PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Dr. Limin Yu (XJTLU) Co-supervisor: Prof. Yutao Yue (JITRI) Co-supervisor: Prof. Fei Ma (XJTLU) Co-supervisor: Dr. Linglong Yuan (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	High Precision Doppler Analysis with Wavelet Neural Networks
Contact	Please email limin.yu@xjtlu.edu.cn (XJTLU principal supervisor's email address) or yueyutao@idpt.org (JITRI supervisor's email) with a subject line of the PhD project title

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Signal Processing, Telecommunications, Computer science and Machine Learning. Evidence of good spoken and written English is essential. The candidate should have an IELTS score of 6.5 or above, if the first language is not English. This position is open to all qualified candidates irrespective of nationality.

Degree:

The student will be awarded a PhD degree from the University of Liverpool (UK) upon successful completion of the program.

Funding:

This PhD project is a collaborative research project between XJTLU (http://www.xjtlu.edu.cn) in Suzhou and JITRI (Jiangsu Industrial Technology Research Institute) Institute of Deep Perception in Wuxi. The student will be registered as an XJLTU PhD student but is expected to carry out the major part of his or her research at the Institute in Wuxi.

The PhD studentship is available for three years subject to satisfactory progress by the student. The award covers tuition fees for three years (currently equivalent to RMB 80,000 per annum). In addition, during the period of undertaking main research at institute in Wuxi , the PhD candidate will be provided with monthly living allowance at a standard of 3000-7000RMB by JITRI Institute of Deep Perception.

Project Description:

An important physical phenomenon of wave propagation feathered in most wireless communication systems is the multipath. Given the fact that echo signal through different multipath experiences different fading, delay and Doppler scaling, we would be able to acquire target information from more sources, on condition that we could separate the multipath signals. In this project, the goal is to take multipath as an advantage by resolving the multipath and then combine the multipath to improve the processing gain in target detection. Novel wavelet theory which utilizes intrinsic relation between Doppler effect and multipath signal scaling provides a promising neat solution. Rational orthogonal wavelet (ROW) facilitates a flexible partition of the time-scale space with an ultra-fine resolution. By decomposing the multipath signals into orthogonal scale domain with a broadband ROW filter bank, the features in the subspaces could be fed to a lightweight neural network for optimal fusion. The proposed detection framework is expected to achieve multipath resolving in noisy rich scattering scenarios with low SNR. The weak signal detection capability also facilitates more instantaneous target acquisition.

ROW

For more information about doctoral scholarship and PhD programme at Xi'an Jiaotong-Liverpool University (XJTLU): Please visit

http://www.xjtlu.edu.cn/en/study-with-us/admissions/entry-requirements

http://www.xjtlu.edu.cn/en/admissions/phd/feesscholarships.html

Supervisor Profile:

Principal Supervisor:

Link of Profile: _____

_____

JITRI co-supervisor:

Link of Profile: http://www.idpt.org

Yutao Yue 岳玉涛 **Institute of Deep Perception Institute** 深度感知技术研究所所长

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How to Apply:

Interested applicants are advised to email: limin.yu@xjtlu.edu.cn (XJTLU principal supervisor's email address) or yueyutao@idpt.org the following documents for initial review and assessment (please put the project title in the subject line).

- CV
- Two reference letters with company/university letterhead
- Personal statement outlining your interest in the position
- Proof of English language proficiency (an IELTS score of 6.5 or above)
- Verified school transcripts in both Chinese and English (for international students, only the English version is required)
- Verified certificates of education qualifications in both Chinese and English (for international students, only the English version is required)
- PDF copy of Master Degree dissertation (or an equivalent writing sample) and examiners reports available