
Machine Learning on FPGA on a Drone - Project Proposal

Capstone Team 109

**ELEC 491
University of British Columbia**

Deutsch, Peter me@peterdeutsch.ca	He, Muchen i@muchen.ca	Hsueh, Arthur ah11962@outlook.com
Wang, Meng wzfftxwd@gmail.com	Wilson, Ardell ardellw96@gmail.com	

TODO: UBC and Client branding image here

October 1, 2019

Revision History

Revision history written here.

Version #	Initials	Release Date	Changes Made
0.0	MH	2019-09-30	Initial skeleton of the document.

Contents

1	About This Document	1
1.1	Purpose	1
1.2	Intended Audience	1
1.3	Reading Guide	1
2	Background	1
2.1	Business Background	1
2.2	Project Context	1
3	Objectives, Constraints, & Goals	1
3.1	Objectives	1
3.2	Constraints	1
3.3	Goals	1
4	Project Plan	1
4.1	Major Milestones	1
4.2	Major Deliverables	2
4.2.1	Milestone I	2
4.2.2	Milestone II	2
4.2.3	Milestone III	2
4.3	Major Responsibilities	2
4.3.1	Team Responsibilities	2
4.3.2	Client Responsibilities	2
4.4	High-Level Tasks	2
4.4.1	Team Tasks	2
4.4.2	Client Tasks	2
4.5	Schedule	2
4.6	Budget	2
4.7	Quality Goals	2
4.8	Risk Profile	2
5	Approval	2
5.1	Acceptance Statement	2
5.2	Client Identification	2
5.3	Capstone Team Identification	2
	References	3

Terms and Abbreviations

Technical terms and abbreviations dictionary go here.

List of Figures

List of Tables

1 About This Document

1.1 Purpose

FIXME (requires editing)

The purpose of this document is to solidify the project outline, objective and requirements. It is meant to

1.2 Intended Audience

The intended audience is the client so that the client can confirm the requirements of the project is as they expected. It is also intended for the instructors and the TAs of our capstone team, such that they may aid us accordingly.

Furthermore, the document is also intended for our own teammates as a reference throughout the duration the milestones of the project.

1.3 Reading Guide

How to read this document.

2 Background

This section outlines the context of the project.

2.1 Business Background

Arthur: is this our background or the clients?

The project is an academic project to test the feasibility of such integration of technology between machine learning, hardware acceleration using field programmable gate-arrays (FPGAs), and a highly mobile and agile platform – i.e. a drone.

The business aspects could be not-applicable.

2.2 Project Context

fpga machine learning drone for human tracking

3 Objectives, Constraints, & Goals

3.1 Objectives

3.2 Constraints

3.3 Goals

4 Project Plan

4.1 Major Milestones

proposal - Oct 15th

prototype design review I - Nov 25th

prototype design review I - Feb 10th

prototype design review I - April 7th

4.2 Major Deliverables

4.2.1 Milestone I

Video Stream + FPGA
Basic ML implementation
FPGA dev board

4.2.2 Milestone II

4.2.3 Milestone III

Working proof of concept prototype

4.3 Major Responsibilities

4.3.1 Team Responsibilities

4.3.2 Client Responsibilities

4.4 High-Level Tasks

4.4.1 Team Tasks

4.4.2 Client Tasks

4.5 Schedule

4.6 Budget

The specifics of budget is not determined. But we do get \$650 for the entire capstone team to start.

4.7 Quality Goals

4.8 Risk Profile

5 Approval

5.1 Acceptance Statement

5.2 Client Identification

5.3 Capstone Team Identification

References