

# Jared Tweed

[linkedin.com/in/jared-tweed](https://linkedin.com/in/jared-tweed) | [github.com/JaredTweed](https://github.com/JaredTweed) | [Wikipedia Contributions](#)

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## EDUCATION

### Simon Fraser University

*BSc Computer Science, Mathematics Minor*

Burnaby, BC

*Sep 2020 – Apr 2025*

## WORK EXPERIENCE

### Full Stack Developer (Co-op)

*Peak HydroMet Solutions*

Apr 2024 – Present

*British Columbia, Canada (Hybrid)*

- **Soft Skills:** Engaged in in-person product improvement discussions with clients and worked as the sole developer for the business.
- **Data Processing:** Parsed JSON, XML, and CSV data using Python and utilized multithreading to optimize data curation speeds.
- **Front End:** Built custom widgets for ThingsBoard, implemented features using HTML, CSS, and JavaScript, optimized the ECharts.js charting library through multithreading, and provided UX design recommendations.
- **Back End:** Developed backend solutions using Node-RED, researched optimal APIs through documentation reviews, implemented email subscriptions using SendGrid and AWS Lambda/EC2, integrated MongoDB with Node.js, and worked with MQTT protocols.

## TECHNICAL SKILLS

**Languages:** Java, MATLAB, Python, C/C++, SQL (Postgres), HTML/CSS, Typescript, JavaScript, R, LaTeX

**Frameworks:** Angular, Node.js (Express.js), Java Swing, Flask

**Developer Tools:** Git, Docker, Google Cloud Platform, AWS Lambda & EC2, Visual Studio, Unity3D, Apache Maven

**Libraries:** NumPy, OpenCV, Detectron2, PyTorch, Regex, Tkinter, Websocket.io, MongoDB, Postman

## TRANSFERABLE SOFT SKILLS

Displayed a strong work ethic when on Yukon diamond drilling rigs (up to 95 hour workweeks).

Devoted years of volunteering and working with elementary school children.

Excelled in culturally diverse workplaces.

## PROJECTS

### Angular Report Submitter | *Angular, Leaflet API*

Dec 2023

Webpage: <https://jaredtweed.github.io/TroublemakerReporter>

Code: <https://github.com/JaredTweed/AngularWebsite>

- Built a dynamic Angular 17 web app featuring Leaflet for map visualization, form handling, event emitters, and efficient routing.
- Utilized Angular's HttpClient for backend integration, and used RxJS for asynchronous observables.

### SQL Database Query Creation | *SQL*

Feb – Apr 2023

Code: <https://github.com/JaredTweed/SQL>

- Demonstrated expertise in SQL query development for a banking database schema, focusing on data retrieval, relational database design, and practical application in real-world banking scenarios.

### Java with Maven Game | *Java, Maven, Swing Framework*

Feb – Apr 2022

Code: <https://github.com/JaredTweed/MouseMirageGame>

- Led Mouse Mirage's Java development using Apache Maven.
- Created Mouse Mirage's Java Swing interface, featuring custom graphics.
- Designed mechanics, including level progression, sound management, and UI navigation.

### Text To Question Bank Converter | *Python*

Dec 2023 – Mar 2023

Code: <https://github.com/JaredTweed/TextToQuestionBankConverter>

- Designed a GUI tool to edit text files and convert them into XML question banks optimized for error detection and correction using regular expressions.
- Used by multiple professors to generate quizzes for students.

### Relational Database Schema Analyzer | *Python*

Mar 2023

Code: <https://github.com/JaredTweed/NormalForms-CanonicalCover>

- Developed a Python tool to analyze functional dependencies in relational databases, assessing closures, candidate keys, and canonical covers.
- Implemented normalization checks (2NF, 3NF, BCNF) and verified lossless, dependency-preserving decompositions.

### R Studio Traits and Life Satisfaction Correlation | *R*

Dec 2023

Code: <https://github.com/JaredTweed/R-withStatsCanada>

- Researched correlations between personality traits and life satisfaction for Canadian residents using R and StatsCan datasets.

## COMPUTER VISION PROJECTS

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### Hand Detection App | *Traffic Analytics, Hand Detection, Stripe Payments*

Nov 2024

Webpage: <https://jaredtweed.github.io/hands>

- Developed an interactive web app using MediaPipe Hands for real-time hand detection and gesture tracking.
- Integrated Stripe and Google Analytics to increase traffic and allow credit card payments.

### Panorama Maker | *MATLAB*

Mar 2023

Code: <https://github.com/JaredTweed/PanoramaMaker>

- Used RANSAC, homographies, and Harris corner detection to manipulate and stitch images in MATLAB.

### Airplane Computer Vision | *PyTorch, Detectron2*

Nov 2023

Code: <https://github.com/JaredTweed/ComputerVision-pytorch-detectron2>

- Implemented R-CNN-based object detection, semantic, and instance segmentation using Detectron2 and PyTorch.
- Managed machine learning workflow, with data preparation, model training, and evaluation.
- Used Google Colab GPU environment, utilizing libraries for memory and GPU monitoring.

### Real-Time Digit Recognition | *PyTorch*

Dec 2023

Code: <https://github.com/JaredTweed/MNIST-pytorch>

- Created a PyTorch CNN for efficient MNIST digit classification using torchvision.

### Numpy Digit Recognition | *NumPy*

Sep 2023

Code: <https://github.com/JaredTweed/MNIST-artificial-intelligence-numpy>

- Designed ReLU, convolutional layers, max-pooling, backpropagation, and other neural network elements without PyTorch.