

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Mathematics and Physics
Supervisors	Principal supervisor: Dr Ran Xu (XJTLU, Financial & Actuarial Mathematics) Co-supervisor: Dr Yi Hong (XJTLU, Financial & Actuarial Mathematics) Co-supervisor: Professor Corina Constantinescu (UoL, Mathematical Sciences)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Optimal dividend and capital injection with practice constraints and risk management restrictions
Contact	Please email ran.xu@xjtlu.edu . with a subject line of the PhD project title. The principal supervisor's profile is linked here: http://www.xjtlu.edu.cn/en/staff-details/staff/ran-xu

Requirements:

1. The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Mathematics, Applied Mathematics, Probability, Statistics, Actuarial Science, Mathematical Finance or related fields with comprehensive training in mathematics.
2. Priority will be given to the candidate with good programming skills in Python.
3. Evidence of good spoken and written English is essential. The candidate should have an IELTS score of **6.5 or above with no less than 6 in both speaking and writing**, 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). 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:

The optimal dividend problem is a hot research topic in the field of actuarial and financial mathematics. How to design a dividend strategy that is consistent with the company's current risk management objective and suitable for the practical operating constraints is an important problem in practice. Based on few practical assumptions, this project intends to study the optimal dividend problem with risk management restrictions. The research results of this project are expected to provide theoretical guidance and technical support to the optimal dividend strategies under the consideration of practical and risk management constraints. To be specific, this project contains 2 main research questions in the field of stochastic optimal control in insurance and finance; each question may be divided into sub-questions with different assumptions or stochastic models. Due to the complexity of the control problems, the project intends to find numerical solutions of them.

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 **ran.xu@xjtlu.edu.cn** 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 if available
- PDF copy of any published or working papers

Informal enquiries may be addressed to Dr Ran Xu (ran.xu@xjtlu.edu.cn) by email.