

Casey Lockrey

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Summary

Advanced Computing and Commerce student with experience across Defence capability, geospatial systems, and distributed software. Strong in structured technical analysis, systems thinking, and stakeholder coordination, with a demonstrated interest in technology, intelligence support, and decision-ready technical insight.

Education

University of Sydney

Feb 2022 – Nov 2027 (Expected)

Bachelor of Advanced Computing (Honours) and Commerce

Majoring in Finance and Computer Science

Weighted Average Mark (WAM): 75

- High Distinctions in Introduction to Programming (87), Computing Professionalism (90), and OS and Network Platforms (85); Distinctions in Distributed Systems and Finance in Practice (82 each).
- School of Computer Science Undergraduate High Honour Roll (2023) and Beta Gamma Sigma Honour Society (2024).

Experience

Department of Defence — Defence Intelligence Group (DIG)

May 2025 – Present

Intelligence Capability Division (ICD) STEM Cadet

Intelligence Capability Portfolio Support (ICPS) Team

Jun 2026 – Present

- Consolidated project Additional Estimates submissions across commitments, budget phasings, and FE1–FE3 forecast rounds; analysed historical budget performance to validate funding requirements and prepare portfolio-level financial reporting for the Director-General.
- Support portfolio-level governance and coordination across Defence intelligence capability projects, consolidating schedule, risk, performance, and technical inputs for reporting and senior decision-making.
- Assist with governance packs, briefs, action registers, and meeting materials for program boards and steering groups, tracking decisions and follow-up activities.
- Coordinate with project teams and central Defence stakeholders to validate project information, address data-quality gaps, and maintain alignment with capability milestones and ODCS requirements.

Geospatial Collection Systems (GCS) Team

May 2025 – Apr 2026

- Supported sponsor-side scoping and prioritisation for a GEOINT capability, aligning user needs with One Defence Capability System (ODCS) objectives and IOC outcomes while coordinating across delivery, user, and T&E stakeholders.
- Compiled readiness evidence and traceability artefacts to support IOC/FOC assessment, transition planning, and governance engagements.
- Consolidated actions, risks, technical inputs, and integration dependencies to support HQJOC consultation, senior decision-making, and coherent delivery across adjacent projects.
- Produced open-source strategic foresight on emerging GEOINT and defence-technology trends, translating findings into implications for planning and requirements.

Elafent

Feb 2024 – Jul 2024

Product Assistant & Junior Software Engineer (Geospatial)

- Configured the Elafent Cloud Platform (ECP) for Snowy Valleys and Mildura tourism councils, integrating booking, mobility, and points-of-interest data via REST/JSON, Postman, Node.js lambdas, and the platform's CQL interface to support live spatial correlation.
- Developed interactive dashboards combining geospatial analytics, mobility data, and points of interest to support place-based insights for council stakeholders.
- Delivered a reusable TypeScript widget for “within / intersects / contained-by” spatial queries and contributed 12 merged pull requests.

Skills

- **Languages:** Python, TypeScript, JavaScript, Java, C, C++.
- **Frameworks/Data:** React, Next.js, Node.js, FastAPI, REST/JSON, PostgreSQL, SQLite.
- **Systems/Tools:** Distributed systems, network protocols, algorithms, geospatial analysis, Git, Postman, Jira, and testing.
- **Defence/Professional:** Requirements analysis, capability governance, T&E support, risk/performance reporting, stakeholder coordination, technical briefing, and strategic foresight.

Awards and Leadership

- 1st Place, 2024 Humanitarian Innovation Hackathon (\$5,000): Co-designed a contamination-sensing tap-nozzle concept with mobile reporting, geospatial mapping, and response triage for Pacific Island communities.
- ADF Future Innovators Award; Science Extension Prize and first in course; Mathematics Prefect (2021–2022); coordinated external stalls and performances for the TIGS Great Fete.

Selected Technical Projects

DotPoint – HSC Chemistry assessment platform

Next.js, TypeScript, FastAPI, PostgreSQL, Auth.js

- Designed and built a full-stack platform enabling authenticated teachers to select syllabus outcomes, generate structured question–solution–rubric packages, inspect provenance and validation findings, record approval decisions, and export Markdown or LaTeX.
- Separated the Next.js/PostgreSQL review application from a FastAPI/Pydantic chemistry engine; implemented deterministic equilibrium, solubility and quantitative checks, originality screening, auditable generation traces and more than 500 automated Python and web tests so unresolved chemistry errors block teacher review.

