

# Uday Daroch

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## EDUCATION

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### University of Canterbury

*Bachelor of Software Engineering with Honours (3rd year)*

Christchurch, NZ

*Feb. 2022 – Nov 2025*

## PROJECTS

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### Cycleways | *JavaFX, SQLite, Gradle, Leaflet, GeoJSON, GraphHopper API, OpenStreetMap API, Git* Aug 2023 – Nov 2023

- Developed a cycling application utilizing raw crash data from Waka Kotahi (800k entries).
- Implemented advanced filtering and sorting for improved user experience.
- Integrated route crashes onto the map with optimized clustering and lazy loading.
- Utilized GraphHopper API for accessing bike route data stored as GeoJSON.
- Constructed a robust and user-friendly interface using JavaFX and SQLite.
- Employed MVC and Spiral models for development.
- Ensured high quality with rigorous testing using Cucumber and JUnit.

### Ecom website | *JavaScript, PHP, HTML, CSS, Bootstrap, MySQL, Git*

Dec 2023 – Jan 2024

- Developed an e-commerce website with separate functionalities for admin and users.
- Implemented secure user authentication with signup option and session-based login/logout.
- Enabled product browsing, cart management, and order placement for pickup or delivery.
- Utilized MySQL database via PHP for storing user data and product information.
- Implemented secure password reset mechanism using SMTP protocol with auto-generated tokens.
- Admin functionalities included product management and insights for popular items.
- Designed responsive layout using HTML, CSS, and Bootstrap 5.3.

### Backend API with SQL (grade 98.67 percent) | *Node.js, Express.js, TypeScript, SQL, Postman* May 2024 – Jul 2024

- Designed and implemented a robust backend API using Node.js, Express.js, and TypeScript to handle data transfer and communication between client and server.
- Utilized SQL for database management, executing queries to store and retrieve data efficiently.
- Implemented various endpoints to enable client-server communication, ensuring seamless interaction with the API.
- Thoroughly tested the API functionalities using Postman, ensuring reliability and robustness.
- Followed the MCR (Model-Controller-Route) architectural pattern for a well-structured and maintainable codebase.

### Movie Recommendation Model | *Python, scikit-learn, NLTK, Dask, pandas, Surprise, Git* Feb 2024 – Mar 2024

- Developed a movie recommendation system using collaborative filtering techniques.
- Generated synthetic movie metadata and user interaction data using the Faker library.
- Preprocessed large datasets with Dask for efficient manipulation and merging.
- Utilized the Surprise library to implement and train an SVD (Singular Value Decomposition) model on the user-movie ratings dataset.
- Evaluated model performance using Root Mean Squared Error (RMSE) metric.
- Visualized the data and results using pandas and tabulate for clear presentation.
- Improved recommendation accuracy through hyperparameter tuning and cross-validation.
- Documented the project comprehensively using Jupyter Notebook and maintained version control with Git.

### Portfolio Website | *Bootstrap, HTML, CSS, Git*

Dec 2023 – Jan 2024

- Designed and developed a personal portfolio website using Bootstrap, HTML, and CSS, showcasing personal information, projects, and social media links.
- The website serves as a professional online presence, highlighting skills, experiences, and projects outside of university coursework.

### UCISA Official Website | *React.js, 000webhost, HTML, CSS, JavaScript, Bootstrap, Git*

Oct 2023 – Oct 2023

- Developed and deployed the official website for the University of Canterbury Indian Students Association (UCISA) using React.js.

- Published the website on 000webhost for public access, providing information about the club, its main members, and their backgrounds.
- Designed and implemented various web pages to showcase UCISA's activities, events, and services, fostering community engagement and communication.
- Utilized HTML, CSS, and JavaScript to create a responsive and user-friendly interface, ensuring optimal viewing experience across devices.

**Embedded System Pong Game** | *AVR-GCC, AVR-Objcopy, DFU-Programmer, C, Git*      Oct 2023 – Oct 2023

- Implemented a Pong game for embedded systems with LED matrix displays, featuring paddle control, collision detection, and scoring mechanisms.
- Utilized AVR-GCC, AVR-Objcopy, and DFU-Programmer for compiling and uploading the game code onto the embedded device.

## TECHNICAL SKILLS

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**Languages:** Java, Python, C, MySQL, JavaScript, HTML/CSS, php

**Frameworks:** React, Flask, JUnit, CucumberTesting

**Developer Tools:** Git, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse,MySQL Workbench,Bootstrap

**Libraries:** NumPy, Matplotlib