

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Dr. Qing Liu (XJTLU) Co-supervisor: Professor Jimin Xiao (XJTLU) Co-supervisor: Professor Xiaowei Huang (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Cuffless Blood Pressure Estimation by Fusing Information from Multimodal Wearable Sensors
Contact	Please email qing.liu@xjtlu.edu.cn with a subject line of the PhD project title. The principal supervisor's profile is linked here: https://www.xjtlu.edu.cn/en/departments/academic-departments/communications-and-networking/staff/qing-liu The co-supervisor's profiles are linked here: https://www.xjtlu.edu.cn/en/departments/academic-departments/electrical-and-electronic-engineering/staff/jimin-xiao https://www.liverpool.ac.uk/computer-science/staff/xiaowei-huang/

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Electronic Engineering, Information Engineering, Computer Science, Biomedical Engineering, Communications, Applied Mathematics or related programmes.

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:

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).

It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. The scholarship holder is expected to carry out the major part of his or her research at XJTLU in Suzhou, China. However, he or she is eligible for a research study visit to the University of Liverpool up to six months, if this is required by the project.

Project Description:

Continuous measurement and effective management of blood pressure (BP) is the key for the prevention and control of cardiovascular diseases, while state-of-art BP meters based on inflatable cuffs can only provide snapshots of BP. Alternatively, wearable cuffless BP measurement techniques based on pulse transit time (PTT) have attracted increasing attention recently. The commonly adopted PTT-based method requires two sensors placed at different arterial sites, resulting in redundant wires and limiting the device form. More importantly, as the PTT-BP relationship was built on an invalid biomechanical model of arterial wall, leading to unsatisfactory/controversial estimation accuracy and hindering the implementations in clinical and real-life scenarios. This project aims to design a single-site prototype integrating multimodal wearable sensors to provide continuous and unobtrusive sensing of physiological signals. Advanced time-frequency signal processing techniques and deep learning methods will be investigated to explore novel features to reveal the instantaneous arterial wall status. Fusion algorithms and transfer learning techniques will be investigated to fuse information from these sensors, and build personalized models to realize continuous and dynamic BP estimation.

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

<https://www.xjtlu.edu.cn/en/admissions/global/entry-requirements/>

<https://www.xjtlu.edu.cn/en/admissions/global/fees-and-scholarship>

How to Apply:

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

- CV
- Two formal reference letters
- Personal statement outlining your interest in the position
- Certificates of English language qualifications (IELTS or equivalent)
- Full academic 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