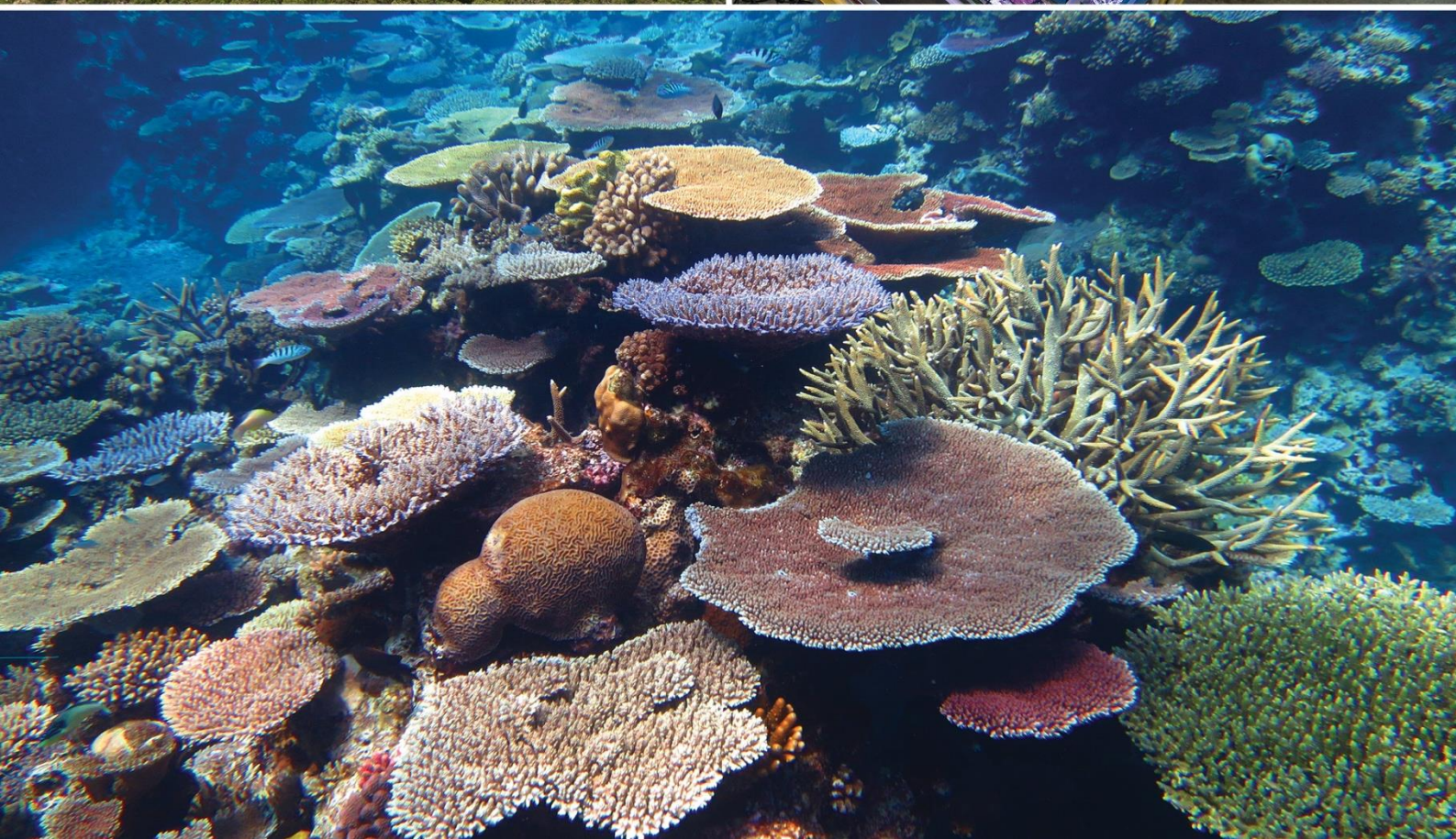
Australian Government

Australian Institute of Marine Science

Data Scientist (Machine Learning & AI)

Data Analytics and AI Team

CANDIDATE INFORMATION PACK



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AIMS was awarded Athena Swan Bronze status in 2020 by the Science in Australia Gender Equity (SAGE) program. This award recognises AIMS' commitment to improving gender equity, diversity and inclusion in STEMM disciplines.

