

# ROWAN DEMPSTER

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## SKILLS

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**Programming:**                      **Proficient:** Java, C++, JavaScript, ReactJS, GraphQL, Relay  
   **Familiar:** Python, Thrift, Node.js, SQL, MongoDB, AngularJS  
**Environments/Tools:**    Git, ROS, Linux, Jenkins, Docker, IntelliJ/PyCharm

## EDUCATION

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**University of Waterloo, Bachelor of Computer Science** **Grad: Apr 2020**  
• 88% Cumulative Average and 90% Major Average  
• Completed 6/6 co-op placements, earning 5 Outstanding and 1 Excellent work evaluations

## WORK EXPERIENCE

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**WATonomous, Team Captain** **Sep 2019 — Dec 2019**  
• Lead 100+ software, electrical, and mechanical engineers transforming a Chevrolet Bolt into a Level 4 autonomous vehicle by defining a range of organizational policies aimed at increasing the team's efficiency and cohesion.  
• Implemented a structured bi-weekly development cycle, culminating with bi-weekly test track visits.  
• Streamlined upward reporting using End of Cycle reports, which Group Managers use to communicate their group's progress and health up the management hierarchy.  
• Introduced formal project specifications for cross-divisional projects such as sensor placement, leading to higher cross-divisional cohesion and less wasted effort.

**Facebook, Software Engineer** **Jan 2019 — Apr 2019**  
• Built new features for an internal tool which identifies anomalies in timeseries data and notifies subscribers.  
• Implemented a new entry point for creating anomaly detectors, introducing thousands of new users to the tool.  
• 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.  
• Migrated experiment history blobs from JSON to SMILE encoding, decreasing deserialization heap usage by 30%.  
• 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.  
• Built application prototypes using Angular2 and Xamarin (C#), and backend solutions using AWS Lambda.

**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.

## VOLUNTEER EXPERIENCE

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**WATonomous - UWaterloo's SAE AutoDrive Challenge Team**  
**Software Division Director** **Aug 2018 — Aug 2019**  
• Architected the software pipeline which controls the vehicle, from sensor data consumption to controls actuation.  
• Designed, implemented, and rolled out WATO's server user access protocol and permissions management system.  
• Founded and lead the Drive Crew, WATO's group of production engineers that instrument the autonomous stack.

**Path Planning Group Manager** **Jan 2018 — May 2018**  
• Oversaw 14 software engineers as we worked on computing the optimal trajectory for the vehicle to follow.  
• Utilized ROS and C++ to synthesize perception input data into a costmap representation of the vehicle's environment.  
• Implemented waypoint decision and A\* search algorithms to plan an efficient trajectory through that costmap.

**Path Planning Core Member** **Sep 2017 — Dec 2017**  
• Worked with C++ and OpenGL to create visualizations of the car's environment based on perception input data.