

Position Title:	Research Fellow – ET Data Science
Position Classification:	Level B
Position Number:	319581
School:	Physics, Mathematics and Computing
Supervisor Title:	Senior Lecturer
Supervisor Position Number:	308124

Your work area

This position is for a Research Fellow within the ARC Industrial Transformation Research Hub for Transforming energy Infrastructure through Digital Engineering (TIDE ITRH), based at the Indian Ocean Marine Research Centre (IOMRC) at UWA.

The TIDE ITRH comprises four interlinked research themes, which work together to deliver a range critical challenges associated with using state of the art data science techniques and engineering to transform the operation of energy infrastructure. The research programs involve a blend of physical and numerical modelling supported by fieldwork and analysis of key observations from existing facilities. Our industry partners are helping to shape of the research direction, provide the underlying data sets needed for the work, drive technology transfer, and assist with the mentorship of the researchers and students.

You will work across both the Oceans Graduate School at the IOMRC, and the Department of Mathematics and Statistics within the School of Physics, Mathematics and Computing at UWA. The OGS is home to a critical mass of researchers spanning ocean engineering, oceanography, and the marine sciences, hosts a number of high profile multidisciplinary research programmes, and focuses on conducting world-leading research to provide ocean solutions in relation to the marine environment and resources, engineering and technology. The Department of Mathematics and Statistics is home to multi- and cross-disciplinary researchers who are developing new data analytic methods that reside at the interface of statistical and mathematical modelling, motivated by applications in the engineering and physical sciences.

Your role

To work with the Chief Investigators, Partner Investigators and industry partners to undertake standalone statistical research within the Enabling Theme 1 (Data Science) of the TIDE ITRH, and to support the integration of data science across each of the Applied Research Themes. Researchers in the Enabling Theme have expertise across statistics, machine learning and applied mathematics, and will work closely with investigators based at the University of Western Australia, the University of Wollongong, Lancaster University (UK) and the University of Cambridge (UK).

The position advertised is a 4 year post-doctoral role. The successful candidate will develop Bayesian statistical and machine learning methodology that addresses at least one of three fundamental challenges to TIDE: (1) sequential decision making and optimal design to augment targeted and efficient data acquisition; (2) data driven spatio-temporal inference/prediction of complex ocean dynamic processes; (3) quantification and reduction of uncertainty of physical models. These research directions will be guided by the most pressing questions arising from each of the Applied Research Themes.

Key responsibilities

Collaborate and engage with the TIDE ITRH industry partners and the wider oil and gas industry at a local, national and international level.

Work collaboratively with TIDE ITRH researchers and students in oceanography, hydrodynamics and geotechnics.

Promote research projects via publication of research papers and presentations at international conferences and workshops.

Support the transfer of TIDE ITRH research into practice, through collaboration with the TIDE ITRH industry partners.

Supervise and assist in the training of undergraduate, masters, and PhD students.

Assist in establishing the computing systems to support the storage, quality control and analysis of datasets from an extensive array of historic and real-time data streams.

Participate in the TIDE ITRH activities and contribute to/organize group projects, workshops and other processes.

Your specific work capabilities (selection criteria)

A PhD specialising in Bayesian inference and uncertainty quantification, or a closely related field.

Demonstrated experience for working in interdisciplinary teams. Prior collaborative research with experts in the following disciplines will be considered an asset: meteorology, oceanography, hydrodynamics and geotechnics.

Willingness to interact and/or work with the offshore engineering industry.

Strong track record in publishing manuscripts in internationally reviewed journals, relative to research opportunity.

Good oral and written communication skills.

An ability and willingness to direct and supervise students.

An ability to work independently, show initiative and work productively as part of a team spanning multiple geographic locations.

Highly developed organisational skills and demonstrated ability to set priorities, meet deadlines and conduct research.

Demonstrated commitment to service roles in the workplace.

Demonstrated commitment to inclusivity and diversity in the workplace.

Special Requirements

None

Compliance

Workplace Health and Safety

All supervising staff are required to undertake effective measures to ensure compliance with the Occupational Safety and Health Act 1984 and related University requirements (including Safety, Health and Wellbeing Objectives and Targets).

All staff must comply with requirements of the Occupational Safety and Health Act and all reasonable directives given in relation to health and safety at work, to ensure compliance with University and Legislative health and safety requirements.

Details of the safety obligations can be accessed at <http://www.safety.uwa.edu.au>

Equity and Diversity

All staff members are required to comply with the University's Code of Ethics and Code of Conduct and Equity and Diversity principles. Details of the University policies on these can be accessed at http://www.hr.uwa.edu.au/publications/code_of_ethics, <http://www.equity.uwa.edu.au>