

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Science
Supervisors	Principal supervisor: Dr Francesco Zonta (XJTLU) Co-supervisor: Professor Jia Meng (XJTLU) Co-supervisor: Dr Chun Chan (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	Use of Machine Learning and Molecular Dynamics simulation for the prediction of RNA structures in mRNA vaccine design.
Contact	Please email francesco.zonta@xjtlu.edu.cn with a subject line of the PhD project title. The principal supervisor's profile is linked here: https://scholar.xjtlu.edu.cn/en/persons/FrancescoZonta

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification) in Bioinformatics / Physics / Computer Sciences / Applied Mathematics / Computational Chemistry

Evidence of good spoken and written English is essential. The candidate should have an IELTS score of 6.5 or above and no bands below 5.5, 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:

The rapid development of mRNA-based therapeutics, particularly mRNA vaccines, has transformed the landscape of infectious disease prevention and treatment. This project proposes developing a generative AI framework for mRNA vaccine design that leverages advanced molecular simulations to generate high-quality structural and dynamical data, ultimately accelerating the development of safe and effective mRNA vaccines. The proposed framework has the potential to make significant contributions to mRNA therapeutics and vaccine development, enabling the rapid development of effective vaccines and improving global public health.

The ideal candidate has experience in at least one of the following fields: Artificial Intelligence and Machine Learning, Molecular Simulations, RNA structure, Monte Carlo methods, Simulation of Biological Systems. The candidate should be familiar with at least one computer programming language (Python, C, C++, etc.) and be able to carry on the simulation part of the project independently.

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 francesco.zonta@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 available