PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	Academy of Artificial Intelligence and Advanced Technology
Supervisors	*Please list all the names in the supervisory team. It should be consistent with the information on your approved PGRS proposal.* Principal supervisor: Professor/Dr Jieming Ma (XJTLU) Co-supervisor: Professor/Dr Dawei Liu (XJTLU) Co-supervisor: Professor/Dr Martin Gairing (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Uncertainty-Aware Time-Frequency Electricity Price Forecasting
Contact	Please email Jieming.Ma@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: https://scholar.xjtlu.edu.cn/en/persons/JiemingMa/

Requirements:

A Master's degree with Merit and a Bachelor's degree with first-class or upper second-class honors are required for PhD admissions. Exceptional candidates holding only a Bachelor's degree may be considered on an individual basis in certain disciplines.

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:

Electricity prices in renewable-dominated markets exhibit multiscale non-stationarity, regime switching, and volatility clustering, posing significant challenges for reliable forecasting. Existing approaches often prioritize point accuracy while neglecting structured uncertainty and frequency-dependent dynamics. This PhD project develops an uncertainty-aware time-frequency modelling framework that formalizes electricity prices as a regime-sensitive stochastic process with decomposable variance structures. Adaptive multiscale representations are integrated with large-scale temporal pretraining to enhance robustness under distributional shifts and extreme events. A decision-theoretic validation layer further links probabilistic forecasting with risk-sensitive economic strategies. The project advances a principled modelling paradigm bridging stochastic theory, multiscale learning, and decision intelligence for complex energy markets.

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/doctoral/entry-requirement-phd
https://www.xjtlu.edu.cn/en/admissions/doctoral/postgraduate-research-scholarships

How to Apply:

Interested applicants are advised to email Jieming.Ma@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