

Punjaya Wickramasinghe

Mechatronics Engineer

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pwick15.github.io/portfolio-website

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ACT, AUSTRALIA

WORK EXPERIENCE



Full Stack AI Software Engineer

Phoenix ICT Solutions | 2025–

LangChain | Ollama | Django | FastAPI | Docker | Flutter | Node.js

- Engineered and deployed a Retrieval-Augmented Generation (RAG) application (LangChain, Django, FastAPI, Azure).
- Built robust frontend interface from initial wireframes to polished interactive design (Figma).
- Implemented RAG optimisation strategy which improved accuracy by 30% on average (LangSmith, OpenEvals).
- Conducted thorough refactoring, unit testing, and UX improvements, ensuring stability, scalability, and maintainability.



Engineering Fellow

Engineering for Change & Resham Sutra | 2025–

React Native | Figma | PHP | Python

- Building AI voice features to improve UX for low-literacy users on India's top textile marketplace (React Native, PHP).
- Applying human-centered design to create intuitive UX to overcoming language and literacy barriers (Figma).
- Ensuring scalability of AI voice solutions to regional languages (Hindi, Marathi) to boost reach and engagement.
- Optimizing performance for resource-limited environments



Mechatronics Engineer

Geodrones Australia | 2024 – 2025

C++ | ROS | Gazebo | Docker | Altium | STM32 | PyTorch

- Finalist, Australian AI Awards 2024.
- Deployed real-time drone-based AI system (C++, Python, PyTorch) integrating camera/LiDAR for live change detection.
- Developed secure Docker-based software enabling real-time task swapping, significantly enhancing drone operational flexibility.
- Adapted open-source GPS-denied UAV state estimator (ROS/Gazebo) for proprietary drones.
- Designed PCBs (Altium) & battery management system (STM32).
- Pitched demo to industry VIPs at October Sky 2024.

EDUCATION

Bachelor of Engineering (Research & Development)

ANU | 2019 – 2023

- Mechatronics & Comp Science
- GPA: 6.72 / 7
- First Class Honours
- Excellence Scholarship (2019)
- CECC Dickins Scholarship (2023)

ATAR: 99.20 (≈ IB Score: 44/45)

Narrabundah College | 2018 – 2019

EXTRA CURRICULAR

Head of Social

ANU Engineers Assoc. | 2020 – 2021

- ANU's 3rd largest student body
- Led a team of 3 to run 5 social events, generating ~\$2,000 in sales, exceeding previous year's sales

Community Volunteer

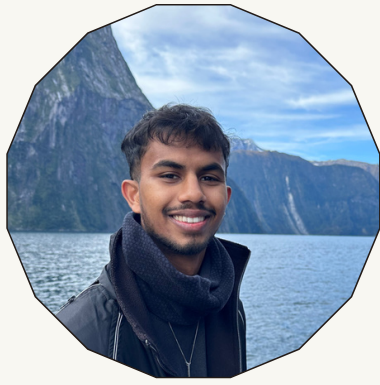
Aus Sri Lankan Buddhist Assoc. | 2010–

- MC at cultural events
- Regular volunteer to assist with community events (logistics, photographer)

National Premier League Football

Player, 2013–

- Played highest level in Canberra until 2020
- Runners-up in 2019 (U18 NPL1) and semi-finalists in 2021 (U23 NPL2).
- Consistently trained while managing a balanced lifestyle.



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OTHER EXPERIENCE

BixeLab

Biometric Testing Analyst |
2021 - 2023

- World's second NIST/FIDO accredited biometric testing lab
- Data analysis curating client reports
- Small team of 15 - demanded adaptability and learning agility
- Automated processes and uplifted secure data handling protocol

Private Tutor

2019 - Present

- Tutoring 4 students (55 since 2019), aged 8-18, with diverse backgrounds.
- Improved student grades from C/B to A average.
- Simplified complex concepts for easy understanding.
- Taught time management and self-sufficiency skills.
- Focus on instilling lasting subject curiosity in students

RESEARCH EXPERIENCE

Novel Inertial Navigation System for Improved UAV State Estimation

ANU Research & Development Student | 2023 – 2024

- Co-authored paper in European Journal of Control – “Constructive synchronous observer design for inertial navigation with delayed GNSS measurements”.
- Achieved 86/100 on thesis and seminar.
- Advanced linear algebra to execute the implementation of a novel INS filter (ArduPilot, Python).
- Fused sensor measurements (magnetometer, barometer, GPS velocity) to further enhance performance.
- Results of my initial implementation were presented at the ArduPilot 2023 Conference.

Acoustic Emotion Recognition with Machine Learning

ANU Research & Development Student | 2021

- Investigated spatial audio features for enhancing acoustic emotion recognition with ML (Python, MATLAB).
- Achieved 91/100 on thesis and seminar.
- Applied knowledge in spatial audio and HRTF concepts.
- Seaborn data visualisation and ML algorithm adaptation.
- sklearn for traditional ML and TensorFlow for deep learning.

Selectivity of Acetone Breath Sensor

ANU Research & Development Student | 2020

- Achieved 88/100 on thesis and seminar.
- Meta-analysis to find areas to improve acetone breath sensors.
- Refined information extraction, interpretation and synthesis skills.



REFERENCES

Darcy Slevin

Geodrones Australia / Software Lead

Supervisor at Geodrones Australia

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Dr. Marcus Chacos

Provolution Health / CEO

Soccer coach – known me for 10+ years

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