

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Mathematics and Physics
Supervisors	Principal supervisor: Professor/Dr. Feiyan Chen (XJTLU) Co-supervisor: Professor/Dr. Mattheus Kouwenhoven (XJTLU) Co-supervisor: Professor/Dr. Qinyao Liu (XJTLU) Co-supervisor: Professor/Dr. Yi Zhang (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Research on Identification Methods of Industrial Networked Control System with Multi-rate Characteristics
Contact	Please email feiyang.chen@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://www.xjtlu.edu.cn/en/study/departments/school-of-mathematics-and-physics/foundational-mathematics/departments/academic-staff/staff/feiyang-chen

Requirements:

1. The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in maths, engineering, physics, control science and engineering, etc.
2. Experience in computational maths/control science and engineering (with MATLAB/C++, MATHEMATICA, etc.) will be an advantage.
3. Experience in mathematical modeling of system identification, computational mathematics, process identification will be an advantage.
4. 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.
5. Candidates will be reviewed holistically so those with other skillsets not listed are encouraged to apply.

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 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:

Successful completion of this PhD programme could lead to worldwide career opportunities in academia. This project is aimed at the characteristics of high-dimensional nonlinear data, data missing, multiple kinds of random delay, and the identification modeling difficulties that some key variables cannot measure in industrial networked control system. This project adopts the integration of industrial process mechanism and modern identification modeling to establish the identification modeling theory. Firstly, kernel principal component analysis (KPCA) algorithm is adopted to reduce the dimension and improve the computational efficiency of the algorithm; secondly, aiming at the missing measurement, a dynamic model will be established and the missing measurement will be reconstructed; thirdly, aiming at errors and multi-class random delays, the algorithm based on expectation maximization will be used to improve the convergence speed of the method; finally, building simulation and experimental platform, evaluating and analyzing the effectiveness of modeling method. The supervisors will endeavor to help the candidate work on simple models to initiate the project. The candidate is welcome to propose additional ideas to the project.

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 feiyang.chen@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