

WANG JIAJUN

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🎓 EDUCATION

Paris-Saclay University, Paris, France

Sep. 2024 – Sep. 2026

Master in Mathematics and Applications (Analysis, Modeling, Simulation)

Main Courses: PDEs Analysis (non-coercive, Inverse problem), Numerical Methods for PDEs (FEM, BEM), Optimization (Finite Dimension, Infinite Dimension (ODEs, PDEs constraints)), HPC (CPU, GPU)

Jiangnan University, Wuxi, China

Sep. 2020 – Jun. 2024

Bachelor in Information and Computational Science (Math-focused) Rank: 8 / 96

Main Courses: Mathematical Analysis, Numerical Analysis, Data Structures and Algorithms, Data Mining and Machine Learning, Intelligent Optimization Methods

🔬 RESEARCH EXPERIENCE

Shape Optimization for Hydrodynamic Resistance in Stokes Flow

Apr. 2026 – Sep. 2026

Research Internship, Laboratoire des Sciences du Numérique de Nantes, CNRS, France

- Studied shape optimisation methods for Stokes flow and hydrodynamic resistance.
- Implemented a new optimisation approach using the Rodin FEM library.

Optimization Methods for Direction-of-Arrival Estimation

Mar. 2024 – Dec. 2024

Research Internship, School of Science, Jiangnan University, China

- Investigated numerical optimization for high-resolution signal processing.
- Developed a more stable and accurate estimation scheme.
- Contributed to model design and numerical evaluation.

Robust Low-Rank Modeling and Sparse Noise Removal

Mar. 2023 – May. 2024

Research Internship, School of Science, Jiangnan University, China

- Studied low-rank matrix recovery for signal decomposition.
- Designed an iterative method improving robustness to noise.
- Led experiments and manuscript writing.

Parameter Identification of First-order RC Equivalent Circuit Model

Sep. 2022 – Mar. 2023

Undergraduate Innovation Research Project, School of Science, Jiangnan University, China

- Identified parameters of simplified battery circuit models via numerical optimization.
- Performed data analysis and simulation validation.
- Designed the identification algorithm and wrote the manuscript.

📄 PUBLICATIONS

Journal Articles

- Xie, P., Chen, J., Cheng, L., **Wang, J.** (2026). *Three-Variable Symmetric Alternating Direction Method of Multipliers for Non-Separable Convex Optimization*. Asian Journal of Control. [doi:10.1002/asjc.70174](https://doi.org/10.1002/asjc.70174)
- Xie, P., Chen, J., **Wang, J.**, Mao, Y., Zhu, G., Yi, Y. (2026). *Alternating Direction Method of Multipliers for Direction of Arrival Estimation Under Mixed Noise*. Signal Processing, 247, Article 110648. [doi:10.1016/j.sigpro.2026.110648](https://doi.org/10.1016/j.sigpro.2026.110648)
- **Wang, J.**, Chen, J., Zhu, Q. (2024). *The Application of the Accelerated Proximal Gradient Descent Algorithm for the Solution of the Weighted Schatten-p Norm in Sparse Noise Extraction*. Circuits, Systems, and Signal Processing, 43, 5169–5190. [doi:10.1007/s00034-024-02697-z](https://doi.org/10.1007/s00034-024-02697-z)

Manuscripts under Review

- Chen, J., **Wang, J.**, Gan, M., Xu, H., Na, J. (2026). *Spectral Partitioning for Hierarchical Identification of Ill-Conditioned Systems: A Power-Iteration-Based Approach*. Systems & Control Letters. (under review)

Conference Papers

- **Wang, J.**, Cheng, L., Chen, J. (2023). *Parameter Identification of First-Order RC Equivalent Circuit Model Based on Improved Fractional-Order Gradient Descent*. In Proceedings of the 35th Chinese Control and Decision Conference (CCDC), 293–298.

SKILLS

- Math: focus on Partial Differential Equations and Optimization
- Programming: **MATLAB**, **Python**, C++, C, Web development
- Languages: Chinese (native), English (C1), French (B2), Japanese (basic)

i MISCELLANEOUS

- Violin: Level 8/10 ; Piano: beginner
- Music arrangement: Self-taught; published original work online