

## EE/CprE/SE 492

# HAML: Heterogeneous and Accelerated Computing for Machine Learning

## Semester 2 Week 1~2 Report

8/26/24 - 9/5/24

Faculty Advisor    Phillip Jones

Client                JR Spidell

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### Team Members:

Jonathan Tan	- Memory Affinity, Kria Board Manager
Josh Czarniak	- Pupil Center Location Algorithm/DPU Manager
Justin Wenzel	- Blink/No-Blink Algorithm
Kai Heng Gan	- Image Processing Developer
Santiago Campoverde	- Data Profile/Model Analytics

### Summary for Progress These Two Weeks

This week's focus was to reconnect with each other to understand progress made during the summer, as well as with our client to reevaluate individuals' roles.

### These Two Weeks' Individual Contributions

- Justin
  - Met with client during the summer to discuss building the thread managing program.
  - Began an incremental implementation thread managing program including testing, and documenting.
  - Combined incremental implementation of thread managing program into a single program for users to interact with. Creating a multithreaded environment for multiple models to operate at the same time.
- Jonathan
  - 1:1 meeting with client to discuss roles.
- Josh
  - 1:1 meeting with the client to discuss roles and plan for this semester
- Kai
  - Met with client during the summer to discuss on optimizing semantic segmentation model
  - Converted Pytorch Model to Xmodel
  - Deployed semantic segmentation xmodel on Kria board
- Santiago
  - Scheduled 1:1 meeting with client to discuss new roles
  - Meet up with group to discuss plans and goals for this semester

Team Member	These Two Weeks' Task	Completion Date	Hours Took	These Two Weeks' Hours	Total Project Hours
Justin Wenzel	Attended meetings	NA	1	1.5	103.5
	Assisted Kai with semantic segmentation model inferencing	9/3	0.5		
Jonathan Tan	Attended meetings	NA	1	1.5	119.5
	Coordinate Meeting Times with advisor.	9/5	0.5		
Josh Czarniak	Attended meetings	NA	1	2	90
	Started looking into Dpu management with mutex	9/1	1		
Kai Heng Gan	Attended meetings	NA	1	1	112.5
	Converted Pytorch Model to Xmodel	8/25	NA		
	Deployed semantic segmentation xmodel on Kria board	8/25	NA		
Santiago Campoverde	Attended meetings	NA	1	1	80

Note: 1. This is per week hours,  $\Sigma$  "hours taken" = "week hours". 2. Due to multiple meeting times, meetings' "completion date" are "NA".

### Plans for Coming Two Weeks

Team Member	Plans for Coming Week	Planned Completion	Planned Hours Required
Justin Wenzel	Transfer multi thread managing program from docker container environment to the Kria board	9/10	5
Jonathan Tan	Start looking into memory affinity on the Kria KV260.	9/19	5
Josh Czarniak	Continue working on DPU management and talking with Justin on algorithms	ongoing	5
Kai Heng Gan	Continue working and testing on preprocessing cpp code that will run on the Kria KV260	ongoing	10
Santiago Campoverde	Meet up with client to discuss new role responsibilities.	ongoing	1

