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Wanhong Huang

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Education

Master of Information Science and Technology (April 2022 – March 2024)
Graduate School of Information Science and Technology,
The University of Tokyo, Tokyo, Japan
Supervisor: Tomoharu UGAWA

Bachelor of Engineering; Bachelor of Arts (September 2017 – June 2021)
Department of Software Engineering & Department of Literature
Dalian University of Technology, Dalian, China

Work Experience

Research Assistant (July 2024 – June 2025)
Department of Advanced Neuroimaging, Integrative Brain Imaging Center
National Center of Neurology and Psychiatry (NCNP), Tokyo, Japan

Part-time Engineer (September 2024 – June 2025)
Laboratory of Forest Management
Graduate School of Agricultural and Life Sciences,
The University of Tokyo, Tokyo, Japan

1. Academic Publications, Preprints, and Theses

Preprints (Non-Refereed)

1. **HUANG, W.** (2026, May 5). The Geometry of Economics Symmetry, Dynamics, and Emergent Justice in a Field-Theoretic Framework. <https://doi.org/10.17605/OSF.IO/8VY5K>.
2. **HUANG, W.** (2026, April 13). [Proposal] Towards an Efficient Governance Framework for International Collaborative Clinical Research: A Dual Perspective of Private International Law and Research Ethics. <https://doi.org/10.17605/OSF.IO/URCSY>.
3. **HUANG, W.** (2026, April 1). A Neuro-Symbolic POMDP Framework for Automated Law Master's Thesis Evaluation: Criterion-Grounded Sequential Assessment under Partial Observability. osf.io/ypn8x.

4. **HUANG, W.** (2026, March 30). EEG Topological Dynamics-Based Seizure Prediction. <https://doi.org/10.17605/OSF.IO/P8D4E>.
5. **HUANG, W.** (2026, March 28). A Neuro-Symbolic POMDP Framework for Sequential Legal Judgment with Structured Brief Particles: Towards Transparent Procedural Justice and Reliable Substantive Outcomes. osf.io/72wav.
6. **Wanhong HUANG.** (2026, March 23). Towards a Group Context-Sensitive Grammar for Genome Analysis (Draft). DOI:10.17605/OSF.IO/K38HA.
7. **Wanhong HUANG.** (2026). Relations in Civil Law: A Category Theory Perspective. DOI:10.17605/OSF.IO/DGAEF.
8. **Wanhong HUANG.** (2026, February 6). Spin Foam Representation of Music: Theory and Compilation. DOI:10.17605/OSF.IO/7GPZ2.
9. **HUANG, W.** (2026, 6 février). Viewpoint: Generative Traversal Learning: Toward Creativity Through Meta-Space Navigation. EdArXiv. Repéré à osf.io/preprints/edarxiv/8we5t_v1.
10. **Wanhong HUANG.** (2026). Phase-Encoded Quantum Jumps as Neural Spikes: Expressive Spiking Neural Networks Through Open System Dynamics. osf.io/k9bv6. **Abstract**.
11. **Wanhong HUANG.** (2026). Proposal: Towards A Group Field-Theoretic Computational Machine. <https://doi.org/10.17605/OSF.IO/2FDJU>.
12. **Wanhong HUANG.** (2026). Chapter 1-4, Foundations of Quantitative Social Science Research. DOI: 10.17605/OSF.IO/EVR46. **Book**.
13. **Wanhong HUANG.** (2026). Anarchy, Nonlinearity, and Emergence in International Relations: A Quantum Spiking Neural Network Framework Approach. <https://doi.org/10.17605/OSF.IO/XEKDA>. **Abstract**.
14. **Wanhong HUANG.** (2026). Towards an Integrative Computational Research Framework for Quantitative Social Science. DOI:10.17605/OSF.IO/5J8QT.
15. **Wanhong HUANG** (2025). *The Crises of Symbol and Subject in Modernity: Toward the Relational Subject and Generative Presence*. DOI:10.2139/ssrn.5752104.
16. **Wanhong HUANG** (2025). *Towards Group Field-Theoretical Linguistics: A Unified Framework for Integrating Linguistic, Sociological, and Cognitive Phenomena*. PhilArchive. DOI:10.17605/OSF.IO/N8Y9B. The Science of Consciousness Conference 2026 Poster.
17. **Wanhong HUANG, Matsunari ABE** (2025). *Towards Syntax Analysis of EEG Microstate Dynamics with Probabilistic Context-Free Grammars for Seizure Detection*. Research in progress.

