

Jack Bishop

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Education

University of Waterloo

BACHELOR OF MATHEMATICS IN MATHEMATICAL PHYSICS

Waterloo, ON

September 2018 - June 2023

Experience

evolutionQ, Inc.

SOFTWARE DEVELOPER CO-OP

Waterloo, ON

May - Aug. 2023

- Implemented caching system for quantum key networking routing algorithm which reduced query times from several seconds to a few milliseconds
- Designed and implemented features on a quantum key delivery network using Java, Spring Boot, Hibernate, and Postgres across multiple microservices
- Developed and deployed core microservices and tooling to server grade hardware and QKD satellite grade hardware for performance analysis comparisons

Institute for Quantum Computing

QUANTUM-SAFE CYBERSECURITY SOFTWARE DEVELOPER

Waterloo, ON

Jan - Apr. 2022, Sep. - Dec. 2022

- Wrote Java and C++ code for QKDNetwork, a quantum key delivery network for the BaSQuaNA (Building a Standardized Quantum Network Architecture) project
- Extended QKDNetwork to multiple nodes
- Documented progress and produced demo videos; presented encrypted VPN demo at 2022 Canadian Undergraduate Physics Conference

Institute for Quantum Computing

UNDERGRADUATE RESEARCH ASSISTANT

Waterloo, ON

May - Aug. 2021

- Worked in Quantum Optics laboratory under Dr. Kevin Resch
- Planned and built experiments for graduate laboratory including Hong-Ou-Mandel and N00N state interferometer
- Studied and presented new papers in Quantum Optics to research group

Airshare, Inc.

FLIGHT DYNAMICS ANALYST

Ottawa, ON

Jan. - Apr., Sept. - Dec. 2020

- Derived and implemented equations of motion for missiles by consulting simulated data
- Developed and implemented an interception algorithm in C++
- Modelled dispersion mechanics of countermeasure (a cloud of latex ribbons to bring down wayward drones) and computed probability of bringing down a target given a current trajectory

UW Robotics Autonomous Vehicle Racing, University of Waterloo

SOFTWARE LEAD

Waterloo, ON

Sept. 2019 - Oct. 2020

- Trained and provided support for a software-oriented team
- Augmented and maintained C++ codebase for an autonomous vehicle
- Worked with cutting-edge frameworks including ROS (Robot Operating System)
- Researched and implemented mapping and path planning techniques to improve functionality

Engineering Outreach, University of Waterloo

UNIVERSITY LEADER

Waterloo, ON

May - Aug. 2019

- Designed, built, and programmed an Arduino-compatible game console, then led campers through the process of soldering and breadboarding the device
- Presented Physics lessons and interactive demos over the course of six weeks

Skills

Fluent In
Experience With
GRE

Java, Rust, Python, C++, C
Arch Linux, Shell, Vim, Git, Spring Boot, Postgresql, JDBC/JPA, OpenAPI
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