

# Michael Shum

*B.A.Sc., B.Ed.*

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## OBJECTIVE

To secure a position in a unique and dynamic work environment where I can best utilize my wide range of skills and passion for all elements of STEM, and continue to make positive contributions to the world.

## HIGHLIGHTS OF QUALIFICATIONS

- Passionate about STEM education and student well-being
- Excellent communication skills with people of all ages and technical backgrounds
- Experienced in creating and delivering effective and interactive mathematics lessons for grades 6-12, demonstrated through teaching work
- Strong understanding of Ontario and UK mathematics curricula
- Working knowledge of C++ and python and experienced in development and improvement of complex software projects, demonstrated through the work done on [SWIFT](#) for the Canadian Government
- Proficient with Excel and classroom data analysis

## EMPLOYMENT EXPERIENCE

### **Teacher of Mathematics – Thomas Deacon Academy, Peterborough, UK**

September 2013 – August 2017

- Pioneered and implemented a bespoke curriculum for STEM specialist students, including educational trips, project-based learning, and measured improvement in outcomes
- Cared for the social and educational well-being of students, including effective communication with stakeholders (ie: parents)
- Created and delivered successful lessons for students aged 11 to 18 in a high pressure environment, helping to improve results for the school by 14%
- Led the school's LEGO League to success at the regional and national level

### **Teacher of Mathematics – Nene Park Academy, Peterborough, UK**

September 2012 – July 2013

- Rapidly adapted teaching strategies for an unfamiliar curriculum and culture
- Instructed across a wide range of age groups, from 11 to 18 years old
- Developed techniques necessary to manage very challenging behaviour, including open communication with parents and positive encouragement for disadvantaged students

### **Technology Manager – Engineering Science Quest, Waterloo, ON**

May 2011 – August 2011

- Reduced costs associated with technical projects by collaborating with leaders and finding alternative solutions
- Facilitated computer, e-mail, and domain access for all 50 employees
- Dynamically solved technical problems on a case-by-case basis
- Planned and delivered a high-calibre student project for a press conference with the University of Waterloo and the Government of Canada

### **Reliability Engineer – Suncor Energy Inc., Fort McMurray, AB**

September 2009 – December 2009, May 2010 – August 2010

- Designed a new process to detect haul truck frame defects and optimize fleet maintenance downtime
- Communicated findings effectively with other engineers and upper management members
- Devised simple programs for efficient data analysis using a combination of C++, SAP data, and Excel/VBA

### **Renewable Energy Systems Simulation & S/W Dev – Numerical Logics Inc., Waterloo, ON**

January 2009 – April 2009

- Developed and improved software in C++ used for simulating Transpired Solar Air Collectors
- Designed and implemented a monitor scheme for a Household Solar Photovoltaic System
- Created software in C++ to organize and manipulate Global Weather Data
- Constructed and maintained an HTML website for ASHRAE Technical Committee 4.2

**PW300 Quality Engineer – Pratt & Whitney Canada, Mississauga, ON**

September 2007 – December 2007

- Analyzed and reduced causes of part failures using SAP data
- Researched and implemented a new procedure to prevent helicoil failure
- Created pivot tables and charts in Excel to analyze data
- Authored articles in the Employee Health and Safety Newsletter

**Facilities Assistant – The Hospital for Sick Children, Toronto, ON**

December 2006 – May 2007

- Created engineering drawings in AutoCAD from physical data and flow diagrams
- Oversaw the vectorization of original engineering drawings, and verified the results
- Maintained IT systems for employees in Facilities and Plant Operations
- Devised a new system to organize digital drawings and permits, and drafted a handbook to guide new users

**EDUCATION**

**Bachelor of Education, Intermediate/Senior Physics and Math**

University of Western Ontario, 2011-2012

**Bachelor of Applied Science, Mechanical Engineering, Biomechanics Option**

University of Waterloo, 2006-2011

**ACTIVITIES AND INTERESTS**

- **Music (23 years of violin, 15 years of guitar)**
- **Table-top board and roleplaying games**
- **Snowboarding and ice-skating**
- **Travelling and Photography**