Jared Tweed

Bachelors of Computer Science (2020-Present)
Simon Fraser University

—

Summary of Qualifications
with underlined links to relevant projects

- HTML, CSS, Javascript, Typescript, and Angular.
- Experience with Google cloud compute engine, NodeJS, PostgreSQL, and Express for backend development.
- Java using the Maven build tool and Swing framework.
- Python with libraries such as Regex, Tkinter, xml, pytorch, numpy, OpenCV, detectron2.
- MATLAB for graph plotting and image stitching.
- C, C++
- Microsoft SQL Server Management Studio.
- R Studio
- Web scraping with Python and Google Sheets.
- Elementary Unity3D with C# knowledge.
- Matrix multiplication in assembly.
- Sorting algorithms, search algorithms.
- Data structures including trees, linked lists, and skip lists.

3131 Tide Place, Coquitlam, BC - Canadian Citizenship
(778) 979-0126
jaredtwe@gmail.com

https://github.com/JaredTweed
https://www.linkedin.com/in/jared-tweed/
https://w.wiki/9JKw

Relevant Projects

Angular Report Submitter, CMPT272, Dec 2023.
Code: https://github.com/JaredTweed/AngularProject/
Webpage: https://jaredtweed.github.io/AngularProject-webpage/

- Built a dynamic Angular 17.0.5 web app featuring Leaflet for map visualization, form handling, event emitters, and efficient routing.
- Utilized Angular's HttpClient for backend integration and secure password management via Hashify API using TypeScript and RxJS for asynchronous observables.

SQL Database Query Creation, CMPT354, Feb-April 2023.
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, CMPT276, Feb-April 2022.
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.

Transferable Soft Skills

- Excelled culturally diverse workplaces.
- Devoted several years of volunteering and working with elementary school children.
- Displayed a strong work ethic when on Yukon diamond drilling rigs.

Artificial Intelligence/Computer Vision Projects

Panorama Maker / CMPT361, Mar 2023.

https://github.com/JaredTweed/PanoramaMaker

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

Airplane Computer Vision / CMPT412, Nov 2023.

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, using libraries for memory and GPU monitoring.

Real-Time Digit Recognition

https://github.com/JaredTweed/MNIST-pytorch

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

Numpy Digit Recognition / CMPT412, Sept 2023.

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

- Designed ReLU, convolutional layers, max-pooling, backpropagation, etc, without PyTorch.

Other Projects
(non-extensive list)

Text To Question Bank Converter / Dec-Mar 2023.

https://github.com/JaredTweed/TextToQuestionBankConverter

- Designed to access a chosen text file, and edit it in an attractive GUI. which is optimized to find and fix errors in the text using regular expressions so that it can be converted to an XML question bank using the xml.etree.ElementTree module.
- Multiple professors have used this to generate quizzes for students.

Relational Database Schema Analyzer / Mar 2023.

https://github.com/JaredTweed/NormalForms-CanonicalCover

- Developed a Python tool for analyzing functional dependencies in databases, including evaluation of closures, candidate keys, and canonical covers.
- Implemented features for assessing normalization (2NF, 3NF, BCNF) and verifying lossless, dependency-preserving decompositions in relational databases.
- Designed an interface for database schema analysis and educational purposes, optimized for back-end database management efficiency.

R Studio Traits and Life Satisfaction Correlation / Dec 2023.

https://github.com/JaredTweed/R_withStatsCanada

- Researched the traits that correlated to life satisfaction for Canadian residence.