Weiliang Chen

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Education

Texas Tech University Aug 2025 – Present
PhD in Computer Science *Lubbock, TX*

- **Advisor:** Prof. Song Liao
- **Research interests:** AI Agent Security & Privacy

Heilongjiang University Aug 2022 – Jun 2025
Master in Computer Science (GPA: 3.92 / 4.00) *Harbin, China*

- **Advisor:** Prof. Qianqian Ren
- **Research interests:** Spatial-temporal data mining, Reinforcement learning, Federated learning.
- **Reward:** First-Class Scholarship (2023 & 2024, Top 5%); Excellent Master's Thesis Award (2025).

Heilongjiang University Aug 2018 – Jun 2022
Bachelor in Software Engineering (GPA: 3.11 / 4.00) *Harbin, China*

- **Relevant Coursework:** Computer Network, Database System Principles (MySql), Operating System, Java Programming, Data Structures and Algorithms, Principles of Computer Composition, Advanced Mathematics.
- **Reward:** Recipient of Third-Class Scholarship in 2019. (Top 30%)

Publications

[1] **Weiliang Chen**, Qianqian Ren, Yong Liu, Jianguo Sun, Feng Lin, "Adversarial Self-Supervised Learning for Secure and Robust Urban Region Profiling", *IEEE Transactions on Information Forensics and Security **(TIFS)***, 2025. [SCI Q1, Impact Factor: 8.0, Top IEEE Security Journal, **First paper from Heilongjiang University published in TIFS.**]

- Unique Contribution: Introduced the first adversarial self-supervised framework for urban region modeling, simultaneously improving robustness and predictive accuracy.
- Impact: Pioneered a new paradigm that resists malicious attacks, providing a novel technical path for secure and intelligent smart city governance.

[2] **Weiliang Chen**, Li Jia, Yang Zhou, Qianqian Ren, "Reputation-Driven Asynchronous Federated Learning for Enhanced Trajectory Prediction with Blockchain", *IEEE Internet of Things Journal **(IOTJ)***, 2025. [SCI Q1, Impact Factor: 8.9, Top IEEE Journal]

- Unique Contribution: Proposed the first reputation-driven asynchronous federated learning framework with blockchain, which integrates reputation evaluation to dynamically regulate client participation, addressing fairness, straggler effects, and malicious updates.
- Impact: Achieved higher trajectory prediction accuracy and robustness while reducing communication costs, providing a scalable and trustworthy solution for privacy-preserving intelligent transportation systems.

[3] **Weiliang Chan**, Qianqian Ren, "Region-Wise Attentive Multi-View Representation Learning For Urban Region Embedding", *Proceedings of the 32nd ACM International Conference on Information and Knowledge Management **(CIKM 2023)***, Acceptance rate: 152/554 = 27.4%.

- Unique Contribution: Overcame the limitations of conventional Graph Attention Networks (GATs) in urban computing by introducing the first region-wise multi-view attention framework, which effectively captures long-range dependencies between distant urban regions beyond local neighborhood structures.
- Impact: Enabled more accurate land-use classification and check-in prediction, providing a robust data-driven approach for urban planning and sustainable smart city development.

Copyright Information

Environmental Monitoring System WeiliangBAS V1.0 | *Registration No.: 2021SR1328204* Sept 6, 2021

Paper Review

Journal

- IEEE Internet of Things Journal (*IOTJ* - Oct. & Dec. 2024; Feb. & Jan. & Mar. & Apr. & Jun. & Jul. & Oct. & Nov. 2025)
- IEEE Transactions on Mobile Computing (*TMC* - Feb. & Jul. & Sep. 2025)
- IEEE Transactions on Neural Networks and Learning Systems (*TNNLS* - Feb. 2024)

Conference

- THE ACM WEB CONFERENCE 2026
- IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (*ASONAM* 2025)
- EAI SmartSP 2025

Internship Experience

Heilongjiang Hengxun Software Research Institute | *Team Leader, Research Department* Sept. 2019 – Feb. 2022

- Led the team to research the latest trends, develop new products and find new solutions, and took charge of demand analysis, equipment procurement, project implementation, testing , patent and copyright application and so on.
- Completed the R&D of Environmental Monitoring System, which obtained the provincial Certificate of Project Completion and won the Silver Medal of the 12th ICBC Rong-E Lian Challenge Cup Heilongjiang College Students' Entrepreneurship Plan Competition
- Built the digital signature and signature verification modules of the AI based Digital Certificate System , which won the First Prize at The 12th Harbin College Students Entrepreneurship Competition in 2021
- Designed the Ping'an Monitoring Wiring System in the South of Qingdao by CAD.
- Developed and delivered the payment modules of the NewhxBoss Business Operation Support System v1.0 , which obtained the Registration Certificate of Scientific and Technological Achievements of Heilongjiang Province in 2019 and the Third Prize of Heilongjiang Science and Technology Progress Award in 2021.
- Contributed to over 40 software copyrights and 30 patents, including design, utility, and invention patents.