

TANVIR SINGH

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SUMMARY

Graduate software engineer, full-stack and cloud (Macquarie University, finishing November 2026). Australian citizen, available immediately. Built the FastAPI backend and booking platform that runs a cricket academy of 30+ players, with **282 automated tests** in a **CI/CD pipeline**, and delivered **12 Agile sprints** for a real client on an industry placement.

EDUCATION

Macquarie University

Feb 2023 - Nov 2026 (expected)

Bachelor of Information Technology, Software Technology major

- **WAM 75**. Coursework: Data Structures & Algorithms, Object-Oriented Programming, Systems Programming, Databases, Networking, Distributed Systems, Software Systems Development & Operations.

EXPERIENCE

Software Developer & Documentation Lead, *Waranara Library Exhibition*

Feb 2026 - Jun 2026

- On an industry placement, built C# gameplay and UI systems for an interactive Unity exhibit over **12 weekly Agile sprints** (150 hours, Jira, Git), delivering **7 project deliverables**; the client praised the final build.
- Reduced playtest-reported issues **from 3 to 0** by logging each in Jira and reproducing it before fixing it.
- Enabled a non-technical client to run the exhibit independently by leading **80+ pages of documentation** for a five-person team.

Co-Founder & Technical Operations Lead, *Precision Cricket Academy*

Mar 2025 - Present

- Saved **3-5 hours of weekly administration** by moving scheduling, availability and payment tracking from individual calls and messages to shared spreadsheets, while managing bookings for 30+ families.
- Helped grow the academy **from 5 to 30+ players**, running **30+ sessions a week** with 2 coaches and 2 clubs.

Academic Tutor (Mathematics & STEM), *Kumon Education*

Apr 2019 - Jun 2025

- Raised grades by **30%** (monthly tests, school marks) across **50+ students**, 15 hours a week.

PROJECTS

Sports Academy Platform | *React, TypeScript, FastAPI, PostgreSQL, Docker* precisioncricket.vercel.app | Sep 2026 - Oct 2026

- Built a full-stack platform in five delivery phases that now runs all bookings for a **30+ player cricket academy: 30+ sessions a week**, 2 coaches and 2 clubs (the public demo uses made-up data).
- **Prevented double-booking** of the last place in a session, across **30+ sessions a week**, by locking the session row during booking and backing it with a database constraint.
- Implemented **role-based access control** for coaches and administrators, ensuring data security and appropriate feature visibility; secured logins with Argon2 hashing and JWT tokens.
- Kept releases safe with **282 automated tests** (188 backend, 72 frontend, 14 end-to-end, 8 MCP) in GitHub Actions CI.

CoolBlocks: Urban Heat Simulator | *Python, FastAPI, SOLWEIG, Docker, MCP*

coolblocks.cool | Oct 2026

- Built the backend for a Climate Hack-tion 2026 entry: a FastAPI service that edits 1 m campus maps and runs the SOLWEIG heat model before and after each change, **2 seconds per run**, served live through a Cloudflare Tunnel.
- Fixed SOLWEIG treating Southern Hemisphere trees as leafless in summer, which understated tree cooling by **over half**; 10 street trees then lowered the feels-like temperature at the coolest spot **from 46.5 to 39.8 degrees C** at 3pm.
- Collaborated on a **27-tool MCP server** so AI agents can edit and simulate the map (a teammate built most of the MCP layer).

QuestShaper Multiplayer Game Server | *Java, REST APIs, Docker, AWS, Terraform*

Feb 2026 - Jun 2026

- Led backend for a three-person team over 8 sprints, building a **7-endpoint Java REST API** for authentication, game state, inventory and player actions.
- Replaced a **4-minute** manual deploy with a Docker, Terraform and GitHub Actions pipeline averaging **40 seconds**.

Distributed Systems Job Scheduler | *Python, TCP sockets, XML*

Feb 2026 - Jun 2026

- Reduced average job turnaround time by **over 99%** versus a baseline, in tests of up to 10,000 jobs, by co-designing a client-server scheduler over TCP sockets that breaks ties on queue length, capacity and available resources.

DormDeals, Campus Marketplace App | *Flutter, Dart, Firebase*

Feb 2026 - May 2026

- Shipped a cross-platform (Android and web) campus marketplace solo, **available to over 250 university students**, integrating real-time Firestore listings and map-based discovery.

TECHNICAL SKILLS

Languages: Python, Java, C#, TypeScript, Dart, SQL

Cloud & DevOps: AWS EC2, Docker, Terraform, GitHub Actions (CI/CD)

Frameworks & Databases: React, FastAPI, REST APIs, JWT authentication, Flutter, Firebase, PostgreSQL, MySQL

Tools & Testing: Git, GDB, JUnit, pytest, Vitest, Playwright, Linux, Jira, Wireshark, networking (TCP/IP)

AI-Assisted Development: Claude Code, Cursor, GitHub Copilot, Codex (every output reviewed before use)

CERTIFICATIONS

AWS Certified Cloud Practitioner; GitHub Foundations; HackerRank Software Engineer, SQL (Advanced), REST API (Intermediate).