





# JOEY SHI

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## TECHNICAL SKILLS

**Languages:** Scala · Java · TypeScript · HTML · CSS · Python · C/C++ · Bash · SQL · Julia

**Frameworks/Libraries:** Angular · Jasmine · Node.js · D3.js · Flask · Pandas · PyTest · Javalin · ScalaTest

**Tools/Technologies:** Git · Linux · Docker · Android Studio · Vim

## EXPERIENCE

### University of British Columbia

**Jul 2020 – Apr 2023**

*Teaching Assistant*

*Vancouver, BC*

- Led tutorials for 2 different sections of a third-year computer networking course.
- Designed PrarieLearn exam questions for the computer networking course.
- Accommodated first-year calculus tutorials for 2 different sections.
- Implemented WeBWorK questions in Perl for calculus assignments and exams.

### Vital Mechanics Research

**May 2022 – Oct 2022**

*Software Developer*

*Vancouver, BC*

- Researched topics in geometry processing and CAD software for clothing simulation.
- Developed pipeline for extracting and inferring garment geometry and stitches from GLTF and DXF files.
- Applied numerical methods and graph theoretic approaches to infer information about garment stitching.

### Visier Inc.

**Jan 2021 – Dec 2021**

*Full-Stack Software Developer*

*Vancouver, BC*

- Built end-to-end features using tools, such as Scala and Angular.
- Co-led an epic with 2 other project members to deliver a feature for resolving tenant data issues within the application.
- Built a Scala backend API for reporting and correcting data issues in tenant data versions.
- Mentored other co-op students on REST APIs, network debugging, and traversing large code repositories.

## PROJECTS

### Computer Review Site | *Javalin · JDBC · SQL*

**Nov 2022 – Present**

- Collaborated in a group of 3 to design a full-stack web application for reviewing computers.
- Implemented backend database operations and SQL queries.
- Setup Maven configurations and build scripts.
- Dockerized and deployed application on a personal Raspberry Pi.

### Multiplayer Browser Platformer | *TypeScript · Node · Socket.IO · Docker*

**Dec 2021 – Present**

- Designed a real-time multiplayer browser platformer using the HTML5 Canvas API.
- Built a backend web socket API to update and broadcast player data.
- Implemented logic for player movement, animation, physics, map design, and tile collision.
- Dockerized and deployed application on a personal Raspberry Pi.

### Differential Equation Solver | *Python · Matplotlib · Tkinter*

**Dec 2019 – Present**

- Implemented efficient finite difference algorithms to solve ordinary and partial differential equations.
- Designed a graphical user interface in Tkinter and added animated plots for visualizing the generated solutions.
- Built a CI/CD pipeline with PyTest, Tox, and Github Actions.
- Published the application on the Python Package Index.

## EDUCATION

### University of British Columbia

**Sep 2018 – May 2023**

*Bachelor of Science | Combined Major in Computer Science and Math*

*Vancouver, BC*

- Cumulative GPA: 91%
- Dean's Honour List (2018 – 2021); Science Scholar (2019)

## SCHOLARSHIPS

### Stanley M. Grant Scholarship in Mathematics

**Jan 2021**

### Charles and Jane Banks Scholarship

**Sep 2020**

### Trek Excellence Scholarship

**Aug 2020**