

# Jenul Ferdinand

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## Education

Bachelor of Computer Science | Monash University | Clayton Campus

Studying

## Projects

MonSTAR: Monash University's Open-Source Course Review and Search Platform

[Website](#) [GitHub](#)

- A digital platform built for Monash University students to easily browse and review subjects and electives.
- Maintains average 1,000+ monthly visits with official endorsement from the Monash IT Faculty.
- Developed the backend using Node.js and MongoDB, implementing RESTful API endpoints.
- Developed a reactive frontend using Angular with a Model-View-Controller architecture.
- Designed WebCoLa course progression graphs using requisites data from backend APIs.
- Populated the MongoDB Atlas database using scraped course and subject data.
- Optimised GEO/SEO strategies to maximise search visibility across 10,000+ generated pages.

md2data: A Tool to Convert Markdown Documents into Structured Data

[npm](#) [PyPi](#) [Crates.io](#) [GitHub](#)

- A high-performance library and CLI tool to convert markdown into JSON, TOML, YAML, or XML.
- Wrote parsing logic in Rust by constructing an Abstract Syntax Tree, utilising the pulldown-cmark pull parser.
- Created bindings for Node.js and Python, with a GitHub workflow that publishes to NPM, PyPi, and Crates.io.

## Work History

Computer Science Intern

August 2025 – October 2025

Hawthorn Football Club

Mulgrave, VIC

- Mentored by the tech and data GM, tasked to build a workflow optimisation project to assist the coaching staff.
- Enterprise AI integration using Google Agentspace within GCP to facilitate data analysis for AFL coaching staff.
- Implemented tabular RAG for transactional AFL data offered by ChampionData hosted on Snowflake Cloud.
- Integrated tailored AI agents and ML models using the Google Agent Development Kit (ADK) and Vertex AI.
- Delivered a presentation on prompt engineering for coaches outlining how to prompt LLMs effectively.
- Developed a one-shot data analysis workflow for the data analysts built using Claude Code subagents.

Software Engineer

July 2025 – Present

Plandid

Remote, VIC

- Developed the backend using Python, FastAPI, Pydantic, and SQLAlchemy, exposing APIs to the frontend.
- Designed a 40-table PostgreSQL schema with optimised indexes reducing query time by 40%.
- Architected a modular backend structure to ensure strict separation of concerns and scalability.
- Implemented secure Google Calendar sync with encrypted storage and CSRF protection.
- Integrated Google Places API to aggregate external reviews alongside internal user reviews.

Automation Developer

March 2025 – June 2025

Digimaker

Eastern Suburbs, VIC

- Identified a bottleneck in the student reporting process and engineered an automation to generate PDF reports.
- Wrote JavaScript code in the Google Apps Script environment for a zero-cost student reporting solution.
- Optimised script execution flow to handle high-volume batch processing within the strict execution time limits.
- Deployed a web interface allowing non-technical admins to trigger report generation and manage student data.
- Implemented CI/CD using Github Actions, utilising clasp and git for local development and version control.
- Wrote unit tests using Jest for an automated test suite that runs before deployment in production.

Programming Tutor

October 2024 – Present

Digimaker

Eastern Suburbs, VIC

- Teaching weekly Python, Java, C & JavaScript classes to primary school students across 8 different schools, achieving an average 90% in-class completion rate for my students.
- Used supplied lesson sheets to break down core coding concepts, allowing students to independently learn.
- Provided patient coding guidance to students when debugging, quickly identifying logic errors and bugs.
- Schools: Leibler Yavneh College, McKinnon PS, Ruskin Park PS, Mulgrave PS, Burwood East PS, Greythorn PS ...

## Volunteering

- AI Engineer** August 2025 - Present  
*Monash Assistive Tech Team (student team)* Clayton, VIC
- Collaborated on PhD-led research into responsible conversational AI to support individuals with disabilities.
  - Evaluated ML approaches and papers for emotional intelligence and communication pattern recognition.
  - Built an agentic AI application using Python, FastAPI, LangChain, and LangGraph.
  - Experimented with emoji similarity search using PyTorch embeddings and sentence transformers.
  - Implemented AI as a Judge evaluation patterns to benchmark model performance.
- Software Engineer (Urban Autonomy Team)** August 2025 – Present  
*Monash Connected Autonomous Vehicle (student team)* Clayton, VIC
- Final year project, a SIL simulation framework bridging the ROS 2 autonomy stack with a ride-hailing app.
  - Designed a concurrent Rust backend architecture for real-time vehicle telemetry ingestion using WebSockets.
  - Engineered ROS to HTTP bridges to translate Autoware topics into external JSON endpoints.
  - Authored the technical proposal and feasibility analysis, utilising the Spiral Model to mitigate integration risks.
  - Designing a data pipeline, utilising Apache Kafka for ingestion of vehicle route performance and emissions data.
- Project Lead** May 2024 – June 2025  
*Faculty of Information Technology Society (student society)* Clayton, VIC
- Led a team of 8 students to build projects that benefit the student community at Monash University.
  - Mentored colleagues in full-stack and project maintainance best practices for version control and pull requests.
  - Facilitated a productive and inclusive team environment, prioritising time management to fit the busy uni schedule.
  - Oversaw project timelines using Jira, defining & monitoring issues, epics, and sprint goals.
- Monash Innovation Guarantee** January 2025  
*UNICEF/Hashcode* Docklands, VIC
- Architected a secure SaaS solution for UNICEF's uSupport platform to strengthen data privacy.
  - Pitched the technical proposal to primary stakeholders, achieving a High Distinction grade.
- Computer Science YouTube Channel** July 2023 – October 2024  
*@ferdinandcoding* Online
- Produced educational videos on algorithms, data structures, and theoretical computer science.
  - Grew the channel to over 700 subscribers and accumulated a total of 500K+ views.
  - Simplified computer science topics for a broad audience via short form and long form content.

## Licenses & Certifications

<i>Australian Computer Society</i>	Associate Member
<i>Victorian Government</i>	Working with Children Check
<i>NVIDIA</i>	Developer Program Member
<i>Google</i>	Introduction to Agentspace
<i>LangChain</i>	Deep Agents with LangGraph
<i>Accenture UK</i>	Developer & Technology Job Simulation
<i>Commonwealth Bank</i>	Software Engineering Job Simulation
<i>J.P. Morgan</i>	Software Engineering Job Simulation

## Technical Skills

**Languages:** C, C++, C#, Python, Go, Rust, Java, JavaScript, TypeScript, HTML/CSS/SCSS, SQL, JSX, Kotlin.  
**Technologies:** React, React Native, Next.js, Angular, Node.js, Docker, MongoDB, PostgreSQL, Flask, FastAPI, Express.  
**Tools:** Git, NPM, UV, Yarn, Powershell, Linux, VS Code, Firebase, GCP, AWS, Akamai, Snowflake, Oracle SQL Developer, Jira.  
**Libraries:** pandas, numpy, matplotlib, sklearn, langchain, numpy, ngx-graph, RxJS, Socket.IO, JUnit, pytest, Jasmine.  
**UI Libraries:** Bootstrap, Material-UI, PrimeNG, ChakraUI, NextUI, Ant Design, Tailwind CSS, Shadcn UI.  
**Concepts:** Algorithms, Data Structures, Theoretical CS, Full-Stack Development, CI/CD, DevOps, Database Management.