

61 Bishop Allen Dr, Apt 2

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|------------|--|---|---------|-------------------------------|---|---------|----------------|--|
| EXPERIENCE | Senior Software Engineer (Motion Planning) | | | | Aurora Innovation | | 2022 - present | |
| | Developed models for predicting and planning semantic driving behaviors such as merging and lane changing. | | | | | | | |
| | SDE II --> Senior SDE (Planning & Controls) | | | | Magna Electronics (formerly Optimus Ride) | | 2020 - 2022 | |
| | Designed and implemented probabilistic model for inferring trajectories and interactions between road users. | | | | | | | |
| | Formulated requirements and algorithmic design for ADAS features following automotive industry safety standards. | | | | | | | |
| | Intern (Prediction) | | | | Cruise Automation (General Motors) | | Summer 2018 | |
| | SWE Intern (Perception) | | | | Optimus Ride (L4 self-driving) | | Summer 2017 | |
| | Intern (Machine Learning / Vision) | | | | RightHand Robotics (robotic manipulation) | | January 2017 | |
| | Developer | | | | Tanius Technology (prop trading firm) | | 2015 - 2016 | |
| RESEARCH | MIT CSAIL Learning and Intelligent Systems Group | | | | | | 2017 - 2020 | |
| | Proved NP-hardness of 2D motion planning under obstacle uncertainty. WAFR 2018 & IJRR 2021 | | | | | | | |
| | Developed efficient fixed-parameter algorithm for motion planning under obstacle uncertainty. WAFR 2022 | | | | | | | |
| | Modeled value functions for guiding task-and-motion planning using graph networks. CoRL 2019 & IJRR 2021 | | | | | | | |
| | Defined constraints for safe control in the presence of mobile obstacles with unobservable policies. (preprint) | | | | | | | |
| | Designed system leveraging hierarchies to efficiently solve robotic planning tasks / POMDPs. (unpublished) | | | | | | | |
| | Stanford Autonomous Systems Laboratory | | | | | | Summer 2015 | |
| | Developed simulations comparing vehicle routing algorithms based on real-world ride requests. ICRA 2016 | | | | | | | |
| | Designed vehicle routing algorithm with 10% improvement over state-of-the-art in simulation. Intel STS 2016 | | | | | | | |
| EDUCATION | Massachusetts Institute of Technology | | | | | | 2016 - 2020 | |
| | M.Eng Electrical Engineering & Computer Science (AI Concentration), GPA 5.0 (out of 5) | | | | | | | |
| | S.B. Double Major in Computer Science and Brain & Cognitive Science, GPA 4.9 (out of 5), 5.0 in-major (CS) | | | | | | | |
| | Embedded Systems | Quantum Computation (G) | | Natural Language Processing | Computational Intelligence (G) | | | |
| | Machine Learning (G) | Theory of Computation (G) | | Advanced Data Structures (G) | Computational Cognitive Science | | | |
| | Operating Systems (G) | Robotics Science & Systems | | Computational Linguistics (G) | Design & Analysis of Algorithms | | | |
| ACTIVITIES | Site Manager | | | | Food for Free COVID-19 Relief Program | | 2020 | |
| | Directed team of volunteers for packing groceries and handing off to drivers to deliver to hundreds of households. | | | | | | | |
| | Program Director, Head Webmaster | | | | MIT Educational Studies Program | | 2017 - 2020 | |
| | Directed educational programs (Splash, Summer HSSP) reaching ~3000 students with ~1000 classes taught by ~500 teachers and run by ~100 volunteers. Mentored future directors. Maintained website used by ~5000 students. | | | | | | | |
| | Software Lead | | | | AVBotz | | 2012 - 2016 | |
| | Managed the programming team (~12 members) for autonomous submarine capable of manipulating objects, aiming and shooting torpedoes, and navigating around obstacles. International finalist (7th Place) at RoboSub 2015. | | | | | | | |
| | Co-President, HPMS Branch Director | | | | ACE Coding | | 2013 - 2016 | |
| | Managed ~16 volunteers to teach weekly programming lessons to ~100 middle school students annually. | | | | | | | |
| | Organized ACE Code Day, an 8 hour event attracting ~300 students. Taught machine vision workshop. | | | | | | | |
| | Middle School Tutor | | | | Cambridge School Volunteers | | 2019 - 2020 | |
| SKILLS | Proficient in: | C | C++ | Python | Javascript | Java | UNIX Shell | |
| | Familiar with: | C# | LabView | Matlab | Simulink | Scala | x86 Assembly | |
| | Libraries: | ROS | OpenCV | Theano | PyTorch | ReactJS | TensorFlow | |
| AWARDS | USA Computing Olympiad Platinum Division | | | | Intel Science Talent Search 2016 Semifinalist | | | |
| | Eagle Scout | | | | MIT Battlecode 2018 Finalist (9th place) | | | |
| PROJECTS | C++ | Low latency audio streaming to enable musicians to play together in-sync remotely using UDP hole-punching | | | | | | |
| | C | Web browser using Chromium's rendering engine with configurable vi-like key bindings | | | | | | |
| | C | C compiler to convert C code to x86 assembly | | | | | | |
| | Java | Neural network AI for a multiplayer platformer fighting game | | | | | | |
| | Python | Musical autocomplete to assist chord and melody composition | | | | | | |
| | Python | Gridded workspace manager for the i3 Window Manager | | | | | | |