

HARVEY J. HOULAHAN

Manhattan, New York NY

+1

harveyhoulahan@outlook.com

LinkedIn: [@harveyhoulahan](https://www.linkedin.com/in/harveyhoulahan)

Australian engineer raised in renowned cotton farming belt, now building world-first traceability tech that global brands rely on. Firsthand experience in the cotton industry directly informs my work at FibreTrace, where we develop luminescent-pigment product-passport technology used by companies like Target and Cargill to trace cotton across the supply chain. By combining real-time provenance with AI-driven predictive analytics, we help partners anticipate supply-chain bottlenecks and ensure transparent, sustainable production at scale. I currently also engineer casually for an Apple recognized consultancy, Friday Technologies. As a team, we innovate in iOS, VisionOS and MacOS applications. The amalgamation of farming experience and academic pursuit of computer engineering lets me bridge industry and tech to deliver transparent, sustainable solutions.

ACADEMIC FIELDS

Bachelor of Medicine, Bachelor of Surgery (MBBS)

James Cook University, Townsville

Direct Admittance 2022

- (Deferred after 6 months)

B.S. in Advanced Computer Science

Monash University, Melbourne

Expected Graduation, Nov 2025

- **Concentrations:** Artificial Intelligence/Machine Learning, Advanced Algorithms and Data Structures
- **GPA:** 3.6/4.00, *current High Distinction*
- **Related Coursework:** Data Structures & Algorithms, Neural Networks & Deep Learning, Computer Architecture, Data Science, Machine Learning, Artificial Intelligence, Object-Oriented Programming, Statistics & Applications

EXPERIENCE

Friday Technologies (Recognized Apple Consultancy)

Albert Park, Melbourne

AI/Backend Engineer (Contract/On-Site/Hybrid)

March 2025 –

Current

- Led innovation initiatives recognized by Apple, leveraging Core ML, visionOS, and generative models to create cutting-edge prototypes and spatial-computing demos.
- Architected a cloud-native healthcare platform, designed scalable back-end systems, and ML infrastructure to support real-time diagnostics and remote monitoring.
- Built and optimized data pipelines and APIs, powering intelligent production applications across industries, boosting throughput and reliability.

Step One Clothing Limited

Barangaroo, Sydney

Software Engineer/Web Developer (Contract/Hybrid)

August 2025 – Current

- Engineered an AI-powered search system that matches natural-language queries to product attributes, boosting discoverability and sales.
- Orchestrated an accessible navigation system with analytics and editorial feedback, reducing change lead time and errors.
- Built a premium Shopify mega-menu and CMS components with Liquid, enabling merchandising teams to edit content autonomously.

FibreTrace IOS App

Moree, NSW

iOS Engineer In development

October 2024 - Current

- Conceived and pitched a native SwiftUI product-passport app for FibreTrace's world-first fibre-level verification tech. This product was designed in challenging existing consumerism, manufacturing, and transparency for a greener, circular economy.
- Built the app end-to-end: QR/NFC scan, signed deep link of the journey, Story & Impact, offline-first caching, haptics, and App Clip entry. Also features role-based UI (Consumer vs Brand), certificates and a clean API contract ready for shipping.
- Shipped on-device trust and AI: local JWT/HMAC checks flagging any spoofed tags. Has anomaly detection on chain-of-custody, ETA predictions, and a glossary copilot. This resulted in a demo and 60-sec pitch that secured CEO investment and a partner-brand pilot integrated with the FibreTrace platform.

Australian Energy Market Operator (AEMO)**Melbourne***Software Engineer Intern Casual*

2024

CBD,*Oct 2023, Aug*

- Built Python analytics over large NEM/MMS datasets (dispatch, PASA) with real-time dashboards for demand/renewables insights used by ops.
- Engineered high-throughput C parsers for market/telemetry files (efficient binary ingest, streaming, mmap-based I/O), with Python bindings to feed ETL thus reducing ingest/computation by 35%.
- Delivered C# micro-services to interface with AEMO's MMS schemas/APIs and upstream SQL stores accelerating daily reporting and reliability tooling for ST/MT PASA workflows.

Townsville Grammar School**Australia***Residential Tutor/Coach*

2022

Townsville,*Jan 2022 – Dec*

- Held responsibility for the care and supervision of boys from Year 7 to 12, ensuring a safe and supportive residential environment.
- Coordinated a comprehensive range of academic and extracurricular activities—including tutoring sessions, group study, and one-on-one mentoring—to support student success.
- Actively coached sports teams, including rugby and swimming, promoting teamwork, discipline, and a healthy lifestyle.
- Collaborated with educational staff to develop and implement programs that balanced academic rigor with personal development and well-being.

PROJECTS**Modaics****Melbourne, Australia**

- Reinvented Depop showcasing emerging brands to challenge fast fashion front; this involved hosting workshops, classes, pop-ups through a social media driven experience which in turn curated a community across Sydney, Melbourne and Brisbane.
- Currently in IOS development of App in partnership with Royal Melbourne Institute of Technology Accelerator Program.

AgriIQ (WIP)**Moree, Australia**

- Prototyping a world-first smart ear-tag capable of predicting pregnancies within 7 days (94% accuracy), generating continuous health indices, and supporting selective-breeding insights across multispecies herds.
- Designed to automate livestock operations and manage pressure points under high-demand production.

ACTIVITIES AND LEADERSHIP**Monash University****Melbourne, Australia***Teaching Assistant for FIT2014 (Algorithms and Data Structures)**Aug 2024 – Nov 2024***University College, University of Melbourne****Melbourne, Australia***Social Executive**Aug 2023 – Dec*

2023

- Voted executive of 300+ member college hosted social events, promote alumni and work with UMELB board of execs.

The Southport School**Southport, Gold Coast****Coast***Foundation Prefect, Senior Dux of Boarding, Cohort 2021 Proxime Accessit Dux**December 2021***SKILLS**

Programming: Swift/SwiftUI, Java, Python, JavaScript, TypeScript, HTML/CSS, SQL, Node.js, React.js, MATLAB, C++, C, Rust, Adobe Software, Cloud Technologies etc.

Cloud & Data: AWS, ETL/ELT pipelines, data modeling, Snowflake-style workflows, API design, Git Source Control,

Tools: XCode, CoreML, VSCode, PyCharm, Eclipse, Jupyter, Bootstrap, Spring Boot, Agile, LM Studio

Other: Adobe Creative Suite, human-centered design, cross-functional collaboration