

Harvey J. Houlahan

Portfolio: hjhportfolio.com

Email: harveyhoulahan@outlook.com

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

+61 408 839 119

Software engineer and geospatial ML researcher based in Byron Bay, working full-time at ArborMeta on ecological infrastructure for Australian carbon credit policy, and contracting independently for e-commerce and software clients on a retained basis. Advanced Computer Science graduate from Monash University (AI/ML/Algorithms concentration, High Distinction GPA). Currently building sovereign geospatial data infrastructure at ArborMeta consulting the Australian government on carbon credit policy.

EDUCATION

The Southport School

Southport, Australia

Secondary School QCE

2016 - 2021

- o **ATAR:** 99.4 / OP1
- o **Recognition:** Cohort 2021 Senior Dux of Boarding, Proxime Accessit Dux
- o **International Exchange:** Appleby College, Canada — Mathematics & Pure Physics (2019)

James Cook University

Townsville, Australia

M.B.B.S. in Bachelor of Medicine, Bachelor of Surgery

(Deferred after 6 months)

- o **Direct Admittance 2022**

Monash University

Melbourne, Australia

B.S. in Advanced Computer Science

Feb 2023 - Nov 2025

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

EXPERIENCE

ArborMeta

Byron Bay, NSW

Machine Learning Engineer

Feb 2026 – Current

- Architected and designed geospatial web applications using React, MapLibre GL JS, and PostgreSQL to visualise ecological survey and carbon farming data across Australia, informing land management and carbon credit quantification.
- Conducted primary research into carbon sequestration measurement and verification methodologies, producing analytical outputs that consult federal and state government bodies on accreditation pathways for Australian carbon credits; this research presents a pathway into doctoral research in computational ecology and carbon science.
- Engineered high-performance spatial data pipelines including multi-LOD PMTiles generation, Fulcrum field survey parsing, and ecological transect analysis.

Step One Clothing Limited

Barangaroo, Sydney

Software Engineer/Web Developer (Contract/Hybrid)

August 2025 – Current

- Developed an AI-powered search that employs natural-language matching from user descriptions to product attributes; this massively scaled discoverability and user purchase intent.
- Engaged on a monthly retainer as the primary front-end contractor; responsible for ongoing feature development, platform maintenance, and e-commerce engineering across the Shopify stack.
- Engineered the premium Shopify mega-menu experience end-to-end using schema driven controls and liquid with shopify enhancing usability for merchandising team to edit live content

FibreTrace Mobile Passport IOS App

Moree, NSW

iOS Engineer

March 2025 – Dec 2025

- 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 with <3s time-to-passport; role-based UI (Consumer vs Brand), certificates + PDF export, and a clean API contract ready for shipping.

- Shipped on-device with AI: local JWT/HMAC checks (Keychain/App Attest) to flag spoofed tags; anomaly detection on chain-of-custody, ETA predictions, and a glossary copilot. This culminated in a TestFlight demo and 60-sec pitch that secured CEO buy-in and a partner-brand pilot integrated with the FibreTrace platform.

Friday Technologies - Apple Consultancy

South Melbourne, Melbourne

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

May 2025 – Jan 2026

- Designed and deployed scalable backend systems and machine learning infrastructure to enhance application performance.
- Integrated APIs and developed data pipelines for intelligent, production-grade applications, improving operational efficiency.
- Contributed to innovative projects recognized by Apple, leveraging Core ML and visionOS technologies.

Australian Energy Market Operator (AEMO)

CBD, Melbourne

Software Engineer Intern Casual

- Built Python analytics over large NEM/MMS datasets (dispatch, settlements, PASA) with real-time dashboards for demand/renewables insights used by ops.
- Engineered high-throughput C parsers for market/telemetry files (efficient CSV/binary ingest, streaming validation, mmap-based I/O), with Python bindings to feed ETL reducing ingest time and computation.
- 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.

Shade Files

Prahran, Melbourne

Sales Associate

Jan 2024 – June 2024

- Provided styling advice and curated shopping experiences to enhance customer satisfaction, ensuring alignment with business KPIs to maintain sales performance and customer engagement
- Liaised with suppliers to assess product quality, negotiate pricing, and ensure a curated inventory that aligned with customer demand and brand standards
- Provided hands-on leadership, mentoring new team members and fostering a positive work environment that promoted teamwork and professional growth.

Burleigh Pavilion

Burleigh Heads, Gold Coast

Bar Attendant/All-rounder

Jan 2023 – Dec 2023

- Thrived in a high-volume, tourist-focused bar, consistently delivering quality service under pressure and during peak hours.
- Played a key role in maintaining a lively, engaging atmosphere that enhanced the guest experience in a busy, high-demand setting.
- Supported operational efficiency by assisting with beverage preparation, managing inventory, and adapting quickly to changing service demands.

Townsville Grammar School

Townsville, Australia

Residential Tutor/Coach

Jan 2022 – Dec 2022

- 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

Founder

Jan 2025 – July 2025

- Developed websites for upcoming fashion brands around Australia, including mailing lists, competitive showcasing of product services tailored to the clients needs and styling of clothing for website design
- Currently in IOS development of App in partnership with RMIT Pre-Accelerator Program

Dolus Technologies

Melbourne, Australia

SEO & Marketing

Feb 2024 - Oct 2024

- Designed and developed websites for emerging fashion brands, focusing on creative aesthetics, digital marketing, and effective product showcasing.

ACTIVITIES AND LEADERSHIP

Monash University <i>Teaching Assistant for FIT2014 (Algorithms and Data Structures)</i>	Melbourne, Australia <i>Aug 2024 – Nov 2024</i>
University College, University of Melbourne <i>Social Executive</i> • Voted executive of 300+ member college, hosting social events, managing a board of executives, and reaching out to the associated Alumni to host information sessions	Melbourne, Australia <i>Aug 2023 – Dec 2023</i>
Townsville Grammar School <i>Swimming & Rugby Union Coach</i> • Facilitated structured training sessions, developed student-athletes' skills and sportsmanship, and provided motivational mentorship to enhance team performance and individual growth.	Townsville, Australia <i>Jan 2022 - June 2022</i>
The Southport School <i>Senior Dux of Boarding, Cohort 2021 Proxime Accessit Dux</i>	Southport, Gold Coast <i>December 2021</i>

SKILLS

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

Tools: Android Studio, IntelliJ, PyCharm, Eclipse, AWS, Jupyter Notebooks, Git, Bootstrap, Spring Boot, Agile