

<b>Position Title</b>	Lecturer
<b>Classification</b>	Level B
<b>School/Division</b>	School of Physics, Mathematics and Computing
<b>Centre/Section</b>	
<b>Supervisor Title</b>	Professor
<b>Supervisor Position Number</b>	
<b>Position Number</b>	

## Your work area

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The School of Physics, Mathematics and Computing is renowned for its award-winning researchers, lecturers, and facilities. The research strengths of the school include frontiers physics, mathematics and statistics, computer science and cybersecurity. The School of Physics, Mathematics and Computing offers broad-based undergraduate and postgraduate programs to develop skills to tackle the fast-paced changes in today's world.

The Pawsey Supercomputing Research Centre is a government-supported high-performance computing national facility and a joint venture between the CSIRO, Curtin University, Edith Cowan University, Murdoch University and the University of Western Australia. It is a worldclass high-performance computing facility to help accelerate scientific discoveries for Australia's researchers.

The QUISA (Quantum Information, Simulation and Algorithms) Research Centre, hosted at The University of Western Australia, aims to foster collaboration and entrepreneurship, bringing together academic staff, research students, as well as government and industrial partners to develop innovative quantum solutions to tackle otherwise intractable problems and complex phenomena.

## Reporting structure

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Reports to: Head, School of Physics, Mathematics and Computing

## Your role

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As the appointee you will, under broad supervision, undertake independent teaching and research in the School of Physics, Mathematics and Computing and at the Pawsey Supercomputing Research Centre. The role will include 75% of research and 25% of teaching and general support in the area of quantum computation and scientific high-performance computing. Key responsibilities will include conducting research and presenting research outcomes at national and international conferences and workshops, as well as publishing high-quality/high-impact journal papers.

You will provide innovation and inputs into the planning and designing of research programs, and prepare external competitive grant applications. You will also be expected to teach and supervise research students.

## **Your key responsibilities**

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### **Contributes to outstanding teaching and learning outcomes**

Contribute to world-class teaching in the degree programs of the Department at both Undergraduate and Postgraduate levels; undertake administrative duties as required (including online teaching)

Contribute to developing undergraduate and postgraduate education policy and curricula to ensure an excellent student experience

Provide high quality supervision of Honours, Masters and PhD students and research projects

Contribute and commit to high quality teaching, and unit coordination

Attract and recruit quality postgraduate students and postdoctoral research fellows

Design and implement best practice assessment of student learning outcomes and participate in assessment panels

### **Contributes to research outcomes within discipline or area of expertise**

Apply quantum computing approaches to solve challenging problems of practical significance

Develop hybrid methodologies that combine classical and quantum approaches, enabling robust scalability on future exascale systems while harnessing the potential of quantum devices

Join or develop a research team to initiate research in local, national and international arenas

Undertake independent and collaborative research to generate research outputs of high impact

Communicate research findings through scientific publications, reports, meetings and teaching

Engage with a network of contacts with local, national and international universities for the purposes of research collaboration and the enhancement of the reputation of the School and the University

Enhance the reputation of the School and the University by producing publications in highly ranked peer reviewed journals of international standing

Either as an individual or as part of a team, play a role in bids for major research funding from national and international competitive funding agencies, industry and government partners

Actively seek and attract funding for education research

### **Service and Engagement**

Contribute to the governance and collegial life within the School, across the Faculty and University and more broadly outside the institution

Work within the legislative requirements of the University and support the University's commitment to inclusion and diversity

Represent the University of Western Australia through involvement in professional associations, conferences, non-academic (e.g. government, not-for-profit, industry) partnerships, and other external activities

Maintain current knowledge of standards of practice and required student assessment procedures and ensure these are completed to required standard and time frame

Contribute to team activities such as team and school meetings, strategic planning and program development

Undertake administrative duties as required in relation to the above teaching and research supervision

Perform other duties as directed by the Head of School and the Discipline Chair

### **Your specific work capabilities (selection criteria)**

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A PhD in the area of quantum computation, or directly relevant areas in physics and scientific computing

Demonstrated research performance especially in the development of quantum algorithms with a strong publication record, commensurate with opportunity

Excellent verbal, and written communication skills

Excellent organisational skills with the demonstrated ability to set priorities and to meet deadlines

Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships

Experience in scientific modelling, simulations, and high-performance computing is desirable

### **Special requirements (selection criteria)**

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There are no special requirements

### **Compliance**

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Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:

