R & D
fault diagnosis component for fast develoment

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June 29, 2018

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Declaration of Authorship

I, Chetan Sidnal, declare that this Master Research and Development report titled, 'Autonomous Fault Diagnosis Framework for Robotics' and the work presented in it are my own. I confirm that:

- This work was done wholly or mainly while in candidature for a master degree at this University.
- Where any part of this report has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
- Where I have consulted the published work of others, this is always clearly attributed.
- Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this report is entirely my own work.
- I have acknowledged all main sources of help.
- Where the report is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself.

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Abstract

[TODO]

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Abbreviations

[TODO]

1 Introduction

[TODO]

2 Problem Statement

[TODO]

3 Related Work

This section is organized in a way to discuss the related scientific work per topics that fall under the scope of [TODO].

3.1 TODO

As discussed in Section 2 [TODO]

4 Approach

[TODO]

4.1 Overview

[TODO]

4.2 Software

[TODO]

4.3 Hardware

[TODO]

Table 1: GPU Speed Benchmarks

Speed benchmarks for different Covolutional Neural Networks for one forward and backward pass. The benchmarks were done on a Nvidia GTX 1080 (GPU) and Xeon E5-2630 v3 (CPU).
Source: https://github.com/jcjohnson/cnn-benchmarks (10/27/2017).

Network	Layers	Speed GPU (ms)	Speed CPU (ms)
AlexNet	8	14.56	-
Inception-V1	22	39.14	-
VGG-16	16	128.62	8495.48
VGG-19	19	147.32	9849.23
ResNet-18	18	31.54	2195.78

4.4 Approach One

4.4.1 Architecture

4.4.2 Method

5 Experimental Evaluation

[TODO]

5.1 Hardware Setup

We used a desktop computer with the following specifications:

- Gigabyte GA-X99-SLI Intel X99 (motherboard)
- Intel Xeon E5-1620 V4 4x 3.50GHz (CPU)
- 32GB DDR4-2133 DIMM (RAM)
- 8GB MSI GeForce GTX 1080 (GPU)

5.2 Evaluation Criteria

5.3 Experiments

5.3.1 Experiment One

6 Conclusion

[TODO]

7 Future Work

[TODO]

8 Appendix

8.1 Software and Tools

A software implementation of the approach and a number of tools have been included in the attached CD-ROM. The tools and software were developed as part of the project.

Available online: `https://github.com/nitred/no_imagination`