

Johnathan Clark

Software Engineer

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Education

University of Waterloo

April 2025

Bachelor of Mathematics, Mathematical Studies

Waterloo, Ontario

- Minor in Pure Mathematics, Minor in Computing, Minor in Philosophy
- Distributed Systems, Networks, Formal Logic, Algorithms, Numerical Computation, Symbolic Computation
- Neural Networks, Group Theory, Rings and Fields, Number Theory, Geometry, Statistics, Chaos and Fractals

Skills

Languages

C++, Java, Go, Erlang, Python, SQL, JavaScript, Lua

Tools/Frameworks

Eigen, AWS, React, Node, Make, Git, Jenkins

Experience

Snowflake

Sept. 2024

Distributed Systems Software Engineer

San Mateo, California

- Incoming engineer on the Warehouse team, the core distributed compute platform for Snowflake

Snowflake

May 2023 - Aug 2023

Software Engineer Intern

San Mateo, California

- Distributed systems team - cluster orchestration and query scheduling for all compute clusters at Snowflake
- Designed tool to redistribute failed provisioning requests for compute clusters
- Completed implementation and owned rollout, saw 95% reduction in failures across millions of servers

Snowflake

Sep 2022 - Dec 2022

Software Engineer Intern

San Mateo, California

- Designed cluster orchestration fault tolerance tool that is actively managing tens of millions of servers
- Implemented tool to unblock starved compute clusters in the event of provisioning outages
- Includes requeuing node queries, redistributing VMs to free pool, and repairing depleted clusters

Amazon (AWS)

May 2022 - Aug 2022

Software Developer Intern

Vancouver, B.C.

- Designed first Erlang open source plugin for managed distributed message queue RabbitMQ
- Developed production code for distributed and concurrent message queue with multiprocessing
- Plugin asynchronously invokes AWS Lambda functions with high concurrency in under 1ms

Autodesk

Sep 2019 - Dec 2019

VR Software Engineer Intern

Toronto, Ontario

- Implemented geometric modelling/linear algebra paradigms in C++ for VR/AR incubator
- Owned full features such as NURBS surface bisect, ellipse modelling, undo/redo, application launcher

Autodesk

Jan 2019 - Apr 2019

Software Engineer Intern

Montreal, Quebec

- Implemented Redux integrated controls and Jest unit tests, improved internationalization
- Integrated C++ profiler, providing function traces for fetches, improving benchmarking, React components

Autodesk

Apr 2018 - Aug 2018

Software Engineer Intern

Toronto, Ontario

- Developed features for SketchBook, conceptual design software with 10M+ users
- Extended cross-platform framework, developed native controls, event history on iOS, MacOS, QT

Projects

Physics Engine | C++

- Created an interactive 3D fluid simulation application that uses self-made rendering library
- Utilizes Verlet integration and various concepts from differential geometry and linear algebra

Rendering Library | C++

- Implemented cross-platform bare-bones multi-threaded rendering library with OpenGL
- Wrote geometry and shaders from scratch to generate and rasterize 3D meshes on the GPU

Distributed Grep with MapReduce | Go

- Fault tolerant distributed grep using MapReduce, includes task scheduler, RPC, transactional operations
- Working on implementing Raft consensus in a distributed, sharded key/value store