

TAI TRAN

Brisbane, Australia

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PROFILE

Software engineer focused on outcomes: turning ambiguous requirements into shipped, maintainable software, owning delivery end-to-end, and balancing timelines, engineering capacity, and technical trade-offs. Primarily Python, but language-agnostic and happy to use the right tool for the job.

CORE COMPETENCIES

- **Product Delivery:** End-to-end ownership of software products, from initial concept and requirement gathering to deployment and maintenance.
- **Process Automation:** Specialised in identifying administrative bottlenecks and implementing automated workflows that reduce overhead by up to 90%.
- **Decision Support Systems:** Experience building AI-driven tools that normalise complex data into actionable insights for human decision-makers.
- **Systems Thinking:** Deep understanding of how modular design and structured data improve long-term reliability and team scalability.
- **Strategic Trade-offs:** Proven ability to balance rapid feature delivery with technical stability and project timelines.
- **Communication & Leadership:** Skilled at translating complex technical constraints into clear business options for stakeholders.

PROFESSIONAL EXPERIENCE

Lead Software Engineer (Contract) | Lewy Security (Agentic Security Hardening)

Nov 2025 - Present | Sydney, New South Wales, Australia (Remote)

Major Duties:

- **Strategic Platform Design:** Architected a modular software platform designed for rapid adaptation, allowing distinct security tools to work together seamlessly under a unified framework.
- **Context-Aware Risk Analysis:** Engineered a central analysis model that adds context to security findings, including an 'Impact Agent' that predicts the risk of system breakage before fixes are applied.
- **Targeted Risk Identification:** Developed automated workflows to discover and prioritize high-risk code areas, ensuring security reviews focus on the most critical vulnerabilities first.
- **AI-Driven Remediation:** Integrated AI agents to autonomously explore software and propose fixes, with strict controls in place to ensure accuracy and prevent errors.
- **Developer Experience:** Built a responsive, interactive toolset for developers, including a tracking system to maintain a complete audit history of all actions.

Successes:

- **Cost Efficiency:** Optimized AI operational costs by implementing smart data filtering, ensuring only relevant information was processed.
- **Rapid Scalability:** The modular design allowed new capabilities to be added as distinct features without rewriting core logic, significantly speeding up development.
- **Workflow Efficiency:** Streamlined the repair workflow, enabling developers to review and apply AI-generated fixes directly, reducing manual effort.
- **Operational Stability:** Maintained high reliability in the core system through rigorous quality checks and comprehensive testing agents.

Lead Software Engineer | Hooper Music Studio (Contract)

Nov 2025 - Jan 2026 | Brisbane, Queensland, Australia (On-site)

Major Duties:

- **Product Architecture:** Architected a modular SaaS platform using FastAPI and PostgreSQL, designing a robust data structure to ensure absolute consistency across user management, scheduling, and finance.
- **Advanced Scheduling Engine:** Engineered a smart booking system that handles recurring patterns and complex business constraints (e.g., holiday lockouts) automatically, eliminating scheduling conflicts.
- **Proprietary Financial Core:** Built a custom double-entry accounting system with automated transaction processing to ensure 100% accuracy between bank records and internal financial reporting.
- **Commerce & Automation:** Streamlined business operations by integrating digital payments with automated revenue recognition, directly linking point-of-sale events to the internal general ledger.
- **Security & Quality:** Established high-standard security boundaries and a proactive quality pipeline to catch potential errors in complex business logic before they impact operations.

Successes:

- **Digital Transformation:** Reduced administrative workload by ~90% by replacing fragmented manual processes with a unified, event-driven system for payroll and invoicing.
- **Efficient User Interface:** Delivered a fast, responsive dashboard using a lightweight architecture that minimizes maintenance while maximizing performance.
- **Rapid Business Growth:** Enabled the quick delivery of complex features (e.g., student escalation systems) in 2-week cycles while maintaining perfect stability in the financial core.

Lead Software Engineer (Contract) | Valgo Trading

Jun 2025 - Dec 2025 | Brisbane, Queensland, Australia (Hybrid)

Major Duties:

- **Systems Design:** Led the architecture of a large-scale (200k+ LOC) data analysis and decision platform, ensuring a clear separation between analytical models and core business logic for high reliability.
- **Intelligent Decision Support:** Engineered an AI decision layer using fine-tuned models, grounding automated reasoning in structured data states to eliminate errors and ensure factual accuracy.
- **High-Performance Data Visualisation:** Built a custom GPU-powered visual engine to render 10,000+ interactive data points at 160fps, bypassing standard tool limitations to enable instant user reactions.
- **Operational Efficiency:** Developed a high-throughput event management system to handle massive data ingestion, solving system-freeze issues during heavy AI processing through advanced state synchronization.
- **Data Reliability:** Integrated real-time data feeds into a unified engine used for both historical simulation and live execution, ensuring 100% validity of system simulations.

Successes:

- **Performance Leadership:** Achieved a 160fps performance benchmark for high-density data environments, eliminating user interface latency and improving decision speed.
- **Reliable Autonomy:** Delivered a stable 'Human-in-the-loop' system where every automated AI decision is transparently explained and visually supported in real-time.
- **System Stability:** Eliminated data inconsistencies and system crashes during high-volatility events by implementing robust state management and safeguards.

KEY PROJECTS

Date Range Picker - Modular Interface Component

- Developed a reusable interface component for selecting dates and ranges, designed for seamless integration into larger business applications.
- Delivered as a professionally packaged library with clear versioning, comprehensive documentation, and automated quality assurance testing.

EDUCATION

Bachelor of Information Technology - Major: Computer Science; Second Major: Computational and Simulation Science
Queensland University of Technology (QUT), Brisbane

WRITING & COMMUNICATION

- “Valgo: A Modern Decision Support System” - A detailed overview of how a complex data platform is built, from information intake to automated execution.
- “Improving AI Performance with Structured Context” - An article explaining how clear documentation and structured data help AI tools assist people more effectively.
- “Valgo Strategic Progress Report” - A report on the development milestones, design choices, and lessons learned while building a complex data application.
- Project Case Studies - Detailed reviews of past projects, analysing performance, risk management, and opportunities for future improvement.

REFERENCES

References available upon request; reference page will be provided.