

Ashwin Rajesh

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EDUCATION

University of Technology Sydney

Bachelor of Software Engineering (Honours) 79 WAM

- Recipient of Best Capstone Poster Award 2025
- Dean's List 2024

Ultimo, NSW

Feb 2021 – Dec 2025 (expected)

EXPERIENCE

Full-Stack Software Developer

November 2022 – July 2023

Gecko.rent

Ultimo, NSW

- Implemented inventory tracking, product addons, review systems and more using MongoDB, GraphQL & NextJS.
- Retained customers by decreasing load times by more than 90 seconds by using static paths and rendering.
- Developed a cronjob-based backend service to enable auto-scheduled emails. Brought in more product reviews.

Research Assistant

Mar. 2024 – Present

University of Technology Sydney

Ultimo, NSW

- Built a research demo app (NextJS, Actix, MongoDB) with real-time charts, contour maps, and diagrams.
- Established a robust CI pipeline and reproducible builds using Nix, saved time during cloud migration.

Casual Academic

Feb 2025 – Aug 2025

University of Technology Sydney

Ultimo, NSW

- Mentored undergraduate students about fundamental embedded programming concepts.
- Assisted students on their practical embedded projects, giving them technical and design practice counsel.
- Evaluated students' performance and grade them based on their technical and practical proficiency.

PROJECTS

Software Studio Project: Pantry Pilot | *Cloudflare, Tanstack, OpenCV, YOLOv11*

Jul 2025 – Present

- Designed a Rust backend for running fresh produce image detection capable of high loads.
- Utilized multiple worker threads with multiple NN models. Implemented round-robin scheduling to assign requests
- Implemented object counting by combining OpenCV-style filters and algorithms with custom area processing.
- Reduced round-trip request time by 29% compared to a single shared-model architecture.
- Created a camera component from scratch in React capable of uploading screenshots to the backend.

PasteBuff | *Rust, Tokio, Lua, Nix, Docker*

Aug 2025 – Present

- Architected and developed a self-hostable service to store and retrieve clipboards using Tokio asynchronous Rust.
- Developed a custom LRU cache with space-optimized storage of clipboard content.
- Currently integrating into Neovim as a plugin using Lua, along with from-scratch TCP socket handling.

Zyenyo Typing Test Bot | *Java, Rust, NextJS, MongoDB, Docker*

June 2020 – Present

- Developed an application using Java to serve typing tests in Discord. Currently used in multiple large servers.
- Used MongoDB aggregation functions to perform statistical analysis on collected typing data.
- Helped create a performance rating algorithm, associating users' WPM, accuracy and prompt difficulty.

Open Source Contributions | *Polybar, Gromit-MPX, React-Native-Dates, ClubVotingSystem, FuzzJudge, scrot*

EXTRA CURRICULAR

UTS Programming Society Executive

October 2024 – Present

University of Technology Sydney

Ultimo, NSW

- Hosted Workshops such as Intro to programming, Vim Motions, Embedded Systems development etc.
- Helped organise a programming competition. Designed and tested competition questions to challenge participants.
- Contributed to community projects such as the club voting system and competition judging system.

TECHNICAL SKILLS

Languages: Rust, Typescript, C++, C, C#, Lua, Java, Python, Bash

Frameworks: NextJS, GraphQL, MongoDB, Postgres, Cloudflare, Shuttle, Nginx, Hugo, esp-idf, Arduino, AVR, SQLite

Developer Tools: Git, Docker, Vim, Tailscale, Nix, Jira, Latex

Libraries: tokio, serde, yolov11, onnx-runtime, opencv, libuv, numpy, matplotlib, twilio, react-hook-form