

MICHAEL CAI

1B Electrical Engineering

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EDUCATION

UNIVERSITY OF WATERLOO

CANDIDATE FOR BACHELOR OF
APPLIED SCIENCE IN

ELECTRICAL ENGINEERING

Expected June 2019 | GPA: 3.00

COURSEWORK

UNDERGRADUATE

- Protein-Structure Analysis Program
- Android App - Integrated Sensors
- PSS/E Data Analysis - InfoExtract
- Project Management
- Fundamentals of Power Systems

SKILLS

COMPUTER

VHDL • PSS/E Load Flow • C#

AutoCAD • Visual Studio

Java • Altera Quartus II

Eclipse • SharePoint • Android

TECHNICAL

AWARDS

- 2014 President's Scholarship of Distinction, University of Waterloo
- 2014 Canadian Computing Competition, St. Robert Catholic High School
- 2013 Outstanding Volunteer Award, Chinese Martyrs' Catholic Church

EXPERIENCE

TECHNOLOGY DEVELOPMENT - CO-OP ENGINEER | DISTRIBUTION

ASSET MANAGEMENT AND ENGINEERING, HYDRO ONE INC.

Jan - May 2015 | Toronto, ON

- Coordinated and controlled Research and Development projects in SharePoint, and reviewed the quality of research products against corporate standards
- Represented the Research and Development division during engagement with contractors and was responsible for the management of over 200 projects
- Produced a presentation on Power System Electronics - UPFC/HPFC and their impacts on the electrical grid to director of Distribution Management
- Created an automation script for PSS/E program and developed a program for data collection and analysis, called InfoExtract

SALES REPRESENTATIVE | GENERAL MERCHANDISE, LOBLAW'S LTD.

Sept 2012 - July 2014 | Richmond Hill, ON

- Managed entire general merchandise department by inspecting daily refunded-transactions and overseeing closing procedures

PROFESSOR AND PRIVATE TUTOR | HELEN'S MUSIC SCHOOL (GNFC)

June 2012 - July 2014 | Toronto, ON

- Designed, and created course syllabus for RCM level music theory, including Advance Rudiments, Grade 1-5 RCM level piano and Grade 8-11 academic mathematics

PROJECT EXPERIENCE

DIGITAL CIRCUITS AND SYSTEMS - ADVANCED VHDL

May 2015 - Present | Coursework Project | University of Waterloo

- Designed a traffic light control system as a sequential circuit with clock. The system controlled two traffic lights at an intersection using a state machine
- Built VHDL circuit to choose between various calculations and logical operations. This is basically a calculator which can perform multiple operations with no memory, i.e. the circuit is completely combinational

INFOEXTRACT

Jan - May 2015 | Independent Project | Hydro One Inc.

- Proposed, developed and tested a computer application that would enable user to extract data of a specific type and do a certain analysis on the data collection
- Made using Visual Studio 2010 for PSS/E Load Flow and PSS/E Harmonic Frequency Scanner Tool

HIGH VOLTAGE TESLA COIL

Jan 2015 - Present | Independent Project

- Planned general layout of basic circuitry and conducted research on construction and testing of the functionality of the tesla coil
- Experimented with wireless electricity and future implementations of
- Phase 2 - Fall 2015

BINARY CONVERSION AND PROTEIN-STRUCTURE PROGRAM

Sept - Dec 2014 | Coursework Project | University of Waterloo

- Planned, constructed and tested a decimal to binary program and a search program where a file is read and then displayed in a certain format with user defined interactions. Programs are done in C#
- Applied theory learned in classes to successfully complete all parts of the program and further explored ideas through online research and personal side projects