## POSITION DESCRIPTION

### Research Associate

<table>
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<th>Position Level</th>
<th>A</th>
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<tr>
<td>Faculty/Division</td>
<td>Science</td>
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<tr>
<td>Position Number</td>
<td>00082423</td>
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<td>Original document creation</td>
<td>16/12/ 2021</td>
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**Position Summary**

The School of Mathematics and Statistics currently has more than sixty continuing academic staff and more than thirty research staff as well as visiting academics. UNSW is the only university in Australia to be ranked in the top 100 in the world in Mathematics and Statistics by each of the four ranking bodies: CWTS Leiden, ARWU, USNews, QS. The School embodies a broad range of research interests in the areas of applied and pure mathematics and statistics. The School’s undergraduate programs cover a wide spectrum of courses in Applied Mathematics, Pure Mathematics, Statistics and Data Science. Its postgraduate programs include coursework degrees (at Graduate Diploma and Masters levels) and vigorous research programs leading to MSc and PhD degrees.

The role of Research Associate sits in the UNSW Data Science Hub located within the School of Mathematics & Statistics. The UNSW Data Science Hub is a major strategic initiative of UNSW Science. It aims to cultivate and promote foundational and applied research in Data Science with a focus on environmental, physical and health sciences. The Hub provides a world-class environment, with access to state-of-the-art data visualisation and computing facilities. These facilities enable the creation, development and deployment of transformative data-driven decision-making tools that help us to address future societal challenges. The role works in close collaboration with leading scientists and engineers at Data61 and other CSIRO Business units as part of the Decision activity area of the Machine Learning and Artificial Intelligence Future Science Platform. The role is based at the UNSW Data Science Hub, UNSW Sydney Kensington Campus but will be required to perform some work at Data61, Eveleigh, NSW.
The role reports to Prof. Scott Sisson and has nil direct reports.

Accountabilities
Specific accountabilities for this role include:

- Contribute independently or as a team member in collaborative research with a focus to enhance the quality of research outcomes in the discipline area.
- Conduct research in the application of complex statistical and machine learning techniques to models of decision making.
- Undertake specific research project/s under the guidance of a research leader and contribute to development of research activities.
- Coordinate research activities and participate in the setting of future research directions of the project.
- Assist with the supervision of research students in the research area where required.
- Act as a conduit to efficiently draw together the expertise of researchers from both UNSW Sydney and Data61/CSIRO to best tackle the research challenges.
- Perform research collaboratively and individually, which will lead to high quality research articles for publication in internationally refereed mathematical journals.
- Initiate, implement and complete new research projects.
- Present results of research at conferences and other venues.
- Satisfactory conduct of administrative and other duties allocated by the supervisor.
- Participate in supervision of research postgraduate students.
- Effectively engage with the broader scholarly community.
- Align with and actively demonstrate the UNSW Values in Action: Our Behaviours and the UNSW Code of Conduct.
- Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.

Skills and Experience

- PhD or equivalent qualification in mathematics, statistics, physics or an alternative field with a strong mathematical and statistical background.
- Strong knowledge and demonstrated ability in at least one of Bayesian statistics, Reinforcement learning, computational statistics and machine learning methodology, including variational inference, Markov chain Monte Carlo methods, Gaussian processes, mixture modelling.
- Familiarity with deep learning and different neural network architectures.
• Superior ability to program in a high level language, such as Python and R, with application of version control.

• A strong research track record (relative to opportunity) as evidenced by publications in leading journals or conferences.

• A capacity to initiate and conduct independent research.

• A capacity to attract and effectively supervise research students.

• Ability to work cooperatively in a team and contribute positively to research culture.

• Proven ability to communicate effectively both verbally and in writing.

• Demonstrated ability to communicate and interact with a diverse range of stakeholders and students.

• An understanding of and commitment to UNSW’s aims, objectives and values in action, together with relevant policies and guidelines.

• Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.

**Pre-employment checks required for this position**

• Verification of qualifications

*About this document*

This Position Description outlines the objectives, desired outcomes, key responsibilities, accountabilities, required skills, experience and desired behaviours required to successfully perform the role.

This template is not intended to limit the scope or accountabilities of the position. Characteristics of the position may be altered in accordance with the changing requirements of the role.