The Australian Institute of Marine Science acknowledges the Traditional Owners of the land and sea on which we work. We recognise the unique relationships and enduring cultural and spiritual connection that Aboriginal and Torres Strait Islander people have to land and sea, and pay our respects to Elders past, present and future.

Photographic credit: *Shaun Hahn, Joe Gioffre, Christian Miller, Steve Clarke, Christian Miller, Chris Brunner, Nick Thake, David Deeley*

About AIMS

The Australian Institute of Marine Science is a corporate Commonwealth entity established under the *Australian Institute of Marine Science Act 1972* (AIMS Act). As Australia's tropical marine research agency, it is our mission to provide the research and knowledge of Australia's tropical marine estate required to support growth in its sustainable use, effective environmental management and protection of its unique ecosystems.

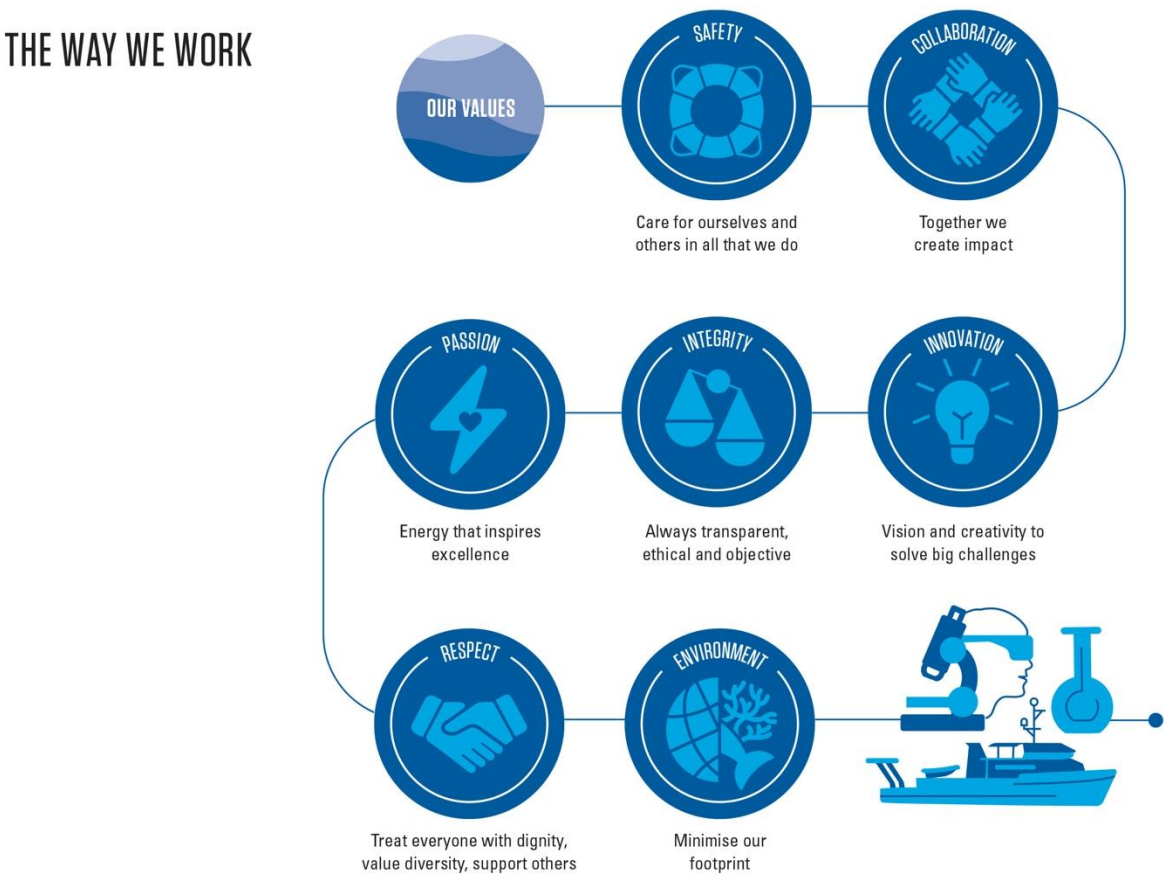
To accomplish our mission, AIMS delivers independent science to help realise three key long-term impacts for the nation:

- Improve the health and resilience of marine and coastal ecosystems across northern Australia.
- Create economic, social and environmental net benefits for marine industries and coastal communities.
- Protect coral reefs and other tropical marine environments from the effects of climate change.