18. **Wanhong HUANG** (2024). *An Attempt to Devise a Pairwise Ising-Type Maximum Entropy Model Integrated Cost Function for Optimizing SNN Deployment*. DOI:10.48550/arXiv.2407.07014.
19. **Wanhong HUANG**, Rui Geng, Yixuan Ma (2020). *Spine Landmark Localization with Combining of Heatmap Regression and Direct Coordinate Regression*. DOI:10.48550/arXiv.2007.05355. International competition paper.

Peer-Reviewed Publications

11. **Wanhong HUANG**, Tomoharu UGAWA (2023). *An Object-Oriented Programming Model for Processing-in-Memory Computing in Java Language*. Proceedings of the 40th JSSST Annual Conference. **[Peer-reviewed domestic conference]**
12. **Wanhong HUANG**, Stefan Marr, Tomoharu UGAWA (2023). *Optimizing the Order of Bytecode Handlers in Interpreters Using a Genetic Algorithm*. DOI: 10.1145/3555776.3577712. SAC 2023 Proceedings. **[Peer-reviewed international conference]**
13. Rui Geng, Yixuan Ma, **Wanhong HUANG** (2021). *An Improved Helmet Detection Method for YOLOv3 on an Unbalanced Dataset*. IEEE CTISC Proceedings. DOI: 10.1109/CTISC52352.2021.00066. **[Peer-reviewed international conference]**

Thesis

14. **Wanhong HUANG** (2024). *A Study on Distributed Object Model-Based Java Frameworks for Processing-in-Memory Architectures*. Master's Thesis (Supervisor: Tomoharu UGAWA), Graduate School of Information Science and Technology, The University of Tokyo.

2. Patents and Software

- Patent (2021)
Wanhong HUANG, Lanling LAN, Bo JIANG, Yuqin LIU. "A Method for Retrieving Action-Specific Video Clips from a Japanese Online Video Corpus". Chinese Patent No. 202110365963.1.
- Research Code (2026)
Wanhong HUANG. Modeling and Formal Validation of Civil Law in Category Theory and Formal Language.
GitHub: "wwwanhonghuang/Civial_Law_Category_Theory".
- Research Software (2026)
Wanhong HUANG. Partially Observable Markov Decision Process Framework.
GitHub: "wwwanhonghuang/framework-POMDP/tree/main/src/pomdp".

- Research Software (2026)
Huang, Wanhong. Humans–Avatars Mapping and Co-Creation Software. Not publicly released.
- Research Code (2026)
Wanhong HUANG. Spin Foam Representations of Music.
GitHub: “[wwwwanhonghuang/Spin-Foam-Representations-of-Music](#)”.
- Research Software (2025)
Wanhong HUANG. Quantitative Social Science Research Toolchain (Integrated Environment for Quantitative Social Science Analysis).
GitHub: “[wwwwanhonghuang/Quantitative-Social-Science-Research-Toolchain](#)”.
- Research Software (2025)
Wanhong HUANG. Spiking Neural Network Intermediate Language Design and Compilation Infrastructure (C++).
GitHub: “[wwwwanhonghuang/snn-compilation-infrustrature](#)”
- Research Software (2024–2025)
Wanhong HUANG, Mitsunari ABE. Spiking Neural Network Simulation Framework (Python & C++). GitHub: {“[wwwwanhonghuang/snn-simulator-python](#)”; “[wwwwanhonghuang/snn-lib-cpp](#)”}
- Research Output Software (2024–2025)
Wanhong HUANG, Mitsunari ABE. EEG Syntax Analysis and Seizure Prediction Framework (Python & C++). Unpublished.
- Research Output Software (2024)
Wanhong HUANG, Tomoharu UGAWA. Java Language Runtime for UPMEM Processing-in-Memory Device (Java & C). Unpublished.
- Research Software (2024)
Wanhong HUANG. Ising-Model-Based Optimization Algorithm for Spiking Neural Network Deployment. GitHub: “[mem-ising-nce-experiment](#)”.

3. Awards, Examinations, and Certifications

- Japanese Psychological Association Certification: Psychology Test Grade Special 1st Class, 2024.
- Intelligent Spinal Disease Diagnosis AI Competition
Rank 14 / 3108 (2020).
- CVPR 2020 AliProducts Challenge
Rank 34 / 1138.
- Japanese Language Proficiency Test (JLPT) N1, 2019.
- Software Designer Certification (National Qualification, China), 2013 (at age 14).