PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Science
Supervisors	Principal supervisor: Dr Chun Chan (XJTLU) Co-supervisor: Professor Jia Meng (XJTLU) Co-supervisor: Professor Dan Rigden (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Investigation of Genome Editing Events by Fanzor through Molecular Dynamics and Machine Learning
Contact	Please email Chun.Chan@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: http://www.xjtlu.edu.cn/en/faculty/ChunChan

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in *Bioinformatics, Biophysics, Molecular Biology, Physical Chemistry, Computer Science or other relevant disciplines*

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 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:

The discovery of Fanzor, a novel class of programmable RNA-guided DNA endonucleases found in eukaryotes, has opened up new venue for precise genome editing. Fanzor can produce various DNA cleavage patterns, making it a promising tool for precise genetic modifications with applications across basic research, biotechnology, and medicine. However, the detailed molecular mechanisms that govern Fanzor's function, as well as the factors that influence its editing efficiency and specificity, remain poorly understood. This project aims to bridge these knowledge gaps by employing a computational approach that combines molecular dynamics (MD) simulations, free energy calculations, and machine learning (ML). This research holds immense promise for advancing genome editing technologies, leading to more efficient and precise tools that can revolutionize genetic research, biotechnology applications, and the development of targeted gene therapies. We welcome applicants from diverse academic backgrounds who are passionate about contributing to cutting-edge scientific advancements. Joining our dynamic research team offers the opportunity to make a significant impact in the field of genome editing and to collaborate with experts dedicated to unlocking the full potential of these genome editing toolkits.

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 Chun.Chan@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