Rowan Dempster

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Skills

Programming: C++, Java, Python, JavaScript, ReactJS, GraphQL, Relay

Environments/Tools: Git, ROS, Linux, Docker, CARLA Simulator

Education

University of Waterloo, *Electrical and Computer Engineering, MASc* **Grad: 2022**

- Supervised by Derek Rayside, research in environment modeling and motion planning at WATonomous.

University of Waterloo, *Bachelor of Computer Science* **Conferred: Jun 2020**

- Degree Honors: Dean's Honours List with 89% Cumulative Average and 90% Major Average.
- 2x recipient of NSERC Undergraduate Student Research Award (USRA).
- Completed 6/6 co-op placements, earning 5 Outstanding and 1 Excellent work term evaluations.
- Excelled in MTE544 (Autonomous Mobile Robots), ECE493 (Autonomous Vehicles), CS486 (Intro to AI), CS480 (Intro to ML), CS456 (Computer Networks), and CS458 (Computer Security and Privacy).

Research Experience

WATonomous - UWaterloo's SAE AutoDrive Challenge Team **Sep 2017 — Present**

The SAE AutoDrive Challenge is a 4 year collegiate competition comprised of 8 distinguished universities from across North America. Yearly competitions showcase the iterative design and implementation of each teams AV platform.

Year 4 Path Planning Manager, GRA **Sep 2020 — Present**

- I am currently leading 18 undergraduate and graduate students as we overhaul the planning stack, incorporating state-of-the-art research such as RoadGraph, Lanelet2, Frenet Frame local planning, and Model Predictive Control.

Year 2 & 3 Team Captain, USRA **Aug 2018 — May 2020**

- Led 100+ software, electrical, and mechanical engineers as we transformed a Chevrolet Bolt into a Level 4 autonomous vehicle. Defined a range of organizational policies aimed at increasing the team's efficiency.
- Established bi-weekly development cycles that focus on testing and iteration, driving an increase in the number of test course visits from three in 2018/19 to fourteen in 2019/20.
- Improved cohesion in cross-divisional projects by introducing formal project specifications, prompting an increase in sensor suite utilization from 25% in 2018/19 to 100% in 2019/20.

Year 1 Path Planning Manager **Jan 2018 — May 2018**

- Led 14 students as we used ROS and C++ to create a custom costmap environment representation and implement a modified RRT* path search algorithm.

Year 1 Path Planning Core Member **Sep 2017 — Dec 2017**

Work Experience

Facebook, *Software Engineer* **Jan 2019 — Apr 2019**

- Built new features for an internal tool which identifies anomalies in timeseries data and notifies subscribers.
- Gained experience with modern data structuring and querying frameworks such as GraphQL, Thrift, and Relay.

Zynga, *Software Engineer (Analytics)* **May 2018 — Aug 2018**

- Developed services that allow game teams to segment their players based on custom attributes, and assign those player segments to different variants of experiments.
- Wrote a translator to convert Zynga's segment condition grammar (ANTLR) to SQL queries, allowing game teams to request batched segment assignments. Used top down parsing over ANTLR's ParseTree.

Sony Creative Software, *Software Engineer* **Sep 2017 — Dec 2017**

- Worked as part of a small scrum team, prototyping and presenting educational software to stakeholders.
- Researched and implemented a serverless notification system using AWS IoT and the MQTT protocol.

Kik Interactive, *Android Developer* **Jan 2017 — Apr 2017**

- Implemented features including GIF favoriting and message timestamps using Java and Object Oriented design.

TribalScale, *Software Engineer* **May 2016 — Aug 2016**

- Developed the podcast section of the ABC News Android App using the OkHttp networking client and SQLite.