

UNSW@ADFA

CANBERRA • AUSTRALIA

POSITION DESCRIPTION

Date:	November 2011
Position:	Research Associate / Lecturer
Faculty/School:	SEIT
Position Number:	30580
ADFA Level:	B

OVERVIEW

This is a tenure track position with a tenure period ending on 31 December 2016. During this tenure period, the position will be primarily research only and related to a specific ARC Laureate Fellowship research project. Subject to the candidate meeting the requirements of tenure, the position will be converted to a permanent Teaching and Research position in the School of Engineering and Information Technology at the end of the tenure period. If the candidate does not meet the requirements of tenure, the position will terminate at the end of the tenure period.

JOB PURPOSE

- During the tenure period, to conduct scholarly research and publishing outcomes of that research in an area related to the Australian Research Council Laureate Fellowship project "Consensus, Estimation and Control in Complex Large-Scale Quantum Systems".
- During the tenure period, to teach a limited number of undergraduate and postgraduate courses within the School of Engineering and Information Technology in areas related to the above project.
- After the tenure period, to teach at any level of the undergraduate and postgraduate coursework programs within the School of Engineering and Information Technology in a wide range of areas in Electrical Engineering.
- To contribute to the effective functioning of the School by other activities as required.
- Candidates with expertise in Control Theory with an emphasis on Quantum Control, Stochastic Control, Consensus, Multi-agent Systems or Mean Field Theory are encouraged to apply.

STATEMENT OF DUTIES

- Conduct research and publish the outcomes of this research in scholarly journals and other venues. During the tenure period, this research should be in an area related to the Australian Research Council Laureate Fellowship project “Consensus, Estimation and Control in Complex Large-Scale Quantum Systems”. After the tenure period, this research can be in any area of research related to the field of Electrical Engineering.
- Develop teaching materials, deliver lectures, tutorial and laboratory classes, supervise undergraduate projects and conduct assessment in the undergraduate and postgraduate coursework programs of the School. During the tenure period, these teaching duties will be limited and in areas related to the above mentioned research project. After the tenure period, these teaching duties will be at a similar level to all other teaching and research staff within the school.
- Attract external research funding.
- Supervise postgraduate research candidates.
- Perform delegated administrative duties as required.

STATISTICS

The School of Engineering and Information Technology offers four 4-year Bachelor of Engineering degrees in Aeronautical, Civil, Electrical and Mechanical Engineering as well as two 3-year Bachelor of Technology degrees in Aeronautical Engineering and Aviation and the 3-year Bachelor of Information Technology. The School also offers majors in Computer Science and Operations Research in the Bachelor of Science program and majors in Information Systems and Aviation in both the Bachelor of Arts and Bachelor of Science programs. The Chief of Defence Force Students Program (CDFSP) for high achieving undergraduate students at UNSW@ADFA includes offerings in most of these areas.

Information on the research strengths of the School can be found on our web site at: <http://seit.unsw.adfa.edu.au/research/>.

The School has a growing number of higher degree research students studying primarily towards a PhD qualification. Currently, there are more than 170 research students in the School.

Staff of the School are affiliated with a number of national research centres, including:

- Centre for Quantum Computation and Communication Technology,
- Australian Centre for Space Engineering Research,
- Scramspace project,
- CRC for Advanced Composite Structures,
- ARC Research Network for a Secure Australia,
- ARC Centre for Complex Systems,
- National ICT Australia.

In SEIT, researchers currently produce in excess of 350 research publications annually. The external research income in 2010 was more than \$A2 million.

REPORTING RELATIONSHIPS

The appointee will report to Professor Ian Petersen during the tenure period.

PRINCIPAL ACCOUNTABILITIES

- Conduct of quality research judged against success in publication, research student supervision and success in obtaining competitive research grants.
- Regular availability to students who may be both on and off campus.
- Conduct effective administrative tasks as directed by the Head of School.
- Cooperate with the employer and comply with all relevant legislation and UNSW@ADFA health and safety policies, procedures and instructions.

Work and act safely and take all reasonable care to protect personal health and safety of others.

MINIMUM EDUCATION REQUIRED

PhD, or equivalent in an appropriate area of Engineering, Mathematics or Physics.

SELECTION CRITERIA

- PhD, or equivalent in Engineering, Mathematics or Physics.
- An ability to undertake internationally competitive research, demonstrated by achievement across the following:
 - Publication
 - Funding
- Supervision of research projects, preferably including higher degree research students
- Ability and experience in teaching at the university level
- Ability to add to the School's current expertise in research and teaching in the area of Control Theory with an emphasis on control theory research in the areas of Quantum Control, Stochastic Control, Consensus, Multi-agent Systems or Mean Field Theory.
- An ability and willingness to contribute to aspects of School and Faculty administration as required
- Demonstrated academic leadership
- An ability to communicate well in English, both orally and in writing and including demonstrated listening skills
- A knowledge and understanding of equity and diversity and OHS procedures and practices

All criteria are essential.