# **Curriculum Vitae**



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#### **EDUCATION**

**PhD** Hohai University, Hydrology and Water Resources

Supervisor: Prof. Dr. Chuanhai Wang

The University of Melbourne, Environmental Hydrology and Water Resources

Supervisor: Prof. Dr. O J Wang

MS Hohai University, Hydrology and Water Resources

June 2022

June 2026

Date of Birth: 10 Jan 1998

Email: jiabolu@hhu.edu.cn

Supervisor: Dr. Xiaohua Xiang

Successive postgraduate and doctoral programs of study

**BS** Hohai University, Hydrology and Water Resources Engineering

June 2020

Graduated Summa Cum Laude

#### RESEARCH INTERESTS

- 1. Flood inundation prediction
- 2. Surrogate model
- 3. Hydrological modelling and forecasting

#### **PUBLICATIONS**

#### Journal Publications

**Lu, J.**, Wang, Q.J., Fraehr, N., Xiang, X.\*, Wu, X., 2025. Choice of Gaussian Process kernels used in LSG models for flood inundation predictions. J. Hydrol. 655, 132949. <a href="https://doi.org/10.1016/j.jhydrol.2025.132949">https://doi.org/10.1016/j.jhydrol.2025.132949</a> (SCI Q1)

**Lu, J.**, Yin Z., Xiang X.\*, Wu X.. Research on 1D Hydrodynamic Reduced Order Model[J]. Journal of Basic Science and Engineering, 2024, 32(5): 1253-1264.

https://dx.doi.org/10.16058/j.issn.1005-0930.2024.05.004 (in Chinese) (EI Compendex)

**Lu, J.**, Xiang, X.\*, Li, C., et al. Research on Data Structure of General Hydrological Model in GIS [J]. Water Resources Protection, 2021, 37(5): 89-93. http://dx.doi.org/10.3880/j.issn.1004-6933.2021.05.014 (in Chinese) (EI Compendex)

#### Patent

Xiang, X., Wu, X., **Lu, J.**, et al. (2023). A method for extracting river network catchment areas based on the static water balance principle [Patent No. CN202211541617.5]. Jiangsu, China.

## **Conference Papers**

**Lu J B**, Xiang X H\*, A river network polygon extraction algorithm based on hydrodynamic and Monte Carlo method, 5<sup>th</sup> International Symposium of Shallow Flows, Oct. 23-25, 2021, pp. 293-297.

**Lu J B**, Xiang X H\*, Research on estimating the discharge through gates of the South-to-North Water Diversion Middle Route Project (in Chinese), 2020 Academic Innovation Forum of "Water Science Frontier and Technology" for postgraduate students in Jiangsu Province, Nov. 7-8, 2020, pp. 39.

#### RESEARCH EXPERIENCE

### **Hydrology and Water Resources Lab**

2023-Now

Supervisor: Prof. Dr. Q J Wang

- Improving flood inundation predictions through kernel-based enhancement of surrogate models
- Rapid prediction of water surface elevation in flood inundation modelling
- Rapid prediction of flow velocity in flood inundation modelling using a novel statistical approach

## Plain River and Lake Hydrology Research Center, Nanjing

2020-Now

Supervisor: A/Prof. Dr. Xiaohua Xiang

- Implemented SCE-UA algorithm in C++ for calibrating Xin'anjiang hydrological model
- Quantified model uncertainty by GLUE and MCMC algorithms
- Backbone river network extraction method based on graph theory and maximum flow algorithm
- Built flood inundation model for flood storage basin using ArcHIGH
- Reduced order of 1D hydrodynamic model by POD and DEIM

### **Department of Hydrology and Water Resources Engineering**, Nanjing 2016 to 2020

• Realized Xin'anjiang model with MATLAB, and calibrated parameters with PEST++

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## College of Hydrology and Water Resources, Hohai University

- Solved multi-objective reservoir operation model by DE algorithm
- Established a 1D river hydrodynamic model based on Saint-Venant equations

### **ONGOING PROJECTS**

## Intelligent flood control forecast and operation system of Wangying Reservoir

- Rainfall and runoff forecasting with Xin'anjiang model and HBV model
- Constructed reservoir flood control optimal operation model

## Development of river network hydrodynamic prediction subsystem

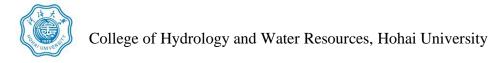
- Developed flood inundation analysis models for four floodplains in Haihe watershed
- Developed a 1D Hydrodynamic model for flood routing

### Hangzhou informatization dispatching model

- Data cleaning for water level and rainfall data from 2013 to 2021 by Python
- Constructed a hydrodynamic model of the Hangzhou river network

## HONORS AND AWARDS

Communication Activity Leader 2025 Awarded by Discipline of Environmental hydrology and Water Resources, UniMelb	
PhD Academic Scholarship Awarded by Hohai University	2024
Outstanding Team of Summer Social Practice Awarded by Hohai University	2023
Outstanding Presenter, 11th Graduate Academic Forum Awarded by Hohai University	2022
Outstanding Postgraduate Awarded by Hohai University	2021
First Prize in Water Science Numerical Simulation Innovation Competition Flood progression and gate control model	2020
Academic Excellence Scholarship Awarded by Hohai University	2019
National Scholarship Awarded by the Ministry of Education	2018
Excellent Student Award Awarded by Hohai University	2017



#### LANGUAGES

Mandarin: Native Language

**English**: College English Test-6 Qualified

#### **COMPUTER SKILLS**

**Programming**: C/C++, Python, MATLAB

**Applications**: Microsoft Office, Microsoft Visual Studio, ArcGIS, HEC-RAS

**Platforms**: Windows, Linux

#### **OTHER**

Interests/Hobbies: Programming, Reading, Writing

Citizenship: Chinese

#### **SUPERVISOR INFORMATION**

#### A/Prof. Dr. Xiaohua Xiang

College of Hydrology and Water Resources

Hohai University

1 Xikang Road, Nanjing, P. R. China 210098

Email: xxhxiang@hhu.edu.cn

Research interests: Hydrodynamic model, GIS, Hydrology

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## Prof. Dr. Q J Wang

Department of Infrastructure Engineering

The University of Melbourne

Parkville, Victoria 3010, Australia

Email: quan.wang@unimelb.edu.au

Research interests: Hydrological modelling and forecasting

Google Scholar

## Prof. Dr. Chuanhai Wang

College of Hydrology and Water Resources

Hohai University

1 Xikang Road, Nanjing, P. R. China 210098

Email: <a href="mailto:chwang@hhu.edu.cn">chwang@hhu.edu.cn</a>
Research interests: Hydrology

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## REFERENCES

## A/Prof. Dr. Xiaoling Wu

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