Our research is focused on the priorities of Traditional Owners and our stakeholders, including Commonwealth, state and territory governments, and industry. Our research continues to:

- Underpin Australia's environmental management of the Great Barrier Reef (GBR) to ensure that this World Heritage Area remains healthy and resilient.
- Support the sustainable development of coastal industries and ports across northern Australia.
- Provide the environmental baselines and condition and risk assessments required for current and future resource and industrial developments in Northern Australia.

At AIMS, the way we work guides our team members' on their collective journey towards the successful delivery our AIMS Strategy 2030 targets.

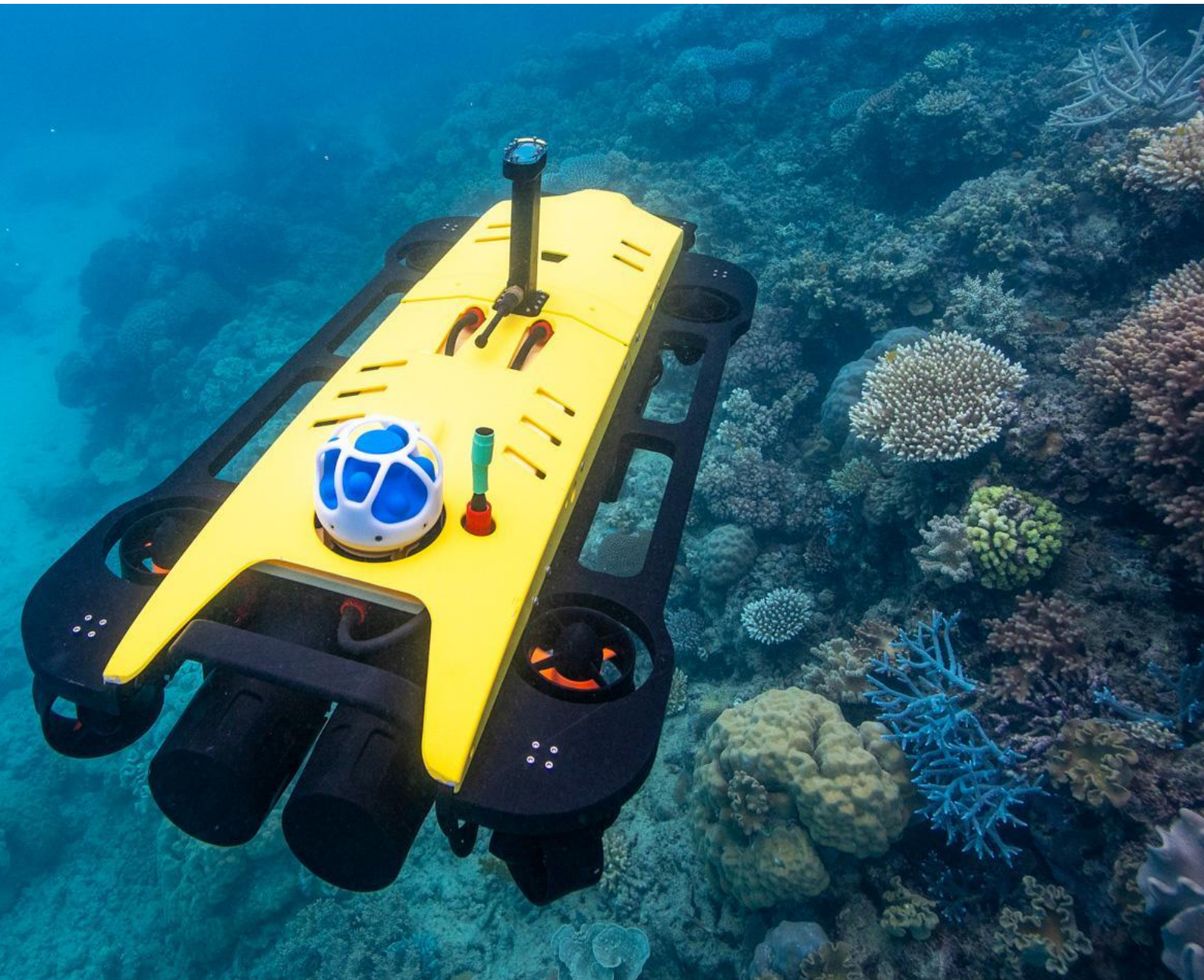


About Data Science & Research Service's Data Analytics & AI Team

Data analytics and AI capabilities are vital to the development of solutions and insights that transform how decision-makers can understand and manage our marine estate. The Data Analytics and AI group works closely with scientists, technologists, and decision-makers (internally and externally) to implement data science (AL, ML, Statistics) solutions and initiatives that help advance their ability to observe, understand, and provide solutions and guidance around the marine environment. Operating at the intersection of data, science, technology and partnerships, the group is critical to the development of solutions and insights, grounded in trust, that accelerate the realisation of outcomes.

The Data Analytics and AI are an innovative and agile group of data scientists (including AI/ML engineers and statisticians) that collaborate with Programs and teams across AIMS in developing insights and delivering solutions, support, and consultancies. They work on diverse projects across AIMS that range digital products, technology solutions, short and long-term, and strategic initiatives.

The team contributes to projects and initiatives across our Research Programs, Technology Development, and Research and Corporate Services.



About Our Data Scientist (Machine Learning & AI) Position

About this opportunity

As an experienced Data Scientist in our Data Analytics and AI group, you will apply your advanced expertise in AI, machine learning, and statistics to enhance data analytics and AI applications across AIMS. You will work collaboratively with researchers from different disciplines across AIMS and with industry partners, providing consultancies and support. You will also contribute to the development of multiple platforms and products, such as ReefCloud and ReefScan, and lead internal capability development and innovation in data analytics and AI. You will also lead internal consultancies and capability development initiatives, and ensure the scalability, robustness, and security of data science implementations.

About you

