Uday Daroch

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Education

University of Canterbury — Christchurch, NZ
Bachelor of Software Engineering with Honours (3rd year) — *Feb. 2022 – Nov 2025*

Projects

Gardeners Grove Application (Uni Group Project 1) | *Spring Boot, Thymeleaf, SQL* — In process

- Developed a social platform for gardeners to manage and share their gardens.
- Used Spring Boot and Thymeleaf to build a robust backend and dynamic frontend.
- Implemented an SQL database to store garden and plant information, user profiles, and friendships.
- Enabled users to add information about their gardens, add plants, and share gardens with other users.
- Provided features to view public gardens, add or remove friends, and interact with the gardening community.

Water Depth Measurement App | *Vite, React, Node.js, Express, Neon Database* — May 2024

- Developed a water depth measurement application for a private client, focusing on accurate and reliable data collection.
- Implemented the frontend using Vite and React for a fast and responsive user interface.
- Created a user authentication system to secure access and manage user profiles.
- Built the backend using Node.js and Express to handle data processing and API requests.
- Utilized the Neon free database to store and manage measurement data and user information.

Scrumboard Management System | *React, Node.js, Express, Neon Database* — In process

- Inspired by the SENG302 course, developed a custom Scrumboard management system to improve team productivity.
- Implemented user roles, allowing admins to create and assign Scrumboard tasks for specific dates.
- Enabled team members to self-assign tasks, create sub-tasks, and track progress by ticking off completed items.
- Used React.js for the frontend and integrated drag-and-drop libraries for intuitive task management.
- Developed the backend with Node.js and Express, and used the Neon database for data storage.
- The server and client are visible on Vercel for public access (however they are currently in progress)

T20 Cricket Match Outcome Prediction Model | *Python, scikit-learn, pandas, joblib* — Jun 2024

- Developed a match prediction system using a RandomForestClassifier to predict match outcomes.
- Downloaded and extracted match data in JSON format using the `requests` and `zipfile` libraries.
- Preprocessed data, including encoding categorical variables, using `pandas` and `LabelEncoder`.
- Trained a RandomForest model and evaluated it using metrics such as accuracy, precision, recall, and F1 score.
- Visualized decision trees from the RandomForest model using `graphviz`.
- Saved the trained model and preprocessed data for future use with `joblib`.

Cycleways (Uni Group Project 2) | *JavaFX,SQL,Gradle,Leaflet, GraphHopperAPI, OpenStreetMapAPI* — 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.

Backend API with SQL(Uni Individual Project 1-grade(98/100)) | *Node, Express, TypeScript,SQL, Postman* — Jun 2024

- Designed and implemented a robust backend API for a petitions website, facilitating user interactions such as login, logout, account updates, petition creation, and supporting others' petitions.
- Utilized SQL for database management, executing queries to efficiently store and retrieve data related to user accounts and petitions.
- 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.

Frontend Application (Uni Individual Project 2-grade(96/100)) | *React, Material-UI (MUI), CSS* Jul 2024

- Developed a single-page application (SPA) using React to interact with the backend API for a petitions website, allowing users to register, log in, create petitions, support other petitions, view public petitions, and update account information.
- Implemented responsive and visually appealing components using Material-UI (MUI), leveraging its built-in CSS for consistent and maintainable styling.
- Ensured seamless user experience by managing application state effectively with React hooks, context API, and Zustand for storing user IDs and tokens, to maintain session state.
- Implemented client-side routing for dynamic navigation between different pages and features within the application.

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

Technical Skills

Languages: Java, Python, C, SQL, JavaScript, HTML/CSS, PHP
Frameworks: React, Flask, JUnit, CucumberTesting, Vite, Leaflet, Thymleaf, Springboot
Developer Tools: Git, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse,MySQL Workbench,Bootstrap, Google Cloud clustering service, Google colab, Vercel
Libraries: NumPy, Matplotlib, Dask,Panda, MaterialUI

References

Morgan English(Uni senior tutor): morgan.english@canterbury.ac.nz