Alex Tomala

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Employment History

Massachusetts Institute of Technology   May 2016 - August 2016
Visiting Student

- Created a novel method of determining material similarity and wrote about it for a future paper
- Investigated methods to classify scientific papers using Machine Learning methods
- Maintained the groups computing infrastructure and previously developed code on them

University of Toronto Institute for Aerospace Studies   April 2015 - August 2015
Research Intern

- Developed error correction systems (using C++ and ROS) for an autonomous wheelchair
- Developed a web app (using React.js) to manage the wheelchair using a touchscreen tablet

Skills

Programming Languages	Web Design	Other
• Python, C, C++, C#, Objective-C, Java, Racket • MIPS/x86 assembly • VHDL	• D3.js • React.js/Ember.js • Bootstrap/Materialize • JQuery, HammerJS	• Machine Learning • ROS • Computer Networking • LaTeX

Education

University of Waterloo   September 2015 - Current
Candidate for Bachelor of Computer Science - 91% average

- Expected to Graduate in 2020
- Selected Courses (Advanced Level): Functional Programming, Calculus I/II, Linear Algebra I, Algebra

Projects

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

- Modified an innovative tree-based memory subsystem
- Implemented it onto a FPGA and a software simulator (GEM5)
- GEM5 implementation is planned to be used for current research at MIT

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

- Created a 5-stage RISC microprocessor based on the MIPS32 ISA
- Designed the architecture so the instruction set can be reconfigured to suit different tasks
- Developed an assembler to make programming easier

Notable Awards

CWSF Senior Informatics Award   May 2014

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

Intel Excellence Award - Computer Science   May 2014, May 2013

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