

# Tanjodh Hayer

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## EDUCATION

### Simon Fraser University

Bachelor of Science in Computer Science

Burnaby, BC

September 2020 - Present

## EXPERIENCE

### Computer Science Tutor

September - December 2024

- Taught the effective use of Python libraries such as NumPy and Pandas for data manipulation and analysis, enabling students to manage real-world data sets proficiently
- Provided one-on-one and group tutoring sessions to teach foundational Python programming concepts, covering syntax, data types, control structures, and key data structures (e.g., lists, dictionaries)
- Introduced foundational machine learning concepts, such as supervised and unsupervised learning, and guided students through hands-on implementations of basic models (e.g., linear regression, k-means clustering) using scikit-learn

## PROJECTS

### RoyalCityTaxi Website | *Next.js, Tailwind CSS, Firebase, Google API, HTML*

- Developed a fully responsive web application for Royal City Taxi, ensuring seamless cross-device compatibility with modern front-end technologies.
- Utilized Firebase for secure user authentication and real-time data storage, with a more reliable solution for personalized account management.
- Integrated Google API services for enhanced functionality, including location-based features and user-specific data retrieval.
- Optimized performance with Next.js image handling, improving load times, SEO, and overall user experience.

### Predicting Diabetes | *Python, Machine Learning, Scikit-learn*

- Built a machine learning pipeline to process and analyze the Diabetes Health Indicators dataset from CDC, incorporating data preprocessing, feature selection, and model optimization for improved accuracy
- Optimized models with hyperparameter tuning, achieving an F1-score of 0.73 and AUC-ROC of 0.89; applied unsupervised clustering to uncover patterns and relationships in the data.
- Applied advanced feature engineering (Mutual Information, Random Forest importance) and conducted exploratory data analysis (EDA) using visualizations (Matplotlib, Seaborn) to identify key features and uncover insights, automating workflows to improve data processing efficiency and model performance

### LightNovel Recommender | *Java, Javascript, HTML, Python, Spring Boot, MSSQL*

- Launched a strategic Redis implementation that accelerated data access speeds; this initiative directly contributed to a 20% decrease in wait times for responses, enhancing overall service efficiency and satisfaction.
- Configured master-slave architecture using log shipping, ensuring data redundancy and high availability by automatically shipping transaction logs from the master to the slave database, enabling quick fail-over and data recovery.
- Incorporated pagination functionality to efficiently display large datasets, allowing users to navigate through the list of light novels in smaller, manageable chunks, enhancing user experience and improving performance.

### BGC Engineering Inventory System | *Javascript, React, Express.js, PostgreSQL, Node.js, Heroku*

- Engineered an advanced inventory management solution that incorporated barcode scanning capabilities alongside CRUD functionality, significantly decreasing manual entry errors for the company's entire supply chain team.
- Integrated the system with PostgreSQL, leveraging its reliability, data integrity, and robust query support, enabling accurate inventory tracking and analysis.
- Integrated the Google Maps API to display a visual graphic of the item's location and simultaneously authorized and authenticated users with Passport.js and BCrypt hashing.

## TECHNICAL SKILLS

**Languages:** Java, Python, C/C++ , SQL, Rust, Haskell, Kotlin, JavaScript, HTML/CSS

**Frameworks:** React, JUnit, Express.js, Node.js, Spring Boot, SQLite

**Developer Tools:** Git, Heroku, Redis, PostgreSQL, Firebase, Figma, MSSQL, Google Cloud Platform, Visual Studio, IntelliJ, PyCharm

**Libraries:** pandas, NumPy, Matplotlib, Seaborn, scikit-learn, PyTorch