The University's Code of Conduct [hr.uwa.edu.au/policies/policies/conduct/code/conduct](http://hr.uwa.edu.au/policies/policies/conduct/code/conduct)

Inclusion and Diversity [web.uwa.edu.au/inclusion-diversity](http://web.uwa.edu.au/inclusion-diversity)

Safety, health and wellbeing [safety.uw.edu.au/](http://safety.uw.edu.au/)

<b>Position Title</b>	Senior Lecturer
<b>Classification</b>	Level C
<b>School/Division</b>	School of Physics, Mathematics and Computing
<b>Centre/Section</b>	
<b>Supervisor Title</b>	Professor
<b>Supervisor Position Number</b>	
<b>Position Number</b>	

## **Your work area**

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## **Reporting structure**

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Reports to: Head, School of Physics, Mathematics and Computing

## **Your role**

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As the appointee you will, under broad supervision, undertake independent teaching and research in the School of Physics, Mathematics and Computing and at the Pawsey Supercomputing Research Centre. The role will include 75% of research and 25% of teaching and general support in the area of quantum computation and scientific high-performance computing. Key responsibilities will include conducting research and presenting research outcomes at national and international conferences and workshops, as well as publishing high-quality/high-impact journal papers.

You will provide innovation and inputs into the planning and designing of research programs, and prepare external competitive grant applications. You will also be expected to teach and supervise research students.

## **Your key responsibilities**

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### **Contributes to outstanding teaching and learning outcomes**

Develop, coordinate and deliver world-class innovative teaching in the degree programs of the Department at both Undergraduate and Postgraduate levels; undertake administrative duties as required (including online teaching, unit coordination)

Take an active role in the development of undergraduate and/or postgraduate education policy and curricula to ensure an excellent student experience

Direct and supervise Undergraduates, Honours, Masters, PhD students and their research projects

Develop and supervise student placements to strengthen industry partnerships

Develop the [discipline] research program, to ensure continuous quality improvement to the unit and the course

Coordinate discipline specific and clinical placement opportunities including liaison with universities, key community stakeholders and health organisations

Attract and recruit quality postgraduate students and postdoctoral research fellows

Design and implement best practice assessment and evidence of student learning outcomes at Unit and Course level and lead assessment panels at undergraduate and postgraduate levels.

### **Contributes to research outcomes within discipline or area of expertise**

Apply quantum computing approaches to solve challenging problems of practical significance

Develop hybrid methodologies that combine classical and quantum approaches, enabling robust scalability on future exascale systems while harnessing the potential of quantum devices

Research the integration of quantum and classical computers both at the system/hardware and algorithm development level

Create and help lead collaborative research initiatives in local, national and international arenas.

Foster the research of other groups and individuals in the School, both in the discipline and in related discipline areas

Develop a network of contacts with local, national and international universities for the purposes of research collaboration

Create new knowledge in discipline and disseminate it through publication in highly ranked peer reviewed journals that will enhance the reputation of the School and the University at a national and international level

Play a role in securing research funding from national and international competitive funding agencies, industry and government partners Join or develop a research team to initiate research in local, national and international arenas

Enhance the reputation of the School and the University by producing publications in highly ranked peer reviewed journals of international standing

### **Service and Engagement**

Contribute to the governance and collegial life within the School, across the University and more broadly outside the institution

Participation in education/research leadership in public engagements, government and industry including involvement in an innovation beyond academia

Work within the legislative requirements of the University and support the University's commitment to inclusion and diversity

Represent the University of Western Australia through involvement in professional associations, conferences, non-academic (e.g. government, not-for-profit, industry) partnerships, and other external activities

Contribute to team activities such as team and school meetings, strategic planning and program development

Participation in the Universities social impact studies

Undertake administrative duties as required in relation to the above teaching and research supervision

Perform other duties as directed by the Head of School and the Discipline Chair

### **Your specific work capabilities (selection criteria)**

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A PhD in the area of quantum computation, or directly relevant areas in physics and scientific computing

Proven ability in independently formulating research questions and conducting high quality research

Excellent verbal, and written communication skills

Demonstrated research capabilities in quantum algorithms, quantum software development, and high-performance computing

Proven experience or demonstrated potential in teaching and supervision of research students

Experience working with industry and/or government end-users, and strong interpersonal skills to interact with a diverse range of stakeholders is desirable

### **Special requirements (selection criteria)**

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There are no special requirements

### **Compliance**

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Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:

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Safety, health and wellbeing [safety.uw.edu.au/](http://safety.uw.edu.au/)