

EE/CprE/SE 491

Heterogeneous Computing for Machine Learning Algorithms

Week 4 Report

2/6/24 - 2/12/24

Faculty Advisors: Phillip Jones

Client: JR Spidell

Team Members:

- Jonathan Tan - DPU Management, Kira Board Manager
- Josh Czarniak - Pupil Center Location Algorithm, Meeting Leader of the Week
- Justin Wenzel - Blink/No-Blink Algorithm
- Kai Heng Gan - OpenCV
- Santiago Campoverde - Data Profile/Model Analytics

Summary for Progress This Week

This week's objectives were to continue meeting with the client and continue to understand our individual roles and responsibilities. We met with our advisor to get assistance in understanding project details. Our advisor offered assistance in how to utilize campus resources and lab documents to better understand programs in our project. We as a team also met to get to know each other better as well as finalize team logistics.

Pending Issues

- Waiting to receive Kira boards.

This Week's Individual Contributions

- Justin
 - Did research into VART and created presentation on it.
 - Studied over main.cc skeleton code
- Jonathan
 - Did research into XIR and present slides on it during client meeting.
 - Did research into Vitis AI and Peta Linux.
- Josh
 - Led meetings.
- Kai
 - Did research into image processing pipeline types and procedures.
 - Update OpenCV slides deck.
- Santiago
 - Did research into Data Profiling and Vitis AI Profiling tools
 - Studied ML and Hardware Concepts

Team Member	This Week's Task	Completion Date	Hours Took	This Week's Hours	Total Project Hours
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Justin Wenzel	Attended meetings	NA	3	7	11
	Created VART presentation	4	4		
Jonathan Tan	Attended meetings	NA	3	5	9
	Worked on XIR research and presentation	2/9	2		
Josh Czarniak	Lead the client meeting presentation	3	3	3	7
Kai Heng Gan	Attended meetings	NA	3	5	9
	Worked on OpenCV and image pre-processing slide deck	2/10	2		
Santiago Campoverde	Attended meetings	NA	3	7	11
	Research on Data Profiling and Vitis AI Profiling tools	2/9	2		
	Studied ML and Hardware concepts	2/9	2		

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

Plans for Coming Week

Team Member	Plans for Coming Week	Planned Completion	Planned Hours Required
Justin Wenzel	Present presentation on VART to team members	2/17	0.2
	Study final functions in main.cc skeleton code	2/16	2
Jonathan Tan	Start to understand the workflow regarding running existing code on board.	2/17	5
	Talk to ETG about hosting Kira board on ECE server so that members can access it remotely.	2/14	0.1
	Take pb file and h5 file (model files), compile them into xmodel and test loading them onto Kira board.	2/23	6
Josh Czarniak	Understand more about machine learning	2/24	5
	Investigate the functions on the main.cc file	2/17	3
	Understand the previous Teams code	2/20	3
Kai Heng Gan	Do research on how to run multi thread simultaneously	2/17	5
	Update slide deck (overall image processing stages & multi-threading).	2/17	3
Santiago Campoverde	Research and create a Vitis AI Profiling presentation	2/16	3
	Test and understand Profiler with sample data demo	2/17	2