Alex Tomala - Résumé

Address [redacted]

Date of Birth [redacted]

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Email actomala@uwaterloo.ca
Website http://atomala.github.io

Education

2011-2015 Secondary Education - Cardinal Newman Catholic Secondary School, Ontario

- Graduated in June 2015
- Achieved Honour Roll status each year

Employment History

Apr 2015 - Current University of Toronto Institute for Aerospace Studies
Research Intern

Help a group of researchers in developing a robotic system by working on error correction systems and a web app to manage the system. Can't disclose the exact nature of project currently.

Mar 2015 - Current [redacted]
Volunteer Research Assistant/Contract Software Developer

Help carry out research in the area of Machine Learning. Can't disclose the exact nature of project or where I worked for legal reasons.

Oct 2014 - June 2015 The Organization for Ontario Secondary Students
IT Manager

Manages current OOSS webpages, as well as creating new ones. Provides useful help to various committees in the OOSS and provided input on making a useful internal structure.

Oct 2014 - Feb 2015 Science Expo
IT Manager

Managed the Science Expo webserver while also designing websites for various Science Expo events. Overhauled the main Science Expo website to have a modern look and defined clear locations for province specific information. Helped out with other items such as unifying the provincial Science Expo newsletters and running the 7th Science Expo conference.

Skills

- **Programming Languages**

  Python - 2.7
  C, C++, C#, Objective-C, Java
  MIPS/x86 assembly language
  VHDL

- **Research**

  Multiple years of experience conducting research on Computer Architecture
  Extensive knowledge of low-level computing concepts

- **Web Design**

  Proficient in using HTML, CSS, Javascript, and various libraries
  Experience in Apache server configuration
  Created multiple unique sites/templates with a responsive design

- **Other**

  LaTeX
  Using Valgrind and GDB

Awards

- **2014 CWSF Senior Informatics Award**

  Awarded to the best Grade 11-12 computing related project at the Canada Wide Science Fair (largest national science fair).

- **2014, 2013 Intel Excellence Award - Computer Science**

  Awarded to the best computing related project at the Bay Area Science and Engineering Fair, one of the largest science fairs in Canada.

Projects

July 2013 - April 2014 *An Innovative Approach to Multi-Core Interconnection Networks*

This personal project involved modifying an innovative memory subsystem developed by Charles Leiserson and then implementing it on a FPGA and on a software simulator (GEM5). This project involved a great deal of work and due to time constraints, the software implementation was never finished. The FPGA version was completed and it demonstrated that the architecture Charles Leiserson created can be implemented in real life without taking up too much resources on a microprocessor die. The project won multiple awards on both the Regional and National level including best Senior (Grade 11-12) Informatics project in Canada.

July 2012 - April 2013 *MIPE: Microprocessor with Integrated Programmable Execution Units*

MIPE is a microprocessor I created based off of the MIPS32 ISA and the classic 5-stage RISC pipeline. It extends the parent architecture by allowing the instruction set of the processor to be modified to suit different tasks, which can greatly speed up the execution of certain algorithms. The project won multiple awards on the Regional and National level including an Intermediate (Grade 9-10) Silver Merit Medal at the Canada Wide Science Fair.

Interests

- **Books - Various Genres**
- **Cycling**
- **Discrete Mathematics**
- **Fun History Events**
- **Photography**
- **Running**

References

References can be made available upon request