Experienced in AI and Machine Learning in your previous roles, you will bring with you a wealth of expertise in developing and deploying AI and Machine Learning techniques (CNNs, Transformers, Reinforcement Learning) and statistical models (including Bayesian-based and other empirical models), coupled with an advanced degree/post grad qualifications in Engineering, Computer Science, Mathematics, Statistics, or related field. You'll be fluent in programming using languages such as Python, R, Java, and have a strong publication track-record.

You will be experienced leading advancements in AI and data science solutions, innovating new methodologies, and experienced establishing best practices for AI. This will be reflected in your proven publication track-record. With highly developed communication skills you will be able to support a range of stakeholders and clients, familiar partnering to drive research impact. Experience applying and developing data science/AI techniques for marine or environmental research application or products would be highly desirable, as would experience applying data science/AI operations research, robotics and autonomous systems.

If, after reviewing the position description (refer pages 8 - 11), you believe that your qualifications, experience and professional capabilities will enable you to successfully deliver the position responsibilities, we would be very interested in hearing from you.

NB: *Non-Australian Citizens must hold an appropriate Visa with working entitlements that allows paid employment with AIMS from commencement and for the term of the appointment, depending on the relevant Department of Home Affairs current policies. AIMS may be able to consider sponsorship for international applicants for this role, however, please note that visa processing times can impact the ability for AIMS to consider sponsorship for vacancies. AIMS must meet the requirements of the Department of Home Affairs immigration policies and processes, including the necessity to test the local labour market for suitable applicants. This includes international talent pool members who are Australian visa holders who have relevant working rights.*

Apply now and join a world leading organisation with attractive working conditions which are detailed in our Enterprise Agreement. The successful candidate for this exciting opportunity will be rewarded with:

- AIMS AOF Level 6 salary ($136,089 to $153,351 per annum) plus 15.4% superannuation
- Full-time, Permanent opportunity
- Located in Townsville (Qld), Perth (WA) or Darwin (NT)
- 9-day fortnight
- Flexible Work Arrangements considered (including tele-working where possible)
- Generous leave provisions
- Commuter car arrangements to site (in Townsville only)
- Optional Fitness passport
- Relocation assistance available

How to Apply

Your application submission for this opportunity should include the following documentation:

- Current Resume (including the contact details for two current referees);
- Document addressing the Key Selection Criteria (refer to page 7) within the scope of the position description (refer to page 8-11); and
- A short cover letter.

How to apply: Please submit your application via our website (aims.gov.au).

Further information on the application process and tips for addressing Selection Criteria is available in our Recruitment Application Guide.

