Uday Daroch

022-651-5800 | UdayDaroch@gmail.com | linkedin.com/in/uday-daroch-152a51280 | https://github.com/udaydaroch

EDUCATION

University of Canterbury   Christchurch, NZ
Bachelor of Software Engineering with Honours (4th year)   *Feb. 2022 – Nov 2025*

EXPERIENCE

University Programming Tutor - University of Canterbury COSC121-131   *Feb 2025 – Present*

- Concept Explanation   Guided students through programming concepts, breaking down complex topics into clear, understandable explanations.
- Code Review and Debugging   Assisted students in reviewing and debugging code, helping them identify errors and improve problem-solving skills.
- Hands-on Learning   Developed interactive exercises and coding challenges to reinforce learning and build practical experience.
- Assignment Support   Provided structured guidance on coursework, ensuring students understood requirements and best coding practices.
- BootCamp   Assisted cosc121 bootcamp over the holidays for content recap.
- Exam invigilation   Invigilated for several courses other than cosc121-131 during mid term tests.

Contractor Web Developer - YourLegal Firm   *Jul 2025 – Present*

- Full Stack Application Development   Designing and developing a full stack web application to streamline legal processes, aiming to enhance operational efficiency.
- RAG Technology Integration   Implementing Retrieval-Augmented Generation (RAG) technology to automate document analysis and improve case research accuracy.
- Process Automation   Working on automating repetitive workflows to reduce manual processing time and increase productivity for legal teams.
- User Interface Optimization   Creating intuitive UI designs to ensure seamless user interaction and accessibility for non-technical staff.
- System Maintenance and Scalability   Planning to ensure application scalability and performing ongoing maintenance to support future firm demands.

Software Engineering Internship - Fleetpin   *Nov 2024 - 1 Feb 2025*

- Batch Query Optimization   Optimized batch processing queries, improving application performance and reducing processing time for large datasets.
- API Development and Integration   Designed and implemented robust APIs, ensuring seamless communication between frontend and backend services.
- Service Worker Implementation   Developed service worker functionalities to enable offline capabilities for the application, enhancing user experience.
- Bug Fixing and Frontend Design   Resolved critical bugs, enhanced UI/UX, and contributed to form design using Vue.js to improve usability and functionality.

Grocery Assistant - Pak'n Save   *Dec 2020 - Aug 2021*

- Stocking and Rotation   Replenished and organized fresh produce displays, ensuring items were rotated to maintain quality and minimize waste.
- Quality Assurance   Monitored and removed damaged or expired produce, maintaining high standards of freshness and presentation.
- Customer Assistance   Helped customers locate specific produce items, answered inquiries, and provided recommendations based on preferences.
- Inventory Management   Conducted stock counts, reported discrepancies, and updated inventory records to ensure accurate stock levels.
- Team Collaboration   Worked closely with the produce team to manage deliveries, restocking, and cleaning tasks efficiently.

SOFTWARE PROJECTS

Gardeners Grove Application (Uni Group Project 1) | *Spring Boot, Thymeleaf, SQL* — Nov 2024
- 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.

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)

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.

Petitions Web Application (Grade: 97/100) | *React, Node.js, Express, TypeScript, SQL, Postman, MUI, CSS* — Jul 2024
- Developed a single-page application (SPA) with a robust backend API for a petitions website, enabling user registration, login, petition creation, support for petitions, viewing public petitions, and account updates.
- Designed and implemented backend APIs using Node.js, Express, and TypeScript, with SQL for efficient data storage and retrieval.
- Utilized React and Material-UI for a responsive, visually appealing frontend, leveraging React hooks, context API, and Zustand for state management.
- Implemented client-side routing for dynamic navigation and tested API functionalities using Postman for reliability.
- Followed the MCR (Model-Controller-Route) pattern for a maintainable codebase.

Image Denoising Autoencoder (Grade: 90/100) | *Python, TensorFlow, Keras, NumPy, Matplotlib* — June 2025
- Developed an autoencoder for denoising images, leveraging deep learning techniques to enhance image quality.
- Utilized convolutional layers for feature extraction and transpose convolutional layers to reconstruct denoised images from latent space representations.
- Demonstrated in-depth knowledge of machine learning architectures to effectively process and clean noisy image data.
- Implemented and trained the model using TensorFlow and Keras, with NumPy and Matplotlib for data handling and visualization.
- Achieved high-quality denoising results through rigorous testing and hyperparameter tuning.

NFT Marketplace Contract | *Rust, Secret Network Test Network* — June 2025
- Developed a smart contract on the Secret Network Test Network (blockchain) for an NFT marketplace, enabling users to create, list, withdraw, purchase, and delete NFTs.
- Implemented private and public metadata, with private metadata visible only to the NFT owner, and restricted owners from purchasing their own NFTs.
- Utilized Rust for secure and efficient smart contract development, ensuring robust marketplace functionality.
- Enabled users to view NFT details, manage listings, and interact with the marketplace securely.
- Tested and validated contract functionality to ensure compliance with blockchain standards and user requirements.

Technical Skills

Languages: Java, Python, SQL, JavaScript, HTML/CSS, PHP, C, C#, C++, Rust
Frameworks: React, Vue, 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, apollo-client

References

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

Andrew Bainbridge Smith (Senior Lecture): andrew.bainbridge-smith@canterbury.ac.nz