Jared Tweed

linkedin.com/in/jared-tweed | github.com/JaredTweed | Wikipedia Contributions

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EDUCATION

Simon Fraser University   Burnaby, BC
BSc Computer Science, Mathematics Minor   *Sep 2020 – Apr 2025*

WORK EXPERIENCE

Full Stack Developer (Co-op)   Apr 2024 – Present
Peak HydroMet Solutions   *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

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.