

Xueqin (Ned) Chen

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RESEARCH INTEREST

My research vision is to develop *AI-based solutions* to address real-world challenges across diverse domains, including **social computing**, **urban computing**, and **environment**. Specifically,

- **AI + Social Computing**, with a specific focus on understanding the diffusion trends of online information (information diffusion prediction) and assessing its credibility (rumor/fake news detection). Recently, I have also been interested in the predictability of economic behavior that influences human life (stock prediction).
- **AI + Urban Computing**, which focuses on deploying AI in city development. I have focused on transportation management, including traffic (vehicle and metro) flow prediction, as well as analyzing human mobility behavior through data from user online check-ins. Additionally, I have worked on extracting meaningful information based on the interactions (e.g., nearby and located in) of urban entities (e.g., shopping centers, restaurants, and roads) within geographical areas (urban region modeling and prediction).
- **AI + Environment**, an interdisciplinary research field that integrates AI, environmental science, and physics, is critically important for addressing diverse challenges in Earth's environment. Specifically, this research topic aims to understand environmental dynamic changes and conduct simulations guided by underlying physical laws, i.e., partial differential equations (PDEs). My primary focus within this area is solving problems related to water management. In the beginning, I was dedicated to developing operator-based methods to combat uncertainties (i.e., infilling missing values) in existing image-based velocimetry techniques (PIV). Currently, I am specifically focused on developing a physics-informed optical flow estimation method for use in velocimetry estimation on river surfaces.

In a nutshell, I'm interested in analyzing all kinds of spatiotemporal data, including dynamic networks, videos, and time-series data. My work with multimodal models has also led me to focus on text and image processing. In the era of large language models (LLMs), I'm particularly intrigued by the potential of leveraging LLMs and the training strategies behind them, such as retrieval, and in-context learning, to enhance existing applications.

WORKING EXPERIENCE

- **Postdoctoral Researcher, Delft University of Technology** 15, May 2022 - 15, May 2025
AidroLab, Civil Engineering and Geosciences and Electrical Engineering
Advisor: Dr. Riccardo Taormina Delft, NL

EDUCATION

- **Ph.D. (Joint Ph.D. programme), Leiden University** 16, Oct. 2019 - 25, Oct. 2022
Leiden Institute of Advanced Computer Science Leiden, NL
 - Advisor: Prof. Marcello Bonsangue, Prof. Fengli Zhang, and Prof. Fan Zhou
 - Thesis: [Information diffusion analysis in online social networks based on deep representation learning](#)
- **Ph.D., University of Electronic Science and Technology of China** 1, Sept. 2017 - 1, Dec. 2022
School of Information and Software Engineering Chengdu, CN
 - Advisor: Prof. Fengli Zhang and Prof. Fan Zhou
 - GPA: 3.9/4
- **M.Sc, University of Electronic Science and Technology of China** 1, Sept. 2015 - 21, May. 2017
School of Information and Software Engineering Chengdu, CN
 - Advisor: Prof. Fengli Zhang
 - GPA: 3.41/4.0
- **B.E., Dalian Neusoft University of Information** 1, Sept. 2011 - 1, June. 2015
Computer Science and Technology Dalian, CN
 - Weighted Average Mark: 90.87/100

1. AI+Social Computing

- [C.1] **Xueqin Chen**, Fan Zhou, Kunpeng Zhang, Goce Trajcevski, Ting Zhong and Fengli Zhang. (2019). **Information Diffusion Prediction via Recurrent Cascades Convolution**. In *ICDE* [Core A*]. DOI: 10.1109/ICDE.2019.00074
- [C.2] **Xueqin Chen**, Kunpeng Zhang, Fan Zhou, Goce Trajcevski, Ting Zhong and Fengli Zhang. (2019). **Information Cascades Modeling via Deep Multi-Task Learning**. In *SIGIR* [Core A*], pp. 885 - 888. DOI: 10.1145/3331184.3331288
- [C.3] Ting Zhong, Jienan Zhang, Zhangtao Cheng, Fan Zhou and **Xueqin Chen**. (2024). **Information Diffusion Prediction via Cascade-Retrieved In-context Learning**. In *SIGIR* [Core A*], pp. 2472-2476. DOI: 10.1145/3626772.3657909
- [J.1] **Xueqin Chen**, Fan Zhou, Fengli Zhang and Marcello Bonsangue. (2021). **Modeling Microscopic and Macroscopic Information Diffusion for Rumor Detection**. *International Journal of Intelligent Systems*. DOI: 10.1002/int.22518
- [J.2] **Xueqin Chen**, Fan Zhou, Fengli Zhang and Marcello Bonsangue. (2021). **Catch Me If You Can: A Participant-Level Rumor Detection Framework via Fine-grained User Representation Learning**. *Information Processing and Management*, DOI: 10.1016/j.ipm.2021.102678
- [J.3] **Xueqin Chen**, Fengli Zhang, Fan Zhou and Marcello Bonsangue. (2022). **Multi-Scale Graph Capsule with Influence Attention for Information Cascade Prediction**. *International Journal of Intelligent Systems*. