

# ETHAN GUO

530 Forest Gate Crescent  
Waterloo, Ontario N2V 2X3  
519-885-5588  
ethguo@gmail.com

## TECHNICAL SKILLS

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- Extensive (7 years) experience in Python.
- Extensive experience in full-stack web application development.
- Experienced in web administration tasks such as setting up and managing web servers, databases, DNS records, CDNs, and email routing.
- Experienced with machine learning, natural language processing and computer vision.
- Also proficient in Javascript, Java, C, C#, and BASIC.

## EDUCATION

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**Sir John A. Macdonald Secondary School**  
*Waterloo, Ontario*

**2014 – Present**

- **Computer Science Club Executive** **2015 – Present**
  - Lead weekly workshops, lessons and activities for high school students.
  - Maintain an active website and discussion board for the club, running on AWS, Heroku and Cloudflare.
- Placed within top 25% of contestants in the 2015 Pascal, 2016 Cayley and 2017 Fermat Mathematics Contests, and the 2016 and 2017 Canadian Computing Competition, Senior.
- Achieved a perfect score on the 2014 Canadian Computing Competition, Junior.

## WORK EXPERIENCE

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**Kumon Assistant**  
*Kumon Math and Reading Centre, Waterloo, Ontario*

**2015 – Present**

- Assist students ranging from 4 to 18 years of age with Kumon math and reading programs.
- Grade and file student homework assignments.

## ADDITIONAL EXPERIENCE

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**Founder and Lead Organizer**  
*JAMHacks*

**2016 – Present**

- Created and organized JAMHacks, Waterloo's first high school hackathon.
- Lead a team of 5 organizers in responsibilities including sponsorships, promotions, logistics, and creating a website (<http://jamhacks.ca>).

**Maker Space Volunteer**  
*Waterloo Public Library, Waterloo, Ontario*

**2015 – 2016**

- Assisted young children with arts and craft projects and helped operate tools.
- Explained the design process, circuitry and electronic components to children.

## **PROJECTS**

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### **ETC Remote Control**

**November 2016**

- Created a web-based remote control for the ETC Element, a stage lighting console that is popular in both school theatres as well as professional venues.
- Built a MIDI interface and DTMF tone generator using a Particle Photon to input commands into the Element.
- Developed an accompanying mobile-friendly web interface using React.
- This system was used during real theatre productions at my school.

### **LEAP**

**September 2016**

*Hack the North 2016*

- Developed an Android application that uses the phone's front-facing camera as a gesture sensor and hand tracker, similar to a Leap Motion.

### **CityTracker**

**October 2015**

*Waterloo Civic Codefest 2015 (2nd place overall)*

- Created an interactive data visualization of how different neighbourhoods within a city change over time.
- Analyzed indicators such as building permits, police reports and income data over time and rendered it on an interactive map.

### **WordSENSEI**

**May 2015**

*Google Science Fair 2015*

- Developed a set of algorithms for word sense disambiguation, a subtask of natural language processing.
- Instead of using WordNet, the standard corpus for most natural language applications, we used Wikipedia as the corpus.
- The best performing algorithm achieved an almost 50% increase in accuracy over the baseline algorithm.

## **INTERESTS**

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- Head of Lighting and/or Technical Director for school theatre productions, including two productions which won awards for lighting and tech.
- Play trombone in a large concert band of 40+, smaller jazz bands, and a brass quartet.