

Jenul Ferdinand

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Summary

Upcoming CS Grad | 2 Years Startup & Industry Experience | High-Performance Backend Architecture |
SIL Autonomous Vehicle Systems | Engineering Team Leadership | Internal Tooling & Automation | DDD, TDD, EDA

Education

Bachelor of Computer Science at Monash University, Clayton Campus

Graduating November 2026

Projects

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 FFI bindings for Node.js and Python, with a GitHub workflow publishing to NPM, PyPi, and Crates.io.

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.
- 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.

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.
- Architected with Domain Driven Design (DDD) ensuring strict separation of concerns and scalability.
- Incorporated caching using Redis alongside vertical scaling to improve serverless performance.
- Designed a 40-table PostgreSQL schema with optimised indexes reducing query time by 40%.
- Integrated Google Places API to aggregate external reviews alongside internal user reviews.
- Implemented secure Google Calendar sync with encrypted storage and CSRF protection.

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.
- Achieved a 90% in-class completion rate for my students by consistently keeping classes engaging and fun.
- 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: McKinnon PS, Leibler Yavneh College, Ruskin Park PS, Mulgrave PS, Burwood East PS, Greythorn PS.

Extracurricular Experiences

- 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 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.
- Solutions Architect Intern January 2025
UNICEF (MIG 2025) Docklands, VIC
- Designed a secure SaaS architecture for UNICEF's uSupport platform to integrate third-party services.
 - Modeled API integration flows to enable secure data exchange between external apps and the core platform.
 - Presented the technical roadmap to stakeholders, awarded with a High Distinction for the solution's feasibility.
- 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

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|------------------------------------|-----------------------------|
| <i>Australian Computer Society</i> | Associate Member |
| <i>Victorian Government</i> | Working with Children Check |
| <i>NVIDIA</i> | Developer Program Member |

Technical Skills

- Languages:* Python, TypeScript, Rust
Technologies: Angular, Node.js, MongoDB, PostgreSQL, FastAPI
Tools: Linux, Google Cloud, AWS, npm, uv, cargo
Concepts: Algorithms, Data Structures, Full-Stack, CI/CD, EDA, Actor Model, Databases