

Position Description

Research Associate – Evolutionary Computation

*Position Number: 00071532
Position Title: Research Associate
Date Written: February 2019*

*Faculty / Division: UNSW Canberra
School / Unit: School Engineering & Information
Technology (SEIT)
Position Level: Level A*

ORGANISATIONAL ENVIRONMENT

UNSW is currently implementing a ten-year strategy to 2025 and our ambition for the next decade is nothing less than to establish UNSW as Australia's global university. We aspire to this in the belief that a great university, which is a global leader in discovery, innovation, impact, education and thought leadership, can make an enormous difference to the lives of people in Australia and around the world.

Following extensive consultation in 2015, we identified three strategic priority areas. Firstly, a drive for academic excellence in research and education. Universities are often classified as 'research intensive' or 'teaching intensive'. UNSW is proud to be an exemplar of both. We are amongst a limited group of universities worldwide capable of delivering research excellence alongside the highest quality education on a large scale. Secondly, a passion for social engagement, which improves lives through advancing equality, diversity, open debate and economic progress. Thirdly, a commitment to achieving global impact through sharing our capability in research and education in the highest quality partnerships with institutions in both developed and emerging societies. We regard the interplay of academic excellence, social engagement and global impact as the hallmarks of a great forward-looking 21st century university.

To achieve this ambition, we are attracting the very best academic and professional staff to play leadership roles in our organisation.

VALUES IN ACTION: OUR UNSW BEHAVIOURS

UNSW recognises the role of employees in driving a high-performance culture. The behavioural expectations for UNSW are below.



Delivers high performance and demonstrates service excellence.



Thinks creatively and develops new ways of working. Initiates and embraces change.



Works effectively within and across teams. Builds relationships with internal and external stakeholders to deliver on outcomes.



Values individual differences and contributions of all people and promotes inclusion.



Treats others with dignity and empathy. Communicates with integrity and openness.

OVERVIEW OF RELEVANT AREA AND POSITION SUMMARY

The Research Associate position is situated within the School of Engineering & Information Technology (SEIT). The Research Associate Position is a key position within the research team working on the Australian Research Council (ARC) Discovery Project (DP) “Evolutionary computation for robust multi-objective engineering design”. The Research Associate will conduct research into the development of novel algorithms to search for robust engineering designs considering multiple conflicting performance criteria.

The Research Associate Position reports to the Dr Hermant Singh.

RESPONSIBILITIES

Specific responsibilities for this role include:

1. Conduct independent and collaborative research to develop optimisation algorithms and assess performance against benchmarks/applications as directed by the Lead CI.
2. Prepare reports summarising the findings gained from research.
3. Contribute to the preparation of research proposals for submissions to external funding bodies.
4. Prepare and publish research results in peer reviewed journals and present findings at national and/or international conferences, as appropriate.
5. Develop and contribute to ideas for new research projects, working both independently and collaboratively to deal with the current challenges in multidisciplinary optimisation.
6. In consultation with the Lead CI, design and implement surveys, develop and conduct workshops and contribute to a range of research-related administrative efforts.
7. Interact with undergraduate and postgraduate students and assist in their supervision and engage in efforts to attract research students.
8. Contribute to School teaching activities as required.
9. Attend domestic and international meetings associated with the research or the work of the organisational unit to which the research is connected.
10. Establish and maintain effective working relationships with key stakeholders.
11. Attend departmental and faculty meetings and participate in professional activity as appropriate.
12. Ensure hazards and risks are identified and controlled for tasks, projects and activities that pose a health and safety risk within your area of responsibility.

SELECTION CRITERIA

1. A PhD in the field of Computer Science, Engineering or related discipline.
2. A demonstrated ability to conduct research in evolutionary optimisation domain, demonstrated by a record of papers in high quality (SNIP>1.0) journals.
3. A demonstrated ability and willingness to contribute to the development of workshops, policy briefs and other aspects of research-related administration.
4. Analytical skills and understanding of relevant mathematical and computational tools and techniques for investigating research problems in-depth.
5. Excellent coding skills in at least one of the key programming platforms MATLAB/Python/C/C++ etc. Ability to effectively adapt to other platforms where necessitated by research scope (for e.g. benchmarking with other existing codes).

6. Demonstrated synergy with current Group, School Research and Education, High Impact Strategic Themes, School Capabilities or Associated Research Centres or the capacity to develop synergy and collaborate in these areas.
7. Ability to conduct high quality teaching in a University environment and willingness to undertake teaching duties as required.
8. Excellent interpersonal, oral and written communication skills appropriate for interacting effectively team members, collaborators and colleagues across the Faculty.
9. Ability and capacity to implement required UNSW health and safety policies and procedures.

It is not the intention of the position description to limit the scope or accountabilities of the position but to highlight the most important aspects of the position. The aspects mentioned above may be altered in accordance with the changing requirements of the role.