

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	International Business School Suzhou
Supervisors	Principal supervisor: Dr. Jianxin Fang (XJTLU) Co-supervisor: Dr. Jianghang Chen(XJTLU) Co-supervisor: Professor Jason Choi (University of Liverpool)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Inventory control and order management policies for assemble-to-order systems under the co-production effect
Contact	Please email jianxin.fang@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/departments/academic-departments/intelligent-operations-and-marketing/staff/jianxin-fang

Requirements:

- The candidate should have a master's degree (or equivalent qualification), in Management Science/Operations Research/Applied Mathematics/Industry Engineering/etc.
- Candidates from Chinese Universities should have a weighted average mark of 75 percent or above (if from a Top 100 university of Shanghai ranking) or 80 percent or above otherwise.
- Evidence of good spoken and written English is essential. The candidate should have an IELTS score of 7 (with a minimum of 6.5 in each component) or equivalent, if the first language is not English. This position is open to all qualified candidates irrespective of nationality.
- The candidate should have strong mathematical modelling and programming skills (e.g., Matlab, Python).
- More details of entry requirements could be found at:
<https://www.xjtlu.edu.cn/en/admissions/doctoral/entry-requirement-phd/>

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). The living expense provided is around RMB 3000-5000 per month based on performance. 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:

This project focuses on how to build mathematical models of the related ATO problems when key components are co-produced, and the system faces stochastic production and demand rates. The project will also design exact and heuristic algorithms for the above problems, and attempt to identify how the co-production effect influences the inventory control and allocation decisions through theoretical and numerical experiments. The specific research problems include:

- Study optimal inventory control and allocation decisions of ATO systems considering stochastic production time, stochastic component production quantity and quality (co-production effect) and stochastic demands.
- Explore how to use component substitution and varying pricing strategies to balance supply and demand under the co-production effect.
- Develop efficient solution strategies and algorithms for the large-scale problems based on (deep) reinforcement learning or approximate dynamic programming.

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 jianxin.fang@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