

Cherry Zhang

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EDUCATION

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

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

SKILLS

Software

- Work Experience: Android (Java), Windows (C#), iOS (Swift), MATLAB
- Project Experience: Python, C++, C, Assembly, Github
- Basic Experience: iOS (Objective-C), HTML, CSS, JS, Arduino, Raspberry Pi, VBA

Computer Aided Design

- Basic AutoCAD and SOLIDWORKS

Research

- Path planning, Optimization, Health Informatics

RESEARCH EXPERIENCE

Research Assistant - Prof. McKay (Management Sciences) (January 2014 – Current)

- Android Development: independently 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: summarized known literature of rehabilitative techniques of pure alexia and their efficacies
- Software Lifecycle: responsible for the full software life cycle, including functional specification, design specification, code development, testing, user manual, validation with stroke patient
- Research: Continuing the work with Professor McKay on my free time in order to publish at a conference

Research Assistant - Prof. Smith (Electrical & Computer Engineering) (September 2016 – Current)

- Research: Continuing researching 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: Using MATLAB and shell scripts to simulate the UAV path traversal

WORK EXPERIENCE

Microsoft - Software Engineering Intern (September 2014 – December 2014)

- 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)

- End-to-End Mobile Software Development: 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

- **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.

PART-TIME RESEARCH PROJECTS

RAND Research (November 2016 – April 2017)

- Coauthored in research and wrote literature reviews on various policing strategies for RAND Corporation (e.g. focused deterrence, hot-spots policing, community policing, legitimacy policing, etc.)

Research in Mental Health and Health Informatics (May 2016 – Current)

- **iOS Development:** Creating an iOS application that is to be used alongside traditional dialectical behavioral therapy (DBT – **used to treat people with various mental illnesses**)
- **Mental Health Research:** researched history of DBT, current DBT practices, and practiced DBT to understand and be able to develop an effective companion iOS app. Partnered with the founder of DBT, Dr. Marsha Linehan at the University of Washington.

EXTRACURRICULARS

Machine Learning (Stanford/Coursera)

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

Artificial Intelligence for Robotics Course (CS 373 from Georgia Tech/Udacity) (Ongoing)

- Learned: Monte Carlo Localization, Kalman Filters
- Will Learn: Particle Filters, Search, PID Control, and SLAM

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)
- Diagnostic and rehabilitative app for foot/gait problems (using a sock with pressure sensors and accelerometers) (PennApps 2015)

Volunteering

- Mentor at hackathons and an ideathon (DMTC & Microsoft – Fall 2014, Summer 2015)
- Engineering and Robotics Outreach (RoboGals & UW - Winter 2014, Summer & Fall 2015)

AWARDS

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