

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Maths and Physics
Supervisors	<p><i>Please list all the names in the supervisory team. It should be consistent with the information on your approved PGRS proposal.</i></p> Principal supervisor: A/Prof. Andrew Fowlie (XJTLU) Co-supervisor: Prof. M.B.N. Kouwenhoven (XJTLU) Co-supervisor: Dr. Juri Smirnov (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Bayes factor surface for searches for new physics
Contact	Please email andrew.fowlie@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://andrewfowlie.github.io/

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in physics, statistics, data science or a related field. 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.

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:

We recently proposed the Bayes factor surface [Eur. J. Phys. C; arXiv:2401.11710] - a novel way to present results from experimental searches for new phenomena. Bayes factor surfaces indicate the strength of evidence for or against models relative to a null hypothesis that there is no new phenomena. They provide a clear and direct measure of evidence, may be easily reinterpreted, but do not depend on choices of prior or parameterization. Lastly, they build a bridge between testing and measurement, which is otherwise missing in Bayesian inference. This tool thus could transform the way results are presented and communicated in any scientific discipline. The successful candidate will develop and test efficient and reliable computational methods for the Bayes factor surface, and explore applications of the Bayes factor surface throughout science.

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 andrew.fowlir@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