

Studentship for Joint PhD Programme

A studentship is available for a joint PhD programme of the University of Liverpool, UK and Xi'an Jiaotong Liverpool University (XJTLU), Suzhou, China. The PhD candidate is expected to start in September/October 2015. The student will be registered as an off-campus PhD student of the University of Liverpool and will be expected to carry out the major part of the research at XJTLU. He/she will also have the opportunity to carry out part of the research work in Liverpool. **The student will be awarded a PhD degree by the University of Liverpool** upon successful completion of the programme and submission of an approved doctoral thesis.

Supervisors

Dr. Xu (Judy) Zhu (The University of Liverpool)

Dr. Eng Gee Lim (Xi'an Jiaotong-Liverpool University)

Funding

The PhD studentship is available for three years subject to satisfactory progression and performance by the student. The award covers tuition fees for three years (equivalent to RMB 80,000 per annum currently) and also provides a monthly stipend of 3500 RMB, conditional upon undertaking a teaching assistant role at XJTLU. The expectation is that students on scholarships will undertake 300-500 hours of TA work per year.

Funds are also available for attending the international conferences.

Project Description

Enhanced Positioning assisted Resource Allocation for Next Generation Wireless Communication Networks

The next generation wireless communication networks are required to accommodate much more users with a data rate of 1000 times higher than that of the current network. However, radio resources (power, time and frequency) in a network are limited and expensive. Also, network performance is highly dependent on mobile users' locations.

This research is aimed to develop enhanced positioning methods with high accuracy and low power consumption and combine them with dynamic resource allocation in next generation wireless networks. A SIM card based positioning method will be developed utilising received signal strength. It does not require extra hardware installation in networks and consumes much less power than GPS. The moving speed and direction of a mobile terminal will also be taken into account to enable location prediction. Using the positioning results, dynamic resource allocation schemes will be developed to enable joint optimisation of multiple performance metrics such as energy efficiency and quality of user experience. Distributed optimisation algorithms will be developed to handle the "big data" and reduce the computational load of the network.

Project deliverables include scientific publications and a demo system. The developed system is expected to enhance the network throughput, energy efficiency and spectral efficiency over existing wireless communication networks by at least 10%.

Requirements

1st Class Bachelor's degree or Master degree in Electrical and Electronic Engineering or related subjects

English: IELTS overall score 6.5 or above with no component score lower than 6.0

How to apply

REF: PHD-COMZHU/WWW

Application Closing Date: 31 October 2015

Please send your CV, a copy of your degree certificates, academic transcripts and English language test certificate, and a 1-page research proposal to Dr. Xu Zhu (xuzhu@liverpool.ac.uk). Please indicate whether you have met the English language entry requirement. Please quote REF PHD-COMZHU/WWW in your email subject.