

PhD studentship (Full-time)



Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of Industrial Design
Supervisors	Principle supervisor: Dr Mengjie Huang (XJTLU, IND Department) Co-supervisor: Dr Rui Yang (XJTLU, CSSE Department) Co-supervisor: Professor Derrick Tate (XJTLU, IND Department) Co-supervisor: Dr Roberto Ferrero (UoL, EEE Department)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Research on Exoskeleton Control System based on Brain-Computer Interface 基于脑机接口的外骨骼控制系统研究
Contact	Please email mengjie.huang@xjtlu.edu.cn 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 Electrical Engineering, Computer Science, Mechatronics, Mathematics or related area. 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) and provides a monthly stipend of 5,000 RMB as a contribution to living expenses. It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. It is a condition of the award that holders of XJTLU PhD scholarships carry out 300-500 hours of teaching assistance work per year. 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 of up to three months, if this is required by the project.

Project Description:

To ensure the safe and reliable operation of exoskeleton, the control system based on brain-computer interface is the premise and foundation, which has been discussed in literature. However, no effective solutions are provided for closed-loop control of the exoskeleton system at present. This project proposes a novel convolutional-recurrent neural network method to realize real-time identification of motor imagery signals, and achieves closed-loop control of the exoskeleton system with multi-mode physiological signals based on EEG data and human-machine interaction forces. The proposed method will be validated by simulation and experiment study with a prototype of rehabilitation exoskeleton. The research results will provide theoretical and technical support for improving the safe and reliable exoskeleton control, and show practical significance and engineering value in the research and development of intelligent exoskeleton with application in rehabilitation and other fields.

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/feescholarships.html>

How to Apply:

Interested applicants are advised to email mengjie.huang@xjtlu.edu.cn 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

Informal enquiries may be addressed to Dr. Mengjie Huang (mengjie.huang@xjtlu.edu.cn), whose personal profile is linked below, <https://www.xjtlu.edu.cn/en/departments/academic-departments/industrial-design/staff/mengjie-huang>