RYAN MITCHELLIN

604-657-9060 | rvm1@sfu.ca | linkedin.com/in/ryanmitchellin | ryanmitchellin.github.io

Technical Skills

Languages: Python, C, C++, Java, TypeScript, JavaScript, HTML, CSS, MATLAB, SQL, x86 Assembly

Frameworks & Libraries: Pytorch, Tensorflow, Keras, Angular, ReactJS, JSON, Git, Maven, Swing, AWT, JUnit, JaCoCo, Flask

Developer Tools: VS Code, Jupyter Notebook, GitHub, IntelliJ IDEA, Figma, MySQL, SQLite, Linux, macOS, Windows, MS Office

Projects

DermaVision AI | *Tensorflow, Keras, Javascript, Flask*

- Collaborated with a team of 5 people to develop an image classification model using Convolutional Neural Networks (CNN) with cross-validation and hyperparameter tuning via random search to identify skin lesions (e.g., Cowpox, HFMD, Measles, Chickenpox, Monkeypox, Healthy) using a Kaggle dataset for training, validation and testing.
- Deployed the trained Keras model into a web application using Flask to read user-uploaded skin lesion images, pass them to the model for classification, provide real-time predictions, offering a reference tool for patients in the absence of doctor.

Chess Prediction Optimization | *Python, Numpy, Matplotlib*

- Analyzed white player win probabilities using ELO difference with linear optimization through Bayesian Inference, employing Maximum a Posteriori (MAP) estimation. Calculated prior mean, prior covariance, posterior mean, and posterior covariance to evaluate model performance and determine the best slopes.
- Explored non-linear optimization using sigmoid cross-entropy loss function with manually implemented vanilla gradient descent and Adam optimizer. Observed that vanilla gradient descent did not converge to the objective function, while Adam successfully achieved convergence.

Portfolio Website | *ReactJS, GitHub Pages*

- Built a fully responsive portfolio website using ReactJS, where each section is separated into different components with a navigation bar to smoothly access them and having feature of submitting a contact form where I can receive it directly.
- Hosted using GitHub Pages with automated deployment through GitHub Actions to ensure live updates on each code change.

2D Haunted Hospital Maze | *Java, Maven, Junit, JaCoCo, Swing, AWT*

- Collaborated with a team of 4 people to create a 2D maze game in Java, featuring main character, enemies, rewards, traps to enhance player engagement and incorporated Apache Maven for building and managing game's automation process.
- Carried out JUnit testing to enhance code quality and JaCoCo for measuring code coverage, while leveraging Java Swing and AWT for dynamic UI development to enhance user interaction and visual appearance.

Crime Reporting Website | *TypeScript, HTML/CSS, Angular, Bootstrap*

- Designed a dynamic website using Angular for reporting suspicious activities, utilizing components, directives, pipes, and services for an intuitive user interface and efficient data flow between the user and the server.
- Integrated the Leaflet API visualizing reported incidents on map, enhancing data visualization and user engagement.

Volunteering Experience

Manager Jan. 2023-Dec. 2023

Peer Education, FIC *Burnaby, BC*

- Managed a team of 30 students who excelled in several courses to help other students who had difficulty understanding the courses, which help around 300 students per semester.
- Hosted workshops promoting Peer Education facilities and volunteer opportunities to new students, held new member interviews and student leadership training days to prepare the students to become tutors and mentors.

Work Experience

Teaching Assistant Oct. 2022-Apr. 2023

Kumon Math and Reading Centre *Burnaby, BC*

- Guided elementary and secondary students on math concepts and problem-solving techniques to enhance their learning.
- Assessed homework and classwork accurately to reflect areas of strength and weakness in students learning, maintaining accurate student progress records in the database.

Education

Simon Fraser University (SFU) Sep. 2022-Present

Bachelor of Science, Computing Science *Burnaby, BC*

Fraser International College (FIC) Sep. 2021-Sep. 2022

University Transfer Program II: Computing Science *Burnaby, BC*