

## PhD studentship (Full-time)



Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of Computer Science and Software Engineering (CSSE).
Supervisors	<i>Please list all the names in the supervisory team. It should be consistent with the information on your approved RDF proposal.</i> Principle supervisor: Dr Jieming Ma (XJTLU, CSSE Dept.) Co-supervisor: Professor Ka Lok Man (XJTLU, CSSE Dept.) Co-supervisor: Professor Kaizhu Huang (XJTLU, EEE Dept.) Co-supervisor: Dr Yihua Hu (UoL, EEE Dept.)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	FPGA-Based Multi-Field Power Optimization Method for Photovoltaic Systems 基于 FPGA 的多领域光伏功率优化方法研究
Contact	Please email Jieming.ma@xjtlu.edu.cn (XJTLU principal supervisor's email address) with a subject line of the PhD project title

### **Requirements:**

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Computer Science or Electronic Engineering. 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 80,000 per annum) and provides a monthly stipend of 3500 RMB as a contribution to living expenses. It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. It is a condition of the award that holders of XJTLU PhD scholarships carry out 300-500 hours of teaching assistance work per year. 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 of up to three months, if this is required by the project.

### **Project Description:**

The challenge in photovoltaic (PV) system is maximizing the conversion efficiency, due to climate changing and partial shading conditions. Conventional methods normally assume that the electrical data are identically and independently distributed (i.i.d.). However, different shading patterns result in various electrical characteristics, indicating the i.i.d. assumption is violated. This project focuses on the optimization problem of a PV system under complicated environmental conditions. Its main work is divided into three parts: 1) quantitatively analyzing the PV output characteristics and studying style normalization transformation, which converts the “multi-style” characteristic data into independent identically distributed “single style” data; 2) constructing a multi-field power optimization model, where “new style” data are learned by a transductive learning algorithm; 3) implementing the proposed method on FPGA. The new method is amenable to FPGA implementation and is optimized for latency. Experimental results are presented to show the feasibility and efficiency of the proposed method.

For more information about doctoral scholarship and PhD programme at Xi’an Jiaotong-Liverpool University (XJTLU): Please visit

<http://www.xjtlu.edu.cn/en/study-with-us/admissions/entry-requirements>

<http://www.xjtlu.edu.cn/en/admissions/phd/feescholarships.html>

### **How to Apply:**

Interested applicants are advised to email Jieming.ma@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 reference letters with company/university letterhead
- Personal statement outlining your interest in the position
- Proof of English language proficiency (an IELTS score of 6.5 or above)
- Verified school 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)

**Informal enquiries** may be addressed to Dr. Jieming Ma (Jieming Ma@xjtlu.edu.cn), whose personal profile is linked below,

<http://www.xjtlu.edu.cn/en/departments/academic-departments/computer-science-and-software-engineering/staff/jieming-ma>