Riley **Jackson**

☎ +1 (647)-992-1025 | ✉ ra2jacks@uwaterloo.ca | 🏠 rjackson2000.com | RileyJackson2000 | in RileyJackson2000

Software developer with 8 years of programming experience interested in Software Engineering, Quantitative Finance, and Research positions. Long history of success. Diverse experience. Team player that loves to learn.

Skills

Languages C++, Python, C, Bash, JavaScript, Java, Octave, HTML/CSS, x86

Tools Git, Linux, CMake, GDB, AWS, Google Test, Gurobi

Work Experience

Bloomberg   *New York City, NY (Remote)*
Software Engineer - Limits and Trading Controls ● C++   *Jan. 2021 - Apr - 2021*
- Implemented and helped design a parallel evaluation pipeline for trade compliance checks.
- Decreased latency and significantly improved throughput of a system performing hundreds of millions of compliance evaluations daily.
- Produced fully lock-free and unit-tested code; profiled and optimized to obtain better performance.

IvyGlobal   *Palo Alto, CA (Remote)*
Full Stack Developer ● Python, C#, MySQL, Azure   *Jul. 2020 - Dec. 2020*
- Developed a pipeline to query, clean, and format training data; collaborated with Riiid to build an AI test prep platform.
- Integrated exam-taking and score-reporting services while adding powerful analytics tools for instructors.
- Developed dynamic admin pages to visualize usage patterns and redesigned many frontend components.

Yahoo!   *Sunnyvale, CA*
Software Engineer - Distributed Systems & Big Data ● Java   *Jan. 2021 - Apr - 2021*
- Canceled due to COVID-19

Jasper PIM   *Toronto, ON*
Full Stack Developer ● PHP, VueJS, MySQL, AWS, ElasticSearch   *May. 2019 - Aug. 2019*
- Parallelized and optimized backend batch processing resulting in an overall 1000x performance increase.
- Revived advanced search by fixing critical indexing bug, worked directly with clients to implement custom features.
- Redesigned asset architecture to generate signed URL's and upload direct to S3, contributing to a stateless server.

Select Projects

3d Physics Engine ● C++, OPENGL, EIGEN, GTEST
- Designed and developed a constraint-based rigid body simulator with support for joints, springs, and (Coulomb) friction.
- Implemented a mathematical optimization library with support for linear, quadratic, and linear complementary problems.
- Something about GPU shaders, lighting model.

Travelling Salesman Art ● C++, OPENGL, CAIRO
- Designed a rendering engine which which takes any image and redraws it with a single line.
- Solves the travelling salesman problem on a graph obtained by stippling an image, then renders the result into art.
- Adapted and improved upon the algorithm in R. Bridson's paper "Fast Poisson Disk Sampling in Arbitrary Dimensions".

Robotics ● C++, SOLIDWORKS
- Captain of Team Canada robotics, competed in the 2017 ROBOCUP World Championship in Nagoya, Japan (4-3 record).
- Responsible for all programming and managed a team of 4 peers to oversee the construction of a soccer playing robot.

Vir ● C++, NCURSES
- Created a vim-esque terminal editor supporting modal editing, linear undo, file i/o, vim-tabs, command chaining, etc.
- Implemented C/C++ syntax highlighting; supports (contextual) keywords, identifiers, numeric literals, etc.
- Developed within 3 weeks with a strict adherence to modern C++ best practices and design patterns.

Education

University of Waterloo   *Waterloo, ON*
B. Math, Triple Major in Computer Science, Pure Math, Combinatorics & Optimization   *Sep. 2018 - Apr. 2023 (Expected)*
- 90% Cumulative GPA (93% Math Average) Deans Honour List all terms.
- Select Graduate Courses: Advanced Algorithms, Integer Programming, Continuous Optimization, Algorithmic Game Theory.