

Udana Jayasekara

Software Engineer | Full-Stack Development | Cloud, Data & Digital Systems

su.jayasekara@outlook.com | udanajayasekara.com | linkedin.com/in/su-jayasekara | github.com/shakumaru

Melbourne, VIC | Open to relocation Australia-wide

Full Australian working rights, Temporary Graduate visa (subclass 485) valid to March 2028. No sponsorship required.

PROFESSIONAL SUMMARY

Software engineer with a Master of Information Technology from RMIT (GPA 3.6) and practical full-stack experience in React, TypeScript, Node.js and AWS. Recent work includes a blockchain token payment platform delivered for an industry client, a tutor recruitment system built on TypeORM and Cloud MySQL, and a Python algorithms project comparing Dijkstra, DFS and greedy solvers on runtime and optimality. Earlier commercial work in embedded electronics, where I shipped a driver library for other developers to build on, gave me a grounding in API design and structured debugging. I am seeking a graduate or junior software engineering role.

TECHNICAL SKILLS

Languages: Java, Python, TypeScript, JavaScript, Kotlin, SQL, C and C++

Frontend: React, JavaFX, responsive UI development, authentication flows, client-side validation

Backend and APIs: Node.js, Express, REST API design, TypeORM, JDBC, MVC and layered architecture, server-side validation

Cloud and DevOps: AWS Amplify, AWS Lambda, DynamoDB, S3, Docker, Linux, Git and GitHub

Databases and Data: MySQL, Cloud MySQL, SQLite, MongoDB, ER modelling, normalisation, analytical SQL, Jupyter Notebook, KNIME

CS Fundamentals: Data structures and algorithms, graph algorithms (Kruskal, Dijkstra), DFS, greedy heuristics, complexity analysis, object-oriented design, design patterns

Engineering Practice: Requirements engineering, UML, agile sprint delivery, JUnit 5 unit testing, user stories and acceptance criteria, version control

Security and ML: SQL injection and XSS testing, HTTP request analysis, Wireshark, adversarial ML (JSMA, Carlini and Wagner), Decision Tree and KNN classification

Mobile and Web3: Android Studio, Flutter, Firebase, map integration, Base Chain smart contracts, Thirdweb, MetaMask

ENGINEERING AND TECHNICAL EXPERIENCE

Embedded System Development Engineer

Feb 2021 – Aug 2021

Aptinex (Pvt) Ltd., Sri Lanka

- Developed and debugged C and C++ firmware for severely memory-constrained microcontrollers. On a timing-critical ATtiny13 dimmer, diagnosed cut-off instability and flicker to root cause.
- Designed and shipped an Arduino library for the AM1805/AM1815 RTC. Its public API covers date and time, alarm interrupts and sleep/wake control, enabling integration by other developers without reference to the datasheet.
- Delivered five modules from requirements through to production-ready design, turning client requirements into specifications, component decisions and test plans.
- Diagnosed faults across hardware, firmware and interface boundaries, isolating root causes across system layers.
- Documented design decisions, test results and fault findings for design reviews and handover.

ADDITIONAL EXPERIENCE

Team Member

Jan 2023 – Present

Woolworths Group, Melbourne VIC

- Maintained continuous part-time employment for over three years while completing two full-time master's degrees, working across grocery, nightfill and fresh food departments.

Electronics and Design Engineer (Trainee)

Sep 2021 – May 2022

Nemark Technologies (Pvt) Ltd., Sri Lanka

- Supported the design and configuration of solar power generation systems, assisting with component selection and system layout.
- Assisted senior engineers with practical electrical and electronic engineering tasks.

