report

Time: Feb. 13 - Feb. 19  
Client: JR Spidell  
Faculty Advisor: Diane Rover

#### Team Members:

Sandro Panchame  
Rudolph Nahra  
Alek Comstock  
Jeffery Kasper

#### Weekly Summary

This week, Rudolph gave a presentation about Marabou, its uses, and how it applies to the project. Jeff finished installing petaLinux on the xilinx boards, Alek and Sandro finished/are finishing setting up their development environments.

#### Past Week Accomplishments

Alek C.: troubleshoot several possible fixes for installing the Vitis/Xilinx IDE for working on openAMP; I tried a few different versions from previous years, along with increasing the memory allocated to my Virtual Machine.

Rudolph: Read about Marabou, the tool for neural network verification, and its uses. I assembled a presentation about my findings and presented it.

Sandro: Allocated more RAM and Processors to the virtual machine, was able to run the Jan files. Still getting some issues with packages, but they don't seem to affect the output much.

Jeff K: Update firmware on Kria SOM KV260 boards. Got updated petaLinux operating systems to run on boards. Successfully established communication with the boards through serial connections.

#### Pending Issues

Alek C. The installation for the Xilinx IDE takes a long time; an hour or more, but it keeps failing each time as it approaches the halfway point. A few things were tried; different versions, restarts, and allocating more disk space. I hope to talk to my teammates more to see if they have any potential fixes.

## Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Sandro Panchame	Allocated more RAM and Processors to the virtual machine. Ran some Jan files without the kernel dying on me.	3	15
Rudolph Nahra	Read research on Marabou - Presented to the group about Marabou	6	21
Alek Comstock	Installing IDE attempts	7	18
Jeffery Kasper	Both Kria SOM KV260 boards are booting PetaLinux. Both boards needed firmware updates to fix bugs. Communication can be established through a serial connection.	6	21

## Plans for Coming Week

Jeffery Kasper - Getting open amp configured and installed on the Kria SOM KV260 boards.

Alek C. - get openAMP installed and compiled on PC, by first installing Xilinx and docker.

Stretch goal is to get it to work on board itself.

Rudolph - Delve deeper into the previous group's code and investigate how the neural network can be optimized using Marabou

Sandro - Run all jan files and figure out what they are doing exactly (so it can be described properly). Run the sample maraboupy code, solve any potential issues. Study up more on machine learning.

## Meeting Notes

Meeting this week was delayed - so we didn't meet before the report was due.

# Use case Diagram

