



Yarran Doherty

Project Engineer | Water Engineering

Yarran is a Project Engineer at the Water Research Laboratory. He completed a double degree in Civil and Environmental Engineering at UNSW with a focus on water engineering including hydraulics and coastal engineering. As part of his studies, Yarran completed an Honours thesis developing a python-based shoreline extraction tool for remote monitoring of coastal erosion utilising satellite imagery.

Yarran has diverse experience across a wide range of disciplines including coastal and maritime engineering, sediment transport, flood mitigation, hydraulic network modelling, environmental monitoring and geotechnical investigations. He has experience in field data collection and remote sensing with a strong background in data visualisation and automation to address complex environmental challenges.

Qualifications

BE Hons 1 (Civil Engineering), UNSW, 2020
BEngSci (Environmental Engineering), UNSW, 2020

Professional history

Sep 2021 – Current: Project Engineer, UNSW WRL
Feb 2021 – Sep 2022: Graduate Water Engineer, AECOM
Sep 2020 – Feb 2021: Graduate Research Assistant, UNSW WRL
Nov 2019 – Jun 2020: Undergraduate Coastal Engineer, Royal HaskoningDHV
Jun 2018 – Sep 2018: Undergraduate Environmental Engineer, RCA Australia

Awards

2020: Maxar Spatial Regional Challenge (First Place)
2020: Engineers Australia NCWE Student Scholarship
2019: Engineers Australia D.N. Foster Memorial Fellowship Award
2018: UNSW Exchange Academic Achievement Award

Expertise

- Estuarine water quality modelling
- Beach geomorphology and coastal stabilisation
- Environmental data collection
- Remote sensing
- Hydraulic network modelling
- Data analysis and visualisation
- Flood mitigation
- Coastal structure condition assessments

Summary of relevant experience

Water Quality

2022: Assessment of Sewage Overflow Impacts on Oyster Harvest Areas in NSW Estuaries, NSW

Flood Modelling

2022: Canberra Light Rail Stage 2a, ACT

2022: Bankstown Airport Maser Plan, NSW

2022: Knapsack Gulley Viaduct Remediation, NSW

2022: Yule River Sand Mine Feasibility Study, WA

Coastal Processes

2022: Merimbula Entrance Remote Sensing Study, NSW

2020: Geraldton Coastal Process Study, WA

2020: Coromandel Coastal Hazard Risk Assessment, NZ

2020: Surfers Paradise Coastal Walkway Probabilistic Hazard Assessment, QLD

2020: Woolli Beach Sand Management Strategy, NSW

2019: HMAS Cerberus Channel Dredging, VIC

2019: Warilla Beach Coastal Management Cost-Benefit Analysis, NSW

Hydraulic Network Modelling

2022: Sydney Water Growth Servicing Investment Plan, NSW

2022: Central Coast Council Available Fire Flow Assessment, NSW

2021: Coalfields and West Lake Macquarie Water Supply Servicing Strategy, NSW

2021: Griffith Potable Water System Modelling Study, NSW

Condition Assessment

2021: Finocane Island Berth C & D Condition Assessment, WA

2019: Taylors Point Baths Jetty Condition Assessment, NSW

2019: Picnic Point Boat Ramp Upgrade, NSW

Computing Skills

GIS: QGIS, ArcGIS, ArcMap

Programming: Python, MATLAB, Excel

Numerical Modelling: RMA, TUFLOW, HEC-RAS, InfoWorks WS Pro, MIKE Mouse

Publications

Doherty Y., Harley M.D., Splinter K.D., Vos K. (2022). *A Python Toolkit to Monitor Sandy Shoreline Change Using High-Resolution PlanetScope Cubesats*. Environmental Modelling & Software.

Doherty, Y., Splinter K.D., Harley M.D., Vos K. (2021). *The Application of High-Resolution PlanetScope Dove Satellite Imagery for Near-daily Shoreline Monitoring*, Coasts & Ports 2021

Doherty, Y. (2020) *Evaluation of PlanetScope Dove Satellite imagery for High-Resolution, Near-Daily Shoreline Monitoring*, Honours Thesis, UNSW.

Conference Presentations

2022: *Australasian Coasts and Ports*

2021: *Australasian Young Coastal Scientists & Engineers*