Distributed routing and transaction systems

Python, UDP/TCP, concurrency, Dijkstra, PyNaCl

- Implemented a four-thread UDP routing simulator that exchanged topology state, recomputed least-cost paths with Dijkstra's algorithm, and handled live cost changes, failure/recovery, graph queries and batch commands; added regression tests for topology edge cases and earned 118/120.
- Separately built a concurrent TCP transaction-node system using length-prefixed JSON, Ed25519 signature verification, nonce-based replay protection, SHA-256-linked blocks, reconnecting peer links and consensus rounds, demonstrating secure message validation and replicated-state coordination.

Heart-failure survival classification

Python, Weka, machine learning

- Implemented KNN and decision trees from scratch, then designed class-balanced weighted-voting and gain-ratio extensions; compared four local and ten Weka models using stratified 10-fold cross-validation on 273 imbalanced patient records.
- Increased recall for patients who died from 36.7% to 65.6% and reduced false negatives from 57 to 31, while explicitly reporting the accompanying fall in accuracy and specificity; earned 20/20 across the code components and 12.8/14 for the report.

Finance and Strategy Projects

Source-audited equity valuation

Python, Excel, LaTeX, DCF, reverse DCF

- Built a reproducible Sigma Healthcare workflow that transformed structured, source-linked inputs through Python into an Excel valuation model and LaTeX sell-side report, combining DCF, relative valuation and economic profit while testing integration synergies and working-capital conversion.
- Independently developed a driver-based Pop Mart three-statement DCF linking regional and channel growth to margins, inventory, leases and capital expenditure; valued the shares at HK\$244.5 versus a HK\$180.1 academic benchmark under an 8.0% WACC and 2.5% terminal-growth case, then stress-tested the result through scenarios, sensitivities and reverse DCF.

Factor investing and corporate strategy

Fama–MacBeth, portfolio analytics, acquisition analysis

- Co-developed a profitability-factor strategy using five blocks of time-varying betas and 180 Fama–MacBeth cross-sectional regressions across six factors and 30 US industries; selected RMW using positive-premium, statistical and economic criteria, then built a 50/50 market overlay that returned 29.2% annualised versus 27.3% for the market in the stated 2019–2021 academic back-test.
- Contributed to a ResMed–Healwell AI acquisition recommendation covering strategic fit, balance-sheet funding, valuation context, privacy and integration risk; proposed a 100-day plan for systems, talent, product deployment and data governance within a Finance in Practice project that earned 86.2% and High Distinction-bracket feedback.

Derivatives trading strategy

CME simulator, options, futures, risk analysis

- Co-designed a two-stage CME strategy using ten WTI calls for capped-risk exposure to a geopolitical oil shock, then three long-Brent/short-WTI futures pairs to express relative value; reconciled every simulator fill to a US\$49,010 net profit on US\$100,000 starting equity.
- Decomposed the simulated result into a US\$55,100 option gain and US\$6,090 spread loss, identifying basis risk, qualitative exit rules and non-simultaneous leg closure as the principal weaknesses; converted the review into quantitative spread targets, stops and legging controls and earned 18.6/20.

Financial monitoring and digital money policy

Policy research and briefing

- Researched and authored a public-facing policy report explaining Australian customer monitoring, threshold, suspicious-matter and international-transfer reporting; translated regulatory evidence into recommendations on proportionate AML/CTF oversight, essential cash access, outage resilience, data minimisation and retail-CBDC privacy, earning 89% for the report and 90% for the presentation.
- Separately authored a 90% research note analysing Pegasus as both a zero-click intelligence-collection capability and an outsourcing-governance problem; synthesised forensic evidence, a Jordan civil-society case study and human-rights standards into recommendations for ex-ante authorisation, vendor liability and independent oversight.

ResMed capital-structure recommendation

Corporate finance and briefing

- Analysed approximately US\$1.75bn of FY2025 operating cash flow, US\$0.54bn of net cash, -0.29x net debt/EBITDA and five-company medtech benchmarks to recommend a conservative through-cycle funding policy with capacity for value-accretive investment.
- Set decision-ready guardrails of roughly 1.0–1.5x maximum acquisition leverage, at least US\$1bn liquidity, 12–15x interest coverage and 70–85% fixed-rate debt, with buyback and capital-expenditure gates for a GLP-1 downside scenario; completed as an individual board-style brief.