EDUCATION

Master of Information Technology (GPA 3.6 / 4.0)

Feb 2024 – Dec 2025

RMIT University, Melbourne, Australia

Key modules: Algorithms and Analysis, Full-stack Development, Database Concepts, Cloud Computing, Practical Data Science with Python, Ethical Hacking and Security Testing

Master of Engineering, Manufacturing (GPA 3.8 / 4.0)

Feb 2023 – Dec 2023

RMIT University, Melbourne, Australia

Key modules: Advanced Manufacturing, Industry 4.0 Technologies, Manufacturing Systems Modelling

Bachelor of Engineering, Robotics and Mechatronics (Honours) (GPA 3.3 / 4.0)

Feb 2019 – Dec 2021

RMIT University, Vietnam

Key modules: Design for Assembly and Automation, Advanced Robotics

SELECTED SOFTWARE PROJECTS

Digital Asset Attestation Platform (DAAP)

Industry Capstone

- Integrated a blockchain token payment system into an existing AWS-hosted application for an industry client, implementing the DAX token workflow across Base Chain smart contracts with Thirdweb and MetaMask handling wallet authentication.
- Built the React user and admin interfaces covering payment processing, wallet balances, transaction history and discount management, over an AWS Amplify, Lambda, DynamoDB and S3 backend that supported minting, burning and reward logic.
- Delivered in agile sprints with functional testing throughout.

Stack: React, AWS Amplify, Lambda, DynamoDB, S3, Base Chain, Thirdweb, MetaMask

TeachTeam: Tutor Recruitment Platform

Full-Stack Development Project

- Built a recruitment platform end to end: the relational data model, authentication, candidate profiles, tutor and lab-assistant application workflows, and the lecturer-side filtering and selection screens.
- Implemented a TypeORM data layer over Cloud MySQL, added visual reporting for selection decisions, and enforced validation on both the React frontend and the Express backend.

Stack: React, TypeScript, Node.js, Express, TypeORM, Cloud MySQL

Weighted Maze Generation and Solving Algorithms

Algorithms and Analysis Project

- Implemented a Python suite covering Kruskal-based maze generation, Dijkstra shortest-path solving, a brute-force DFS solver for non-overlapping entrance-to-exit paths, and a greedy heuristic for faster all-pairs routing.
- Compared the approaches through theoretical complexity analysis and empirical benchmarking, identifying the point at which the greedy solver's speed advantage no longer offsets its loss of optimality.

Stack: Python, graph algorithms, Kruskal, Dijkstra, DFS, greedy heuristics, complexity analysis

CodeQA: Q&A Platform Engineering

Software Engineering Project

- Progressed a Q&A platform from requirements engineering through system architecture to implementation, defining functional and non-functional requirements and designing a layered architecture accordingly.
- Produced use case, class, activity and sequence diagrams, then implemented post creation and comment handling in Java with rule-based validation and JUnit 5 coverage, under Git.

Stack: Java, JUnit 5, UML, layered architecture, Git and GitHub, user stories

The Reading Room: Bookstore Application

Advanced Programming Project

- Rebuilt an object-oriented console application as a JavaFX desktop application with JDBC persistence, applying MVC and standard design patterns for maintainability and extensibility.
- Implemented user accounts, dashboards, cart and checkout with field validation, CSV order history export, and separate administrator functions for stock and inventory management, verified with unit tests.

Stack: Java, JavaFX, JDBC, MVC, design patterns, unit testing

Web and AI Security Analysis

Cybersecurity Project

- Exploited deliberately vulnerable web services with crafted SQL injection payloads and stored XSS, extracting request parameters and tokens to automate an XSS worm performing profile updates.
- Evaluated adversarial attacks against image classifiers using JSMA and Carlini and Wagner methods, measuring how small perturbations mislead model predictions.

Stack: SQL injection, stored XSS, HTTP request analysis, Wireshark, adversarial ML

ADDITIONAL PROJECTS

- **COVID-19 Vaccination Database and SQL Analytics.** ER modelling, normalisation and analytical SQL across locations, age groups and manufacturers.
- **BuddyMove Preference Prediction.** Decision Tree and KNN classification compared using confusion matrices.
- **Location-Based Clean-Up Management App.** Android app with map markers, search and filter, and Firebase auth with role-based access.
- **ARL Website Usability Evaluation.** Moderated remote think-aloud testing and UX recommendations.