

# Andrew Liu

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## Skills

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**Languages:** C/C++, Python, Java, Scala, JavaScript

**Tools:** Git, Linux, Vim, Node.js

## Experience

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### WATonomous Self-Driving Car Team

September 2018 - Present

Core Member, Path Planning

Waterloo, ON

- Implementing A\*-based pathfinding algorithm in C++ for trajectory planning module
- Designing class hierarchy for moving objects in vehicle cost map generation algorithm

### The Home Depot Canada

May 2018 - August 2018

Software Engineering Intern

Toronto, ON

- Implemented new state logic and refactored 1000+ lines of legacy code on store product information pages
- Developed and configured Node.js backend infrastructure to synchronize responsive design testing across different mobile devices
- Reverse engineered and documented istanbul test coverage API to create a customized code coverage dashboard

## Projects

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### Reconsider

Equithon 2018, Grand Prize Winner

- Used Google Natural Language Processing APIs to analyze and detect negative sentiment in online messaging applications
- Designed complementary Facebook Messenger UI using CSS3 animations

### Autonomous Vehicle Perception Suite

- Built lane detection pipeline with Python and OpenCV using edge detection and probabilistic Hough Transform algorithms
- Developed and trained a modified MobileNet classifier to perform semantic segmentation on the Cityscapes dataset

### Window Manager

- Created a tiling window manager shell replacement in C for Windows
- Added low level shell hooks using Windows APIs to intercept keyboard shortcuts and dynamically rearrange windows

## Education

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### University of Waterloo

September 2017 - June 2022 (expected)

Candidate for Bachelor of Computer Science

Fall 2017 Dean's Honours List

### Relevant Coursework

Algorithms and Data Structures

Object-Oriented Programming

Autonomous Vehicles and Computer Vision