

Aiden Kerr

New Grad, Computer Science

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EDUCATION

The University of British Columbia

Vancouver, BC

Bachelor of Science in Computer Science, GPA: 3.8

Sept. 2019 – May 2025

- Vice President Internal - Computer Science Student Society
- Teaching Assistant: CPSC 314 - Computer Graphics, CPSC 427 - Video Game Programming
- **Courses:** Computer Graphics, Parallel Programming, Geometric Modeling, Computer Animation

TECHNICAL EXPERIENCE

Arista Networks

Sept. 2024 – Dec. 2024

Software Engineer Intern

Vancouver, BC

- Built CLI to display structured logging for network switch routing configurations. Displayed hardware status, listed adjacencies, and flagged stale configurations.
- Extracted routing information, serialized to json, and communicated to CLI over domain sockets using C++.
- Verified CLI stability by handling and writing tests for concurrent modifications to adjacency list while printing.
- Updated method for reacting to changes to elements in a collection, resulting in 80% less memory consumption.

SAP, Concur Travel

May 2022 – Aug. 2022

Software Engineer Intern

Vancouver, BC

- Configured deployment and networking using Kubernetes, Helm, Docker, Cloudformation and shell scripts.
- Improved security by upgrading service to use TLS, wrote custom script to manage certificates.

Realtor.com

Sept. 2021 – Apr. 2022

Software Engineer Intern

Vancouver, BC

- Developed multiple React/Next.js shareable components and pages written in both Javascript and Typescript, including building the legend and modal for the wildfire risk map.
- Prevented page-crashing bug by fixing geometry of incomplete polygons in the properties map.
- Prevented map overlay syncing issues on slow networks by ignoring stale network requests.
- Reduced page load times by reworking API calls with GraphQL to cut number of calls by 50%.
- Mitigated the risk of cross-site scripting by sanitizing results intended for rendering on the page.
- Prevented unnecessary redirects and 404s by reworking the URL generation and parsing system.

TECHNICAL PROJECTS

gOOPY - 3D Scene Editor | *ThreeJS, GLSL, React, Node, Express.js, MongoDB* | Try

May – Aug. 2024

- Created a 3D scene editor with React / Three.js allowing users to create, save, and share their creations.
- Implemented backend with Node and Express, using a NoSQL MongoDB database to store scene and user info.
- Implemented raymarching in GLSL using signed distance functions, allowing for “goopy” shape interactions.
- Calculated normals by computing gradients with central differences to implement Blinn-Phong lighting.

BF Interpreter | *C++* | Repo

May 2024

- Created an interpreter for the BF language written in C++, and tested using the Google Test unit testing library.
- Improved performance by preprocessing instructions, storing possible instruction jump addresses.

Balloonium - First Place Winner | *C++, OpenGL, GLSL* | Read More

Sep. 2023 – Dec. 2023

- Awarded first place out of 18 teams, judged by video game industry professionals, for a 2D game built in team of 6 in a custom engine using C++ and OpenGL with an Entity Component System.
- Implemented electric player attack with custom electricity shader made by displacing UV coordinates with noise, using RGB texture channels to encode visual information.
- Created shaded sprites using the Blinn-Phong model with normal maps and configurable material properties.
- Implemented smooth camera movement by offsetting position based on velocity and interpolating between frames.

TECHNICAL SKILLS

Languages: C++, Python, Javascript, TypeScript, SQL

Libraries/Frameworks: OpenGL, Three.js, Z3, React, Next.js, Node.js, Express.js, MongoDB

Testing/Debugging: GDB, Valgrind, Google Test, Jest, Cypress, Mocha, React Testing Library, JUnit