

## SKILLS

**PROGRAMMING:** Java, C++, Maple, Arduino  
**GRAPHICS DESIGN:** CorelDRAW,  
Adobe Photoshop

## SUMMARY

- Knowledgeable in research and designing experiments: Planck's constant measurement
- Skilled in Maple, MATLAB, Excel data processing: such as using Fast Fourier Transform
- Experienced programming in Java, C++, Arduino for three years
- Assembled robotics projects involving integration of microcontrollers and user-interface
- Highly proficient in translating and interpreting between Chinese and English
- Experienced in leading teams to organize events

## EMPLOYMENT

### ESCAPE GAMES CANADA

Puzzle Engineering

2017 to Current

- Design puzzles for users to solve in a real-life escape game
- Build the circuits and hardware: capacitive sensors, buzzers, keypads
- Program in Arduino to integrate hardware such as RFID readers, lasers

### SPIRIT OF MATH SCHOOLS

Assistant Teacher

2014 to 2016

- Facilitated teaching of enriched math concepts and problem solving
- Explained contest questions in small groups

### MCCC SUMMER CAMP

Summer Intern

2016

- Designed curriculum and instructed Lego Mindstorm NXT robotics

### TORONTO POLICE SERVICES

Youth In Policing Initiative

2013

- Educated community on issues such as identity theft and cyber bullying

## VOLUNTEERING

### TORONTO CITY YOUTH COUNCIL · IT Admin - Deputy Clerk

2015 to 2016

- Oversaw administrative updates from over 50 youth councillors
- Refined and updated Toronto Chapter Website monthly
- Operated electronic voting device TurningPoint during council meetings
- Headed recruitment and training for spring term for over 50 applicants

### COMMUNITY SURF · Creative Director

2015 to 2016

- Coordinated community engagement events with over 150 participants

## PROJECTS

### PLANCK'S CONSTANT MEASUREMENT

2016

- Experimentally determined Planck's constant to  $(6.7 \pm .2)\%$  deviation
- Used Arduino and LEDs resulting total budget less than \$20

### WIND TUNNEL

2015 to 2016

- Designed and built small-scale wind tunnel for measuring force of lift and drag on airfoils
- Verified wind speed measurement to precision of  $\pm 0.3$  m/s
- Real-time updated forces on 7-Segment display and GUI using Java and ArduLink
- GUI interface controlling Arduino for changing angle of attack and windspeed
- Coordinated construction and testing in team of five

### TRANSISTOR AMPLIFICATION CURVE DETERMINATION

2015

- Regressed experimental data for base current of  $\sim 2 - 500 \mu\text{A}$
- Graphically analyzed relationship between collector-emitter power, collector current, and base current
- Determined amplification factor closely matches the transistor's datasheet

### BLACKBODY RADIATION DETERMINATION

2016

- Determined the blackbody radiation curve of an incandescent light bulb
- Programmed in Maple and Matlab to extract the wavelength
- Regressed data using Wien's Displacement Law to computer temperature of light bulb