# Curriculum Vitae

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## EDUCATION

**PhD** Hohai University, Hydrology and Water Resources Expected graduation June 2026
Supervisor: Prof. Dr. Chuanhai Wang

**MS** Hohai University, Hydrology and Water Resources June 2022
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 forecasting and uncertainty quantification
2. Reservoir optimization and control
3. Numerical model for flood propagation

## PUBLICATIONS

### *Journal Publications*

**Lu J B**, Xiang X H*, Li, C, et al. Research on Data Structure of General Hydrological Model in GIS (in Chinese) [J]. Water Resources Protection, 2021, 37(5): 89-93.

### *Journal Papers in Review*

**Lu J B**, Yin Z J, Xiang X H*, et al. Research on one-dimensional hydrodynamic reduced order model (in Chinese), Accepted by Journal of Basic Science and Engineering.

***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

**Plain River and Lake Hydrology Research Center**, Nanjing 2020-Now
Supervisor: 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

**Development of river network hydrodynamic prediction subsystem**

- Developed a 1D Hydrodynamic model for flood routing in MATLAB
- Learned to use urban storm flood model SWMM

**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

**Digital twin watershed of Weihe**

- Extracting river network system and setting relationship between river channels
- Simulating runoff processes in reservoir area and outlet
- Multi-objective optimal scheduling of flood control for reservoir groups

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

- Rainfall and runoff forecasting with Xin'anjiang model
- Simulated the river flow downstream of the reservoir
- Constructed reservoir flood control optimal operation model

## HONORS AND AWARDS

**Outstanding Postgraduate** 2021
Awarded by Hohai University

**First Prize in Water Science Numerical Simulation Innovation Competition** 2020
Flood progression and gate control model

**National Scholarship** 2018
Awarded by the Ministry of Education

## LANGUAGES

**Chinese**: 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

## OTHER

Interests/Hobbies: Programming, Hiking
Citizenship: Chinese

## SUPERVISOR INFORMATION

**Prof. Dr. Chuanhai Wang**
College of Hydrology and Water Resources
Hohai University
1 Xikang Road, Nanjing, P. R. China 210098
Email: chwang@hhu.edu.cn
Profile: Hydrodynamic model, GIS, Hydrology
Research Gate

## REFERENCES

**Dr. Xiaohua Xiang**, Associate Professor
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