



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. Q J Wang | June 2026 |
| MS | Hohai University, Hydrology and Water Resources
Supervisor: Dr. Xiaohua Xiang
Successive postgraduate and doctoral programs of study | June 2022 |
| BS | Hohai University, Hydrology and Water Resources Engineering
Graduated Summa Cum Laude | June 2020 |

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. <https://doi.org/10.1016/j.jhydrol.2025.132949> (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, 5th 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++



- 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 2024

Awarded by Hohai University

Outstanding Team of Summer Social Practice 2023

Awarded by Hohai University

Outstanding Presenter, 11th Graduate Academic Forum 2022

Awarded by Hohai University

Outstanding Postgraduate 2021

Awarded by Hohai University

First Prize in Water Science Numerical Simulation Innovation Competition 2020

Flood progression and gate control model

Academic Excellence Scholarship 2019

Awarded by Hohai University

National Scholarship 2018

Awarded by the Ministry of Education

Excellent Student Award 2017

Awarded by Hohai University



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

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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

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Hohai University

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Research interests: Hydrology

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REFERENCES

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