George Townsend

Newcastle, Australia | george@georgetownsend.com | georgetownsend.com | github.com/GeorgeTownsendd

> Geospatial professional with expertise in GNSS technology, spatial data processing, and Python development across industry and academia. Passionate about the intersection of geography, measurement, and technology.

Education

University of Newcastle, Bachelor of Surveying (Honours)	*Jan 2021 – Jul 2025*

Work Experience

Research Assistant, University of Newcastle – Callaghan, NSW — *Dec 2024 – Present*

- Designed and constructed a solar powered Raspberry Pi based GNSS receiver
- Developed experiments to collect GNSS interferometric reflectometry data from multiple antenna configuration
- Processed raw GNSS receiver data into publication quality sea level and soil moisture timeseries

Spatial Data Controller, Anditi – Newcastle, NSW — *Dec 2021 – Dec 2024*

- Created and maintained Python scripts for data management and geospatial workflows
- Performed manual QA/QC of automated ground classification for aerial and mobile LiDAR datasets
- Curated feature class training samples (structures, vehicles, etc.) used for improving machine learning models

Software Projects

Sea Sentry — *devpost.com/software/sea-sentry*

- Machine learning system to identify oil spills from multi-spectral satellite imagery
- Created with a team of five in 24 hours at Edinburgh University for the hackathon "HackTheBurgh"

PavilionPy — *github.com/GeorgeTownsendd/PavilionPy*

- A collection of archival, analysis, and visualisation tools to assist in an online cricket management game
- Primarily used to reverse engineer game mechanics and predict profits from player sales on the transfer market

gnssrefl — *github.com/kristinemlarson/gnssrefl*

- Open source Python package by Kristine Larson for GNSS interfermetric reflectometry research
- Contributed bugfixes and quality assurance for workflows involving L1 signals

Scholarships

CESE Summer Research Scholarship — *Dec 2022 - Feb 2023*

- Advised by Associate Professor Duy Ngo (Electrical Engineering) on the topic "*Machine Learning Techniques for Interference Detection and Anomaly Identification in GNSS Signals*"
- Focused on real-time processing of raw GNSS signals using software defined radio in Linux

Additional Experience

Volunteer at Woodford Folk Festival: Assisted at three New Years events for 7 days each; twice as technical support for payment systems and once as sound level compliance monitor

Volunteer at State Surveying Conference: Assisted in the day to day running of the 2023 conference

Study Abroad (High School): Groningen, The Netherlands; Jan 2018 - Aug 2018

Study Abroad (University): Newcastle Upon Tyne, United Kingdom; Sep 2023 - Jun 2024