Recruitment contact: Position enquiries can be directed to Kamran Shafi, Manager, Data Analytics and AI at k.shafi@aims.gov.au. *Applications must be made through our website per above.*

Closing date: MONDAY, 12 AUGUST 2024 (midnight, AEST).

NB: *Applicant survey: All applicants will be invited to complete a voluntary survey after the vacancy closing date. Your responses to this survey do not form part of your application for this position. Further information about the purpose of this survey will be provided to you in the invitation.*

Key Selection Criteria

Your application submission should address the following Selection Criteria. Please address each Selection Criteria in a separate paragraph (maximum 250 words per criteria) and in a single document. The selection criteria and your CV are the documents against which we assess your suitability for the position.

Your responses to the following Key Selection Criteria must evidence your suitability for this exciting opportunity within the scope of the position description (pages 8-11).

Essential

- Advance degree/Post Graduate qualifications in Engineering, Computer Science, mathematics or statistics, or a related field
- Expertise in developing and deploying AI and Machine Learning (e.g. CNNs, Transformers, Reinforcement Learning), statistical modelling (e.g. Bayesian techniques).
- Expertise in programming using languages such as Python, R, Java, etc.
- Well-developed communication and engagement skills, with demonstrated experience in supervising employees, as well as supporting a range of stakeholders and clients, to achieve team objectives
- Strong publication track-record.

Desirable

- Experience applying and developing data science/AI techniques for marine or environmental research application or products.
- Experience applying data science/AI operations research, robotics and autonomous systems.
- Current C Class Open Drivers Licence (or equivalent) or the willingness to obtain.

POSITION DESCRIPTION:
DATA SCIENTIST (MACHINE LEARNING & AI)

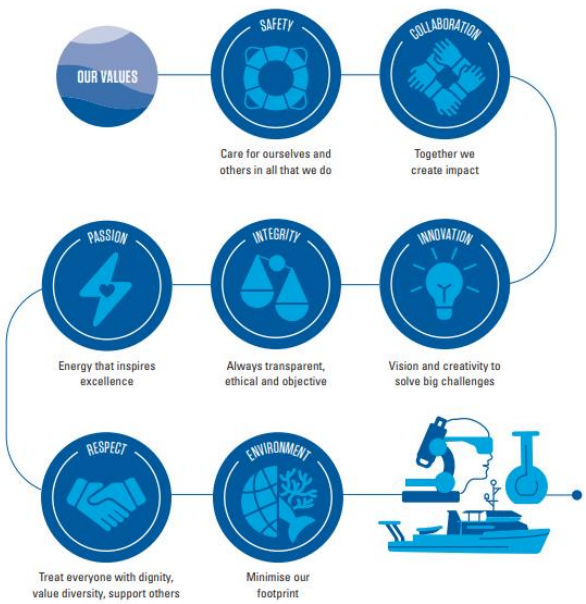
Position Description			
Position Title:	**Data Scientist (Machine Learning & AI)**		
Position Number:	21817		
Organisational Unit Name and Number:	Data Analytics and AI (6302)	**Program:**	Data Science and Research Services (Program 4)
Salary cost centre:	6302		
Primary Location:	Townsville, Perth, or Darwin		
Agreement:	**AIMS Enterprise Agreement 2024 – 2027** (and any subsequent agreement)		
Position Classification:	AOF Level 6	**FTE Status:**	Full-time (1.0 FTE)
First Level Supervisor:	Manager, Data Analytics and AI (21815)		
Positions under Direct Supervision:	Up to 1		
Functional Area:	Research Engineer		

AIMS Strategy 2030

Our Mission

To provide the research and knowledge of Australia's tropical marine estate required to support growth in its sustainable use, effective environmental management, and protection of its unique ecosystems.

