There are many reasons why studying telecommunications research at UniSA's Institute for Telecommunications Research (ITR) is the right choice.

ITR is Australia's largest university-based research institute specialising in research, education and technology development for wireless communications with fixed, mobile, satellite and terrestrial applications. We strongly value technology transfer and continually strive to leverage basic research outcomes. With established industry partnerships, ITR has an excellent reputation for developing and commercialising new technologies.

Offering a wide range of research topics, ITR provides students with an excellent research environment and opportunities to visit international research groups. Researchers at ITR are active at the forefront of their fields, engaging internationally and locally with end users, industry, government and other research organisations.

ITR research falls into four main areas:

- Satellite communications
- High speed data communications
- Flexible radios and networks; and
- Computational and theoretical neuroscience.

Students at ITR are offered opportunities to work on some of the most exciting problems and challenges in modern telecommunications. Graduates are highly sought after by employers in both academia and industry.

With access to scholarships, coupled with affordable living in Adelaide, South Australia, students are attracted to our international reputation in research and teaching excellence. You will automatically be part of a global network of academic, industry and commercial partners at the forefront of the telecommunications field.

Applications for our programs are taken all year round. Further details can be found at www.itr.unisa.edu.au/study
SATELLITE COMMUNICATIONS
Research and development in this area is delivering technical innovations for application across diverse industries finding solutions for economic, environment and national security issues. The Broadband Global Area Network delivered by the Inmarsat-4 generation of satellites uses technology developed by ITR. We are currently developing a space based wireless sensor network and our researchers have designed ontology-based conceptual payload designs for software defined radio platforms. Real-world solutions with real impact to the way businesses operate are being created today by our researchers.

HIGH SPEED DATA COMMUNICATIONS
While fibre-based links provide most of our wired communications for fixed terminals, there is a growing demand for gigabit wireless communications to replace traditional fixed terminal applications, provide higher speed connectivity to mobile terminals or enable information rich services to remote areas with limited fibre infrastructure.

Research and development activities in this specialist area focus on indoor wireless communications, gigabit satellite communications and Free Space Optical Communications. ITR is taking optical communications into a new era successfully testing on a 12km range in an industry currently operating at only 3-4kms. In an environment that can offer a much safer and more secure transmission, this is an exciting area to be involved with.

FLEXIBLE RADIOS AND NETWORKS
Be it wireless broadband or broadcast television, different communications technologies and networks suit different applications. However their goals are all the same: simple, scalable and sustainable networks with seamless interconnectivity for users.

The activity in this area represents a range of pure fundamental and applied research as well as technology development. Areas of interest include reliable transmission for wireless control, source coding and compression of distributed data, physical layer security, energy-efficient transmission, and software defined radio for satellite and terrestrial applications.

COMPUTATIONAL AND THEORETICAL NEUROSCIENCE
The primary aim of the research in this area is to explain how electrical and chemical signals are used in the brain to both represent and process information. The research applies engineering approaches to answer fundamental scientific questions about information processing in neurobiology. The ultimate aim is to develop new methods for biologically inspired artificial intelligence.

Further information on the research being undertaken at ITR can be found at www.itr.unisa.edu.au/research

July 2013

Further Information

Program code: LPRI (PhD) LMRI (Masters)
Duration: 3 years PhD, 2 years Masters
Closing Date: Applications are accepted all year round.
Location: Mawson Lakes
Fees: For domestic students this program is Commonwealth supported.
Scholarships: UniSA offers more than 100 tax-free research scholarships each year. For more information visit www.itr.unisa.edu.au/study/scholarships

English language requirements
Overall International English Language Testing System (IELTS Academic) entry level score is 6.5, with a minimum of 6.0 in each sub-score test (reading, writing, listening, speaking), obtained within the last 2 years prior to the date of application.

How to apply
For further information about UniSA’s Institute for Telecommunications Research please contact:
Phone: +61 8 8302 3769
email: itrstudent@unisa.edu.au
www.itr.unisa.edu.au/study

As a researcher and postgraduate student, my experience with ITR greatly enhanced my professional capability. ITR offered an excellent academic environment and critical mass for researchers with frequent inter-university and international exchanges.

Dr Weimin Zhang, DSTO