

# Cherry Zhang

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## EDUCATION

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**University of Waterloo** – Candidate for Bachelor's in Mechatronics Engineering, Option in Management Sciences (2013–2019)

- Cumulative Average – 91.2%, Engineering Dean's List (2014–), Class Rep. (S 2017, W 2018)

## SUMMARY QUALIFICATIONS

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- Research, data analytics, optimization
- Software development
- Software Skills: R, Hadley Wickham R libraries, Android (Java), Windows (C#), iOS (Swift), ASP.NET, Angular, MATLAB, Python, C++, C, Assembly, Github, iOS (Objective-C), HTML, CSS, JS, Arduino, Raspberry Pi, VBA, AutoCAD and SOLIDWORKS

## PEER REVIEW PUBLICATIONS

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- Hollywood, J.H., Woods, D., Lauland, A., McKay, K.N, and Zhang, Y. (2018) “Better Policing Toolkit”, to appear, RAND Corp, Washington, USA. (web distribution).

## RESEARCH ASSISTANT EXPERIENCE

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**Prof. McKay (Mgmt. Sciences, UW) (January 2014 – April 2014 – full-time, paid)**

- Mobile application for stroke rehabilitation: developed a mobile Android app to assist the rehabilitation of people who have suffered a specific type of stroke (reading disorder – pure alexia)
- Literature Review: rehabilitative techniques of pure alexia and their efficacies
- Research activity: responsible for the full software life cycle, including functional specification, design specification, code development, testing, user manual, validation with stroke patient

**Prof. McKay (May 2016 – August 2016 – full-time, volunteer)**

- Mobile application for DBT (mental health) therapy: creating an iOS application that is to be used alongside traditional dialectical behavioral therapy (DBT – used to treat people with various mental illnesses)
- Research activity: researched history of DBT, current DBT practices, and practiced DBT to understand and be able to develop an effective companion iOS app.

**Prof. Smith (Electrical & Computer Engineering, UW) (September 2016 – December 2016 full-time, January 2017 – August 2017 & May 2018 – August 2018, part-time, volunteer)**

- Research activity: continuing research on a heuristic for optimal coverage path-planning algorithm for UAVs and an optimal image resolution controller (planning to publish)
- Mathematics Learned: optimization, clustering algorithms, mathematical proofs, greedy algorithms, mixed integer programming, graph theory (TSP problems), optics
- Simulations: used MATLAB and shell scripts to simulate the UAV path traversal

**RAND Corp (Washington USA) w/Prof. McKay (November 2016 – April 2017 part-time, volunteer)**

- Research activity: assisted Prof. McKay with background research and manuscript regarding various policing strategies (e.g. focused deterrence, community policing, legitimacy policing, etc.), and change management.

## **RAND Corp (Washington USA) w/Prof. McKay (April 2018 – August 2018 full-time, volunteer)**

- Research activity: working with Prof. McKay to better understand criminal justice, and data analytics on Chicago public safety data (e.g. crime statistics).

## **SOFTWARE DEVELOPMENT WORK EXPERIENCE**

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### **Imaggle - Software Engineering Intern (September 2014 – October 2014, paid)**

- End-to-End Mobile Software Development: one of two primary developers that created a working version of the Android release of the Imaggle e-commerce app from scratch
- Team Management: was co-responsible for and delegated tasks between the other intern Android developer and I

### **Microsoft - Software Engineering Intern (November 2014 – December 2014, paid)**

- Algorithms and Data Structures: designed and implemented algorithms and data structures for generating suggested content in the form of mini photo albums from the user's device's photo album based on the metadata of each photo
- Custom UI/UX Features on Mobile App: improved the UI and UX experience on the Android client application, creating custom gestures features, animations, UI elements, etc.

### **Microsoft - Software Engineering Intern (May 2015 – August 2015, paid)**

- End-to-End Mobile Software Development: primary developer at the time for the Windows 10 version of Office Lens, an image processing app that can scan documents, whiteboards, etc. on your mobile device with real-time edge detection
- Feature Development: camera and orientation sensor integration, UI, image processing library integration, testing/optimization of image-processing and real-time edge detection speeds, concurrency, memory optimization and management, image encoding/decoding, OneNote API service integration, fixing bugs, etc.

### **Oculys Health – Web Developer/Data Analytics Intern (September 2017 – December 2017, paid)**

- Full-stack Web Development: prototyped a web application (RavenDB, ASP.NET and Angular) that aids in collecting data for Oculys' predictive learning algorithms
- Predictive Learning Modelling: learned and utilized a variety of algorithms to create predictive learning models and developed these models in the R programming language

## **EXTRACURRICULARS**

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### **Machine Learning (Stanford/Coursera)**

- Completed machine learning course (certificate of completion is [here](#))
- Several exercises including: recipe recommender, predicting survival on Titanic, digit recognition with neural network (MNIST dataset)

### **Hackathons**

- Bluetooth chat system that prevents harassment on Japanese trains (Top 5 in Japan TechCrunch 2014)
- Multi-platform Android fitness application (ChromeCast/Android TV, Mobile, and Wear) (Top 6 in JPHacks 2014)

### **Volunteering**

- Community Justice Initiatives (Kitchener, Ontario)
  - Homework helper for Syrian refugee students (October 2017 –)
  - Discussing further volunteer work (20 hours per week – Summer 2018)
- Leader of Gundam Amino; grew the online community from 1500 to 3000+ members and ~250 daily active members (March 2017 –)
- Gunpla Montréal (May 2017 –)

- Sole website developer and administrator of <https://www.gunplamontreal.com/> (created from scratch)
- Panelist/Staff member for multiple Gundam/Gunpla panels at major Canadian anime conventions (e.g. Anime North and Otakuthon)
- Mentor at hackathons and an ideathon (DMTC & Microsoft – Fall 2014, Summer 2015)
- Engineering and Robotics Outreach (RoboGals & UW - Winter 2014, Summer & Fall 2015)

## AWARDS

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- 2015 President's Research Award (undergraduate research award)
- 2014 International Experience Award (international internship award)
- 2013 President's Scholarship of Distinction (academic excellence award, > 95% entrance avg.)
- 2013 Dr. B. Mabel Dunham Award (awarded to female with highest average in high school)
- 2011 Business/Entrepreneurship Award (for computer science studies)
- 2011 Gold Medal in Waterloo Science and Engineering Fair for Biotechnology