The Way We Work



Position Summary:	The Data Scientist (Machine Learning & AI) works closely with from a range of disciplines across AIMS providing consultancy and implementing advanced analytics solutions. They utilise advance expertise in the development and deployment of AI, machine learning, statistical and other types of models to advance marine science research at AIMS, enable researchers to deliver better outcomes efficiently, and contribute to generating impact for end-users and stakeholders.
Position Responsibilities:	The Data Scientist (Machine Learning & AI): • Applies considerable professional expertise, knowledge of other disciplines and research experience and achievement to collaborate with research teams across

	AIMS and other industry partners, to implement AI, machine learning, statistics, and other data science methodologies and technologies that enable them to innovate across a diverse set of research application. • Contribute expert knowledge to the development and successful technology transfer or uptake by client of multiple platforms and innovative products being developed at AIMS, including ReefCloud and ReefScan. • Lead internal consultancies and capability development initiatives with researchers and on projects implementing AI, machine learning, and statistical solutions and methodologies. • Lead advancement in AIMS AI and data science solutions by innovating new methodologies where required while also adopting existing methodologies to enable us to stay at the forefront in marine science research. • Prioritise the scalability and robustness of modelling techniques, ensuring long-term sustainability of data science implementations, as well as the robust security of systems. • Establish best practices for AI data science, and data management by developing frameworks and/or adapting existing frameworks, ensuring flexibility while maintaining quality and effectiveness. • Actively engage in driving research impact, including through leading and co-authoring publications and collaborations with external institutes and experts. • Support data and digital literacy and innovation initiatives, encourage data-driven decision-making, and establish frameworks to facilitate a data driven-culture within AIMS. • Contributes specialised knowledge to initiatives within Research Programs, Tech Development, and Research & Corporate Services. • Build and maintain alliances and networks that provide an up-to-date awareness of advances in technology and ideas to anticipate industry and/or community needs through client liaison and networking • Comply with AIMS' Code of Conduct ensuring the standards of conduct required of an AIMS staff member are upheld. • Be an active and contributing employee dedicated to upholding and promoting AIMS' Strategy 2030 and acting accordance with our Values.
Key Responsibilities and Performance Standards	
Science Outputs:	***Milestones:*** Ensure the successful completion of specific research tasks as outlined in the research project plans. ***Publications:*** Author, co-author or contribute to scientific papers for international refereed scientific journals. Write or coordinate the writing of high-quality reports to meet contractual deadlines. ***Presentations:*** Present own work and the work of team to peers and end users in conferences and meetings. ***Intellectual Assets:*** Identify emerging intellectual property resulting from AIMS' research and take appropriate action to protect AIMS IP Assets.
Work Health and Safety (For All Staff)	• Comply with AIMS' WHS policies and procedures to ensure a safe workplace. • Identify workplace hazards and take corrective action with your supervisor's guidance. • Take reasonable care to ensure your own safety and health at work. • Avoid adversely affecting the safety and physical or psychological health of any other person. • Identify and report health and safety hazards, incidents, injuries or property damage at the workplace. • Comply with health and safety instructions as indicated.

<table>
<tr><td></td><td>

Ensure correct Personal Protective Equipment (PPE) is used for the task or activity as applicable. Take care to follow signage and direction as indicated.
Complete WHS Inductions as directed.
Strong commitment to and sound knowledge of principles and practices of Work Health and Safety and Workplace Diversity and Inclusion.
Ensure early reporting of physical or psychological factors that may impact on the completion of your daily position responsibilities so that reasonable adjustments may be considered.
Comply with Visitor Registration procedures and ensure visitors that you sponsor complete the relevant WHS inductions prior to attendance at the applicable AIMS site.

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<tr><td>Work Health and Safety (for Supervisors/Managers/Leadership Team)</td><td>

Raise WHS awareness throughout AIMS Programs.
Facilitate continuous improvement and cultural beliefs around safety.
Actively promote and disseminate WHS information.
Provide and maintain workplaces, plant, and systems of work such that, so far as is practicable, employees are not exposed to physical or psychological hazards.
Provide information, instruction, training and supervision of employees as is necessary to enable them to perform their work in such a manner that they are not exposed, and do not expose others to physical or psychological hazards.
Implement components of WHS management systems.
Implement hazard identification, risk assessment and control.
Implement incident investigation, reporting and record keeping.

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<tr><td>Work Health & Safety – Minimum Functional Requirements</td><td>
Participate in Manual Task (Functional) Assessments and Fit for Work medical assessments as required.
Minimum functional requirements*:
<table>
<tr><td>Maximum lift expected (5kg, 10kg, 25 kg)</td><td>10kg</td></tr>
<tr><td>% role mobilising</td><td>10%</td></tr>
<tr><td>% role sitting</td><td>80%</td></tr>
<tr><td>% role standing/static positions</td><td>10%</td></tr>
<tr><td>% role diving</td><td>0%</td></tr>
<tr><td>Work in offshore or remote locations for extended periods of time</td><td>No</td></tr>
</table>
AIMS is an inclusive employer and will assess if modifications to the above work requirements can be made if provided with Reasonable Adjustment criteria from your Treating Doctor or other suitably qualified medical professional. Please consider the inherent physical requirements of the Position when making your request for Reasonable Adjustment.

AIMS strongly encourages all employees to be fully vaccinated against COVID-19. Whilst it is not currently a mandatory requirement for this role, AIMS reserves the right to review its position and policy on mandatory vaccinations. It may therefore become a mandatory requirement for this role in the future.

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<tr><td>Intellectual Assets:</td><td>

Ensure compliance with AIMS' Intellectual Property policies, procedures and guidelines to ensure AIMS' intellectual assets are appropriately protected and managed.

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<tr><td>Financial responsibilities and accountabilities and delegations:</td><td>

Delegations are in line with Financial and Contract Delegation Policy, which includes authorisation levels for Financial, Enterprise Agreement (supervisory), HS&E and General Administrative activities.
Contribute to positional budget requirements.
Manage AIMS funds and resources in a responsible manner and within delegation.
Comply with AIMS' Fraud Prevention Plan ensuring the standards of conduct and ethical behaviour required of an AIMS staff member are upheld and that suspected fraudulent activity is prevented and/or reported.

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<tr><td>Working as a team:</td><td>

To work as a member of a multi-disciplinary team that values diversity while ensuring the achievement of AIMS' goals and objectives.

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	• Provide direction and achievable goal setting for team members and uphold AIMS Values at all times. • Participate in the AIMS Leadership and Culture program including having a personal action plan in place. • Well-developed interpersonal and communication skills including the capabilities to effectively consult, collaborate and liaise with other team members on science/technical and non-science/technical issues for the purpose of achieving team objectives and maintaining a positive team environment.
External Customer, Partner, Collaborator and Stakeholder Requirements:	• Nurture existing relationships and initiate new ones in consultation with the CEO and other ALT members. • Engage with selected stakeholders in support of AIMS Strategy 2030
Innovation, problem solving and continuous improvement responsibilities:	• Assist in the improvement of the day-to-day operations, systems and processes associated with AIMS. • Support team members to review and analyse processes to identify improvements and celebrate efforts towards continuous improvement. • Approach all tasks and activities from a risk management prospective.
Performance management and planning responsibilities:	• Plan work activities to ensure the achievement of timelines. • Ensure timely and accurate completion of required tasks. • Actively participate in own personal performance planning and evaluation. • Successfully participate in the AIMS annual Performance and Development program. • Contribute to positional requirements to operational planning. Identify recruitment needs and recommend to supervisor.
Communication responsibilities:	• Comply with AIMS' Social Media policy. • Ensure use of private Social Media accounts and other e-communication platforms are in compliance with AIMS policies and procedures, as amended from time to time. • Refer to Corporate Style Guide for the production of documents, procedures, presentations and other communication material.
Technology and Equipment:	Utilise AIMS Technology and Equipment as required and directed such as: • Networked personal computer and general office equipment. • EDMS – TechOne ECM, Procurement, P&C, Finance modules • Microsoft Project, Microsoft 365 applications • AIMS Fleet Vehicles (including Commuter Car Arrangements)
Selection Criteria **Qualifications, Skills and Experience**	
Essential Qualifications and Experience:	• Advance degree/Post Graduate qualifications in Engineering, Computer Science, mathematics or statistics, or a related field • Expertise in developing and deploying AI and Machine Learning (e.g. CNNs, Transformers, Reinforcement Learning), statistical modelling (e.g. Bayesian techniques). • Expertise in programming using languages such as Python, R, Java, etc. • Well-developed communication and engagement skills, with demonstrated experience in supervising employees, as well as supporting a range of stakeholders and clients, to achieve team objectives • Strong publication track-record.
Desirable Qualifications and Experience:	• Experience applying and developing data science/AI techniques for marine or environmental research application or products. • Experience applying data science/AI operations research, robotics and autonomous systems. • Current C Class Open Drivers Licence (or equivalent) or the willingness to obtain.

About our Locations

Townsville (QLD) Facility

AIMS headquarters is south of Townsville, Queensland at Cape Ferguson. We are about 50 km from Townsville's CBD, is an international landmark in tropical marine science and home to the National Sea Simulator (SeaSim). We are adjacent to the centre of the Great Barrier Reef and surrounded by a 207-hectare national park and marine reserve. The area is free from development, is biosecure and has access to clean seawater and a protected harbour.

Finding us (see more on our website):
Head south from Townsville on the Bruce Highway (A1). Approximately 37 km from the city centre, turn left at the signposted turn-off to AIMS, onto Cape Cleveland Rd. Follow this road for a further 16 km until you arrive at the Institute. Please note there is **no public transport** to the Institute however employee commuter car arrangements are detailed in our Enterprise Agreement *(Part I – Commuting Arrangements – Cape Ferguson)*.

Living in Townsville
Townsville is a vibrant and rapidly growing city in North Queensland. Surrounded by the Great Barrier Reef, numerous coastal islands, the Wet Tropics rainforest and the outback, and less than two hours by plane from Brisbane, the region experiences a warm tropical climate with more than 300 days of sunshine each year.

A diverse economic base with strengths in government administration, health, defence, education, marine science, natural resource management, manufacturing and mining, ports and shipping and agriculture supports a current population of over 190,000 people.

Boasting a relaxed lifestyle, residents of Townsville enjoy access to world class educational, medical, sporting and recreational facilities. Townsville attracts high quality national and international festivals, cultural and sporting events.

For further information visit **www.townsville.qld.gov.au** and **Live North Queensland**

Perth (WA) Office

Perth is a vibrant city and an exciting hub located on the west coast of Australia. Perth sits along the Swan River and is surrounded by unique landscapes, from Australian bushland in the west to rolling coastline 12 km east of the city. Perth is a fast-developing region, with a population of over 2 million people. Perth's diverse economic base is supported by key industries including Professional, Scientific and Technical Services (the largest industry employer), Government and Administration, Resources, and Health. Perth offers an array of opportunities for residents including exploration of diverse outdoor spaces, world-class national and international cultural and sporting events, architectural and historical attractions, and access to high-quality health, entertainment, medical, educational and sporting facilities. Perth is also recognised as the sunniest capital city in Australia.

AIMS Perth Site (see more on our website)**:**
AIMS in Perth is co-located within the Indian Ocean Marine Research Centre (IOMRC) at the University of Western Australia (UWA)'s Crawley campus. You can reach the UWA campus by heading south-west from Perth CBD on Mounts Bay Rd. Our office is on Level 3 of the Indian Ocean Marine Research Centre, on Fairway. There are several bus routes to the campus:

About our Locations

- Bus 97, which leaves from Subiaco train station
- Buses 102 and 107, which leave from the Wellington St train station in the CBD, and
- Bus 950 travelling from Perth City to the UWA campus.

All these routes stop at UWA near the corner of Stirling Hwy and Fairway.

More information: Welcome to Western Australia; Build a life in WA; City of Perth.

Darwin (NT) Facility

Our research in Darwin takes place at the Arafura Timor Research Facility (ATRF), only 15 minutes' drive from the city centre, within the boundaries of the North Australia campus of the Australian National University and adjacent to the Charles Darwin University. The Arafura–Timor region, in which Darwin is a scientific and commercial hub, is linguistically, culturally and biologically diverse, which provides valuable links between the biophysical and social sciences.

Finding us (view more on our website):
From the Darwin CBD, follow the Stuart Highway for several kilometres, then turn left onto Bagot Road and head towards Casuarina. Stay on Bagot Road until it becomes Trower Road, turn left onto Dripstone Road, and then right into Ellengowan Road at the roundabout in front of Charles Darwin University.

The sign at the front of the complex reads: 'North Australia Research Unit and Arafura Timor Research Facility'. There is reserved car parking within. There is no direct public transport to the office.

Living in Darwin
Darwin is a modern capital city highly valued by its diverse and highly multicultural population, with a strong position in business and industry. Darwin has evolved from its days as a laid-back frontier town and while it still retains its relaxed charm, it has become a sophisticated city. Many visitors are surprised to find that it has accommodation, eateries, clubs, pubs, museums and other amenities that are equal to what you'll find in the southern cities.

Our city is both modern and multicultural, boasting a population made up of people from more than 60 nationalities and 70 different ethnic backgrounds. The city is characterised by its many exciting cultural festivals and weekly food and craft markets.

For further information visit **City of Darwin Website**.