JASON SPENCE

Software Developer

JasonSpence.ca
Burnaby, British Columbia, Canada
jasonspencedev@gmail.com 778.689.6893

SKILLS AND TECHNICAL PROFICIENCES

Programming Languages:	C++, C#, C, Python, R, Qt, Java, SQL, Haskell, HTML/CSS/JavaScript
Programming:	Object Oriented (OOP), Efficient Algorithms, Optimization Mathematics, Statistical Analysis, Large Projects, Tidy Data
Documentation:	Git, Figma, Self-documenting Code, LaTeX & MathJax, Markdown, Doxygen, MS Office (Word, Excel, PowerPoint), Jupyter Notebooks
Project Experience:	Agile workflow, Team and solo, Self-directed, Detail-oriented, Problem solver, Teaching & Explaining

WORK EXPERIENCE

Software Developer, Intelligent Haptronic Solutions (IHS) Jan – Aug 2023

Internship on Medical Training Simulation Software

- Worked with Unity, Figma, Qt Creator, and Raspberry Pi
- Designed and implemented UX for training scenarios, including prompts, icons, and conditions for success
- Designed a distributed systems communication protocol for an embedded screen
- Tested and automated testing for new and existing code
- Consulted for medical and biological expertise

Software Developer, HP Inc. Sep – Dec 2022

Internship with Teradici Inc. on HP Anyware Software

- Led 'spike' investigation in TCP and UDP network connections, providing a clear path to improve stability
- Resolved security reports, to maintain Teradici Inc. under the security umbrella of HP Inc.
- Tested code revisions in a multi-platform automated build environment
- Examined dump files and logs to track down intermittent bugs
- Maintained high quality code using Git version control

High School Science Tutor Feb – Jun 2022

Physics, Chemistry, Pre-Calculus

- Taught problem-solving techniques leading to deeper understanding and greater classroom satisfaction
- Provided creative connections between subjects to solidify learning and promote long-term success
- Increased student's performance from C to A

Research Assistant, SFU, Colijn Mathematics Lab **(ISS & NSERC - USRA)** Jan – Aug 2019
Research Assistant, SFU, Brinkman Bioinformatics Lab **(NSERC - USRA)** May – Aug 2017
Research Assistant, SFU, Crespi Biological Sciences Lab **(NSERC - USRA)** May – Aug 2016

Analysis roles in the above Laboratories

- Developed flexible statistics workflows to analyze lab-produced data
- Created novel fuzzy-statistical algorithm to enable analysis of sparse anthropological data
- Co-authored and presented findings in psycho-genetics, virology, and evolutionary anthropology
- Collaborated with graduate students and post-docs to maintain high quality documentation
- Ran qPCR tests and high-accuracy gel electrophoresis on human DNA to detect SNP polymorphisms

PROJECT EXPERIENCE

Simetra Jan 2020 – Ongoing

Starship Bridge Simulator Video Game, featuring simulated physics, cooperative multiplayer, dynamically calculated thrusters, and customizability via AI assistance

- Built in custom C++ game engine with minimal external libraries as a multi-year team project
- Designed internal Matrix library with user-friendly interface and efficient backend
- Implemented algorithm to dynamically choose the most efficient thrusters to move a ship in any direction
- Built AI pilot to perform complex automatic flight maneuvers from simple inputs
- Documented team's work to accelerate new member onboarding

Nuclear Guy Oct 2021

72-hour Hackathon (LD49 Game Jam) platformer

- Built with Simetra custom game engine (see above), extended during the jam to run a platformer
- Designed and coded unique gameplay: dynamic jump height, areal maneuverability, reactor interactions
- Designed and implemented graphics for HUD and level design to convey game state at a glance

Tiger+ Jan – Aug 2019

Evolutionary Phylogeny mathematical program, based on TIGER (Cummins & McInerney, 2011); Honours Thesis

- Built with R Statistical Programming Language
- Optimized code to run twelve times faster by profiling and vectorizing the most central loops, allowing for faster iteration and experimentation
- Extended boolean algorithm to accept statistical input data, to analyze sparse human ancestry data
- Presented multi-page report on the original algorithm and my extensions

Genomic Island Aggregator May – Aug 2017

Distributed data-preparation program

- Built distributed computing program to run on SFU's brand-new Cedar Supercomputer
- Developed and tested data pre-analysis program to improve supercomputer program efficiency
- Documented and effectively communicated code, leading to smooth transition to new developer
- Presented multiple reports throughout development and incorporated feedback into the programs

EDUCATION AND PROFESSIONAL DEVELOPMENT

Simon Fraser University May 2022 – Ongoing

Second Degree in Computing Science

- Computing GPA: 4.0
- Projected Graduation: Dec 2025

SFU Choir Executive May 2017 – Dec 2023

Vice President, Website Manager, Tenor Section Leader

- Resolve internal conflicts efficiently, leading to the highest member retention within the choir's sections
- Teach music reading and singing techniques, leading to improved sound and member cohesion
- Maintain website, and facilitate online signup and dues payments

Simon Fraser University Sep 2015 – May 2020

Major in Biological Sciences and Minor in Computing Science

- Honours with Distinction

The Crawford Laboratory Jan 2016 – May 2021

Evolutionary Studies Discussion Group

- Present and discuss new research in an open question-and-answer format