

# Cherry Zhang

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## EDUCATION

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**University of Waterloo** – Candidate - BASc Mechatronics Engineering, Management Sciences option (2019)

- Cumulative Average – 91.2%, Engineering Dean's List (since 2014)
- Class Representative (Winter 2017)

## SKILLS

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### Technical

- Descending Order: Android (Java), Windows (C#), iOS (Swift), ASP.NET, Angular, MATLAB, Python, C++, C, Github. iOS (Objective-C), Arduino, Raspberry Pi, VBA, AutoCAD, SOLIDWORKS

### Research

- Path planning, Optimization, Health Informatics, Mobile Apps for Rehabilitation, Policing Strategies

## RESEARCH EXPERIENCE (Co-op, Volunteer, URA)

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**Research Assistant – Professor Kenneth McKay (Management Sciences, Univ. of Waterloo)**

### Stroke Therapy - January 2014 – April 2014 (fulltime)

- Developed a mobile Android app to assist the rehabilitation of people who have suffered a specific type of stroke (reading disorder – pure alexia)
- Summarized known literature of rehabilitative techniques of pure alexia
- Responsible for the full software life cycle, including functional specification, design specification, code development, testing, user manual, validation with stroke patient

### Mental Health and Health Informatics - May 2016 – August 2016 (fulltime)

- Created an iOS application that is to be used alongside traditional dialectical behavioral therapy (DBT – used to treat people with various mental illnesses)
- Researched history of DBT, current DBT practices, and practiced DBT to understand and be able to develop an effective companion iOS app.

**Research Assistant – Professor Stephen Smith (Electrical & Computer Eng., Univ. of Waterloo)**

### Path Optimization – September 2016 – April 2017 (fulltime), May 2017 – ongoing (part time)

- Continuing researching on a heuristic for optimal coverage path-planning algorithm for UAVs and an optimal image resolution controller (planning to publish)
- Techniques: Optimization, Clustering algorithms, Mathematical proofs, Greedy algorithms, Mixed Integer Programming, Graph theory (TSP problems), Optics

**Research Assistant - RAND Corporation (Washington) project - assisting Professor McKay**

### Background research – January 2017 – April 2017 (part time)

- As part of the background research, researched and wrote literature reviews on various policing strategies (e.g. focused deterrence, community policing, legitimacy policing, etc.)
- To appear: Fall 2017, RAND research publication/website

## WORK EXPERIENCE (Co-op)

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### **Microsoft (Tokyo, Japan) - Software Engineering Intern (September 2014 – December 2014)**

- 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
- Improved the UI and UX experience on the Android client application, creating custom gestures features, animations, UI elements, etc.

### **Microsoft (Tokyo, Japan) - Software Engineering Intern (May 2015-August 2015)**

- Independent developer of 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
- Features - 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

### **Oculus Health (Waterloo, Canada) – Data Analytics Intern (September 2017-December 2017)**

- Prototyping a web application (RavenDB, ASP.NET and Angular) that will aid in collecting data for Oculus' predictive learning algorithms
- Learning and utilizing a variety of algorithms to create predictive learning models including simulated annealing, taboo search, genetic algorithms, clustering, and agent-based simulation, and developing these models in the R programming language

## EXTRACURRICULARS

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### **Online Courses**

- Machine learning course – Stanford/Coursera ([certificate of completion](#))
- Artificial intelligence for robotics – Georgia Tech/Udacity (ongoing)

### **Hackathons**

- Bluetooth chat system that prevents harassment on trains (Top 5 in Japan TechCrunch 2014)
- Multi-platform Android fitness application (Top 6 in JPHacks 2014)

### **Bloggng**

- Blogged about academic topics on main website
- Currently actively blogging about academic topics explored in Japanese animation (~1000 likes per blog)

### **Physical Activities**

- Participated in class intramural soccer team (placed in semi-finals)

## VOLUNTEERING & OUTREACH

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- Mentor at hackathons and an ideathon (DMTC & Microsoft – Fall 2014, Summer 2015)
- Engineering and Robotics Outreach (RoboGals & UW - Winter 2014, Summer & Fall 2015)
- Have worked with classmates – tutoring, academic help, and in one situation helped when a student needed calming during class (who then received counselling)

## 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 (95%+ high school average)
- 2013 Dr. B. Mabel Dunham Award (highest average in high school among females)