**PhD studentship (Full-time)**

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| Institution | Xi'an Jiaotong-Liverpool University, China |
| Department | CSSE |
| Supervisors | Principal supervisor: Prof. Ka Lok Man (XJTLU, SAT)<br>Co-supervisor: Prof. Yutao Yue ( JITRI)<br>Co-supervisor: Prof. Eng Gee Lim (XJTLU, SAT)<br>Co-supervisor: Prof. Jeremy Smith (UoL, EEE) |
| Application Deadline | Open until the position is filled |
| Funding Availability | Funded PhD project (world-wide students) |
| Project Title | Development of new machine-learning models in radar signal processing and target detection and recognition |
| Contact | Please email ka.man@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 Computer Science/Electrical Engineering/Electronic Engineering/Computer Engineering.

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 ( http://www.idpt.org/) 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. Tripartite agreement will be signed among student, XJTLU and institute.

The PhD scholarship 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) and provides an annually stipend at a standard around 60,000 RMB as a contribution to living, meal and accommodation allowance.

**Project Description:**

With the advancement of machine learning and radar technology, the application of machine learning in the field of radar is becoming wider and deeper. The steps of radar scanning, signal acquisition and processing, radar image recognition, radar tracking and guidance are all integrated into machine learning technology. The most important problem in radar target recognition is the selection of target features. Excellent features can greatly reduce the difficulty of recognition work, but how to obtain highly recognizable target feature data from limited data samples is a difficult problem. In addition, the scene of radar target recognition is complex and changeable, and the types of recognition objects are also complicated. In the existing recognition algorithms, it is often necessary to design different recognition algorithms for feature extraction for different features of different recognition targets, and the results of feature extraction play a key role in the accuracy of the final algorithm. This topic studies the development of new machine learning models in the process of radar signal processing, target detection and recognition. The important meaning is to find a feature extraction model that can be widely applied to a variety of radar targets and scenarios through the powerful adaptive learning ability of machine learning technology, and the deep network combines feature extraction and target recognition to obtain an integrated learning and classification model.

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:**

Ka Lok Man is currently a Professor in the School of Advanced Technology at Xi'an Jiaotong-Liverpool University (XJTLU) in Suzhou, China and an Adjunct Professor in the Faculty of Engineering and Science, Swinburne University of Technology Sarawak, Malaysia. He is also a senior research scientist at the Baltic Institute of Advanced Technologies, Lithuania and a Visiting Professor at imec-DistriNet, KU, Leuven, Belgium.He has about 20 years of international teaching experience, several years of

industrial experience in integrated circuit design and has been involving in many industry-oriented research projects in Microelectronics and Computer Science, many of them in cooperation with STMicroelectronics, Synopsys and LG. He has a good publication record and to date has more than 500 published academic articles. Also, he has received more than 50 international research awards and fellowships.

Ka Lok Man has become a well-established international researcher within a number of related areas, including formal methods, process algebras, hybrid systems, cyber physical systems, recommendation systems, data analytics, low power integrated circuits, wireless sensor networks & communication, IoT, photovoltaic & battery management systems and signal processing. Currently, he is supervising/co-supervising about 20 PhD students, 3 MSc students, a number of UG students and research assistants in the areas of solar energy, wireless sensor networks, communication, middleware, IoT, signal processing, data mining, machine learning, deep learning, cloud computing and image/video identification.

**JITRI co-supervisor:**
Yutao Yue received his B.S. degree of applied physics from University of Science and Technology of China in 2004, Ph.D. degree of computational physics from Purdue University in 2010. He then served as senior scientist of Kuang-Chi Institute, team leader of Guangdong "Zhujiang Plan" Introduced Innovation Scientific Research Team, and associate professor of Southern University of Science and Technology of China, etc. He has authored 17 papers and over 300 patents, and advised 13 postdoc researchers. He also serves as the "Industrial Professor" of Jiangsu Province, advisory panel member of SAIIA, technical review expert of Guangdong, Jiangsu, Shenzhen, and Wuxi. He is now the founder and director of Institute of Deep Perception Technology (IDPT), Jiangsu Industrial Technology Research Institute (JITRI). His research interests include modeling and optimization, computational electromagnetics, radar perception, artificial intelligence theories.

**How to Apply:**
Interested applicants are advised to email ka.man@xjtlu.edu.cn (XJTLU principal supervisor's email address) or yueyutao@idpt.org (JITRI supervisor's email) 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