PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Professor Zhijie XU (XJTLU) Co-supervisor: Dr. Yushan Pan (XJTLU) Co-supervisor: Dr. Yangbin Chen (XJTLU) Co-supervisor: Dr. Tulika Saha(UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Self-Supervised Contrastive Learning and Multimodal Fusion for Automatic Speech Tagging in Early Detection of Depression
Contact	Please email Zhijie.Xu@xjtlu.edu.cn (XJTLU principal supervisor's email address) with a subject line of the PhD project title. The principal supervisor's profile is linked here: http://www.xjtlu.edu.cn/en/faculty/ZhijieXu

Requirements:

A Master's degree with Merit or above is required for PhD admissions (UK system). Applicants holding a degree from 985/211/Double First-Class Universities and those with publications are particularly encouraged. Top-tier publications and/or relevant industrial experience are considered advantageous. Candidates holding only a Bachelor's degree and having less than five years of work experience will not be considered for this project.

Evidence of good spoken and written English is essential. The candidate should have an IELTS (or equivalent) 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 99,000 per annum). It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. The scholarship holders are expected to conduct the majority of their research at XJTLU in Suzhou, China. However, they may apply for a short-term research visit to the University of Liverpool if the project requires it.

Project Description:

Depression is a complex psychological disorder, the early sympotoms of which are often hard to detect. Traditional detection methods mainly rely on patients' self-reports and the subjective judgement of clinicians, which are susceptible to the influence of patients' subjective factors and doctor's experience. With the development of speech recognition and machine learning technologies, automatic speech tagging has gradually become an effective means of depression detection. By analysing patients' vocal features, such as intonation, speech rate, and pauses, differences between individuals with depression and the general population can be identified, thereby enabling early detection.

Objectives:

1. Utilising self-supervised contrastive learning models, we conduct unsupervised learning on a vast amount of speech data to extract distinctive vocal features. Through contrastive learning, the model will be able to learn the similarities and differences among various vocal features, thus more effectively identifying the vocal characteristics of individuals with depression.
2. Integrating vocal features with data from other modalities(such as facial expressions and physiological signals) to fully leverage the advantages of multimodal information.
3. Develop an automatic speech tagging system capable of automatically labeling and analysing speech data.

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 zhijie.xu@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