Denis Trailin

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EDUCATION

University of British Columbia, Vancouver, British Columbia — Sep 2014 – May 2019

Bachelor of Science (B.Sc) in Computer Science

WORK EXPERIENCE

Argo AI, Remote (Vancouver, British Columbia) — Jun 2022 – Nov 2022

Motion Planning - Software Engineer

- Joined the remote guidance and trajectory selection team and worked on the C++ motion planning codebase to add the remote guidance features necessary to enable long term driverless operations
- Created detectors that used motion planning trajectories and prediction data to detect and call remote guidance in situations where the autonomous vehicles progress was impeded, like blocking vegetation or an incorrectly labeled emergency vehicle
- Implemented remote guidance commands to allow remote operators to unblock the vehicle if it is detected to be stuck
- Triaged remote guidance related trip segment failures and created motion planning recommendations to prevent them

Microsoft, Redmond, Washington — Jul 2019 – Apr 2022

Azure Service Fabric - Software Engineer

- Worked on Service Fabric, a cluster orchestrator used by thousands of services across Microsoft, on the underlying distributed transactional key-value store
- Improved the 50th percentile write performance of core disk logging systems by 4x
- Maintained the C# and C++ implementations of the replicator used in Service Fabric, fixing high impact bugs
- Supported internal and external teams as an on-call engineer resolving incidents related to cluster and replica management

Microsoft, Redmond, Washington — Jun 2018 – Aug 2018

Azure Service Fabric - Software Engineering Intern

- Increased developer visibility on excessive tracing in Service Fabric, a problem impacting production observability
- Built an extendable and configurable tool using C# to run simulated Service Fabric workloads and collect tracing data
- Created tests to detect increases in tracing across builds by measuring statistical deviation from a baseline to detect commits that greatly increased tracing above normal levels

Bloomberg LP, New York City, New York — May 2017 – Jul 2017

Feeds Distribution Infrastructure - Software Engineering Intern

- Fixed major point of failure for real time news feeds while keeping the system high performance and backwards compatible
- Updated distributed uniqueness checking server written in C++ to use an arbitrary number of nodes instead of the previous limit of two, greatly improving the resilience of the service
- Implemented dynamic leadership switching and leadership elections to the uniqueness server using Apache Zookeeper

Hootsuite, Vancouver, British Columbia — Jan 2016 – Aug 2016

Android Team - Co-op Software Developer

- Supported transition from Java to Kotlin as the main Android programming language
- Collaborated with other team members to push out critical features such as YouTube streams, Publisher approval streams, and re-auth for the core app
- Published 2 blog posts for the official Hootsuite engineering blog on unit testing with RxJava and Kotlin

University of British Columbia, Vancouver, British Columbia — Jan 2017 – Dec 2017

Teaching Assistant

- Taught and led labs for CPSC 213, Introduction to Computer Systems, a course focused on C and assembly

Trace Intelligent Systems, Calgary, Alberta — Jul 2015 – Aug 2015

Contractor

- Integrated existing open-source object tracking C++ libraries into a common framework for deployment to drones and tripod based cameras
- Ran experiments to analyze the performance and accuracy profiling of computer vision tracking algorithms

PROJECTS

UBC Sailbot, Vancouver, British Columbia — Sep 2015 – May 2019

- Worked on autonomous sailboat that broke the record for farthest autonomous crossing of Atlantic
- Built obstacle detection software for thermal cameras using computer vision and machine learning in C++
- Created microservice for satellite to boat communication in JavaScript using Node.js
- Started design and development on the next generation motion planning code in Python using OMPL