Denzil Clarus Saldanha

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SUMMARY

Engineer with a record of solving ambiguous, customer-facing problems by partnering with technical and non-technical stakeholders to turn domain knowledge into shipped production systems. I find problems that have an impact on either the revenue or customers, work out what they need solved, get buy-in and drive the solution.

TECHNICAL SKILLS

Agentic AI and RAG - Tool calling, evals, guardrails, human-in-the-loop, pgvector, Pydantic AI, Strands, Langfuse

Data - Prefect, Pandas, NumPy, GeoPandas, PostGIS

Backend and Cloud - Python, Asyncio, FastAPI, SQLAlchemy, Pydantic, PostgreSQL, AWS (Lambda, SQS, S3), CDK, Docker, Makefile, Bash, Sentry

Frontend - React, NextJS, Typescript, Javascript

EXPERIENCE

Veresure | **Founding Engineer (Secondment)** *Brisbane, Australia | December 2025 - March 2026*

- Partnered with three non-technical founders with deep whistleblower industry expertise to translate domain knowledge into a clear technical roadmap. Facilitated requirements workshops, defined the MVP scope, adjusted scope based on new requirements and established iterative milestones to keep delivery on track.
- Designed and implemented a RAG pipeline combining LLM inference (GPT-5.4-nano) with a pgvector-backed knowledge base to deliver contextually accurate, domain-specific workplace advice - with guardrails explicitly preventing inaccurate / legal advice.
- Built a PII anonymisation layer using Presidio to strip personally identifiable information from user inputs before processing, ensuring user anonymity and compliance with privacy obligations.
- Sole engineer on a greenfield LLM-powered triage platform, owning the full product lifecycle to a complete MVP which included product, architecture, infrastructure, frontend, backend, and deployment.
- MVP was used to gather feedback from over 100 commercial vendors and used to test the validity of the product as well as agreements for sales based on the achievement of the next milestone.
- Architected a serverless event-driven backend on AWS using FastAPI, Lambda, SQS, PostgreSQL, frontend delivered using NextJS.
- Built an analytics dashboard to help stakeholders identify issues that are being talked about at the workplace.

Nuonic | **Senior Software Engineer** | *Brisbane, Australia | July 2023 – Present*
| **Software Engineer** | *July 2022 – June 2023*

- Delivered an agentic chat with tool calling that lets users query their Fuel Tax Credit reports in natural language. Chose GPT-5.4-nano for cost and latency, then built evals and guardrails to hold answers consistent with the underlying reports and compliant with ATO language. Edge cases escalate to a human. This product cut customer queries by 20% and surfaced questions users had never raised with support.
- Developed the Prism CORE module that processes **10M+ GPS** points daily using **Pandas/GeoPandas** to clean, normalise, validate data and **NumPy** to calculate GPS apportionment.
- Led the **Road User Charging Trial for the Dept. of Infrastructure & Transport**. Delivered workshops, liaised with multiple GPS providers to connect participant telematics and processed data across 1,000+ heavy vehicles into a government report that informed national RUC policy and earned a contract extension for further modelling.
- Led a Fuel Tax Credit optimisation project that delivered a 3% uplift in claim value for a key client, collaborating cross-functionally to gather requirements, model scenarios, and implement the solution.

- Built a real-time GPS data service using Async Python, WebSockets, SOAP, S3, EventBus, and DynamoDB. This currently provides live vehicle telemetry to users by simplifying access to 30+ telematics providers.
- Flagged an ATO audit risk from road-dataset drift, then designed and shipped the Detective Module which is a batch geospatial system (PostGIS) that surfaces road construction sites from GPS data. This allows the business to proactively find changes to the road dataset thereby cutting compliance risk and manual review.
- Set technical direction for the team's AI initiatives and mentored 2 engineers through code review and pairing.
- Identified the need for emissions reporting from customer conversations, scoped and presented a plan for expanding the platform capabilities to provide automated emissions reports calculated from GPS data to allow business to reduce compliance risk. This is now a working full fledged product solving commercial and regulatory problems for 300 businesses.
- Reduced a critical query from 8 minutes to under 30 seconds (16x performance gain) by diagnosing a performance bottleneck in the trips table. This involved benchmarking multiple approaches before determining that consolidating a split-table schema and introducing PostgreSQL partitioning was the optimal solution, improving both read and write performance.
- Improved Fuel Tax Credit claim accuracy by 5% through ongoing data quality and reliability work, ensuring client claims remain accurate and ATO-defensible. Diagnosed root-cause errors in the GPS pipeline which were attributed to incomplete trips that were being retained rather than overwritten on job reruns. Shipped a fix that made the claims more accurate and in some cases translated into increased client revenue.
- Built a Prefect-based data collection pipeline with robust rate-limiting, retry logic, and scheduling to ingest telematics data from multiple third-party APIs daily. Maintained integrations via REST APIs, WebSockets, SOAP, S3 uploads and abstracted heterogeneous data formats into a unified internal data model which cut provider onboarding from weeks to days.
- Designed and built a real-time milestone notifier alerting fleet operators when vehicles enter or exit designated locations using PostGIS, Shapely, and async event processing which delivered reliable geofence notifications at scale.

DataFarming | **Software Engineer** | *Toowoomba, Australia* | *February 2021 – June 2022*

- Built asynchronous order processing pipelines using Python, asyncio, and boto3, improving throughput and resilience for satellite imagery orders.
- Maintained and enhanced satellite imagery processing systems using Python, GDAL, and Rasterio on AWS (S3, EC2, Lambda, Step Functions), lowering latency where possible and ensuring high reliability for downstream agricultural analytics.
- Designed and delivered new REST APIs using FastAPI, Pydantic, SQLAlchemy, and Docker, following strict Test-Driven Development practices.
- Optimised geospatial SQL queries on PostgreSQL, achieving up to 80% improvement in API response times monitored via Sentry.io.
- Implemented distributed tracing using Sentry.io for application performance monitoring and faster resolution of production incidents.

AbilityMade | **Software Engineer** | *Sydney, Australia* | *August 2020 – March 2021*

- Developed full-stack features for an assistive technology platform working across Python backend APIs and React frontend interfaces to deliver accessible, user-centred functionality.
- Built a camera synchronization module that coordinated image capture between cameras on 12 RaspberryPis using RabbitMQ.
- Collaborated with a small cross-functional team to identify and resolve user pain points, pitching and implementing improvements that had a direct positive impact on the end-user experience.

EDUCATION

Master of Information Technology — AI and E-Commerce Systems Specialisation
University of New South Wales

Bachelor of Computer Science and Engineering
BMS College of Engineering

Diploma of Business / Leadership & Management
TAFE Queensland