



Punjaya Wickramasinghe

Mechatronics Engineer

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ACT, AUSTRALIA

WORK EXPERIENCE



Full Stack Software Engineer

Phoenix ICT Solutions | 2025–

LangChain | Ollama | FastAPI | Docker | Django | Azure | Flutter

- Engineering an AI application, leveraging LLMs to implement RAG (LangChain, FastAPI, Flutter, 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

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

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

RESEARCH EXPERIENCE



Novel INS System for Improved UAV State Estimation

ANU R&D Student | 2023

Lie Theory | Python | LaTeX

- 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 R&D Student | 2021

sklearn | TensorFlow | Seaborn | GridSearchCV | librosa

- 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 (librosa)
- Data visualisation and ML algorithm adaptation (Seaborn)
- Implemented KNN, MLP and CNN (sklearn, TensorFlow)



Metal-Organic Frameworks for Acetone Breath Sensors

ANU R&D Student | 2020

- Achieved 88/100 on thesis and seminar
- Meta-analysis to find areas to improve acetone breath sensors

OTHER EXPERIENCE



BixeLab

Testing Analyst | 2021 – 2023

- Data analysis on biometric tests to curate client reports
- Automated processes and handled risk management
- World's second NIST/FIDO accredited biometric testing lab
- Small team of 15 - demanded adaptability and learning agility



Private Tutor

Math & Physics | 2019–

- Tutored 55 students since 2019, Yr 3 to 12, 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



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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