

LY MY HOA (HALEY) TRAN

Sydney, NSW | haleyhoa@gmail.com | +61 451 063 993 | **GitHub:** github.com/HaleyyT | **Portfolio:** haleytran.vercel.app

Computer Science & Data Science student at the University of Sydney, and [Coding Fest 2026](#) finalist selected to showcase [FloodGuard](#), a reliability-aware flood decision-support prototype. Built full-stack applications and applied AI solutions. Experienced in React, Node.js/Express, MongoDB, Python, and SQL, with project work spanning healthcare data, APIs, workflow-oriented software, and client-server systems. Built and evaluated machine learning models on health-related datasets, and developed practical software with a focus on clean architecture, debugging, reliability, and real-world usability. Keen to contribute to products development through thoughtful engineering, fast learning, and strong problem-solving.

SKILLS

Languages: Python, R, SQL, Java, C++, C, JavaScript, HTML/CSS

AI/ML & Data: PyTorch, scikit-learn, CNNs, transfer learning, Random Forest, cross-validation, class weighting, evaluation, benchmarking, macro-F1, balanced accuracy, confidence intervals, data analysis, visualisation, experiment reporting

Software Engineering: REST APIs, Node.js, Express, object-oriented design, data structures & algorithms, testing, validation, debugging, CI/CD, Agile/Scrum

Tools & Platforms: Git/GitHub, Docker, RStudio, Weka, MongoDB, Gradle, Jira

PROJECTS

ML Classifiers on Health Data (Python) | Mark: High Distinction | [GitHub Link](#)

Tech: Python, Weka, Naive Bayes, Decision Trees, stratified k-fold cross-validation, data preprocessing, model evaluation

- Implemented end-to-end Naive Bayes and Decision Tree classifiers including pruning, optimisation variant on a clinical dataset. Evaluated with stratified k-fold cross-validation; reported performance with clear experimental notes and discussion. Performed data preprocessing and analysed error cases to improve reliability.
- Improved a custom decision-tree variant to 76.33% accuracy using gain ratio and early stopping, and implemented Naive Bayes with results within 0.14% of Weka's benchmark.
- Analysed model behaviour, limitations, and classifier trade-offs in a technical report awarded High Distinction.

FloodGuard: Flood Awareness & Decision-Support | [GitHub Link](#) | [Demo Link](#)

Tech: React/Vite, Node.js, Python, REST APIs, Recharts, JSONL, rule-based risk logic, ML, automated testing

- Built a Node/React flood-awareness prototype covering 3 local areas, integrating rainfall, river, weather, and community-report signals into an explainable decision-support dashboard.
- Engineered reliability-aware ingestion and API logic with source freshness checks, fallback states, degraded-mode handling, provenance, and audit output for transparent risk interpretation.
- Developed rule-based concern scoring, notification logic, historical snapshots, feature exports, 90+ automated backend/contract tests, and a Python shadow-mode ML pipeline for future model calibration.

Virtual Scroll Access System (Java) | University Teamwork Project, Mark: 100 | [GitHub Link](#)

Tech: Java, Gradle, JUnit, JSON, Jenkins, Docker, JaCoCo, Git/GitHub, Agile/Scrum

- Led a team of 4 as Scrum Master, coordinating sprint planning, branch-based development, code reviews, and weekly client demos for a production-style Java application.
- Built a CI/CD pipeline with Jenkins, Docker, Gradle, JUnit, and JaCoCo, supporting automated builds, testing, integration checks, and 75%+ code coverage.
- Delivered core workflows for upload/download, search, preview, page-table functions, validation, and record organisation in maintainable service-layer logic, improving testability and extensibility, achieving 100% feature completion.

Real-time Communication Platform (MERN Stack) | [Github Link](#) | [Website Link](#)

Tech: JavaScript, React (Vite), Node.js, Express, MongoDB, JWT, REST APIs, Socket.IO

- Built a full-stack communication platform with JWT-authenticated sessions, protected routes, and persistent conversation/message models using React, Node.js/Express, and MongoDB.
- Developed secure REST APIs for authentication, session restore, user lookup, chat history retrieval, and message storage.
- Implemented Socket.IO-based real-time messaging with online presence, typing indicators, unread counts, and instant updates across active sessions, improving responsiveness and reducing polling-based refreshes.
- Refactored real-time socket state into a reusable context/provider, improving maintainability and making new live features easier to scale.

EDUCATION | ACTIVITIES & LEADERSHIP

Education: The university of Sydney (Bachelor of Science - Computer Science and Data Science)

Relevant coursework: High Distinction - SOFT2412: Agile Software Development; DATA3888: Data Science Capstone.

Distinction: COMP3520 - Operating Systems; COMP2123 - DSA; SOFT2201: Software Design and more.

Multi-university competition - Coding Fest 2026 Finalist

Peer Mentor: Mentored a group of 10 students, providing academic and administrative guidance while supporting their transition to university life. Shared weekly updates and participated in social activities to build a sense of community.

Computing Society: Participated in machine learning and AI workshops to deepen technical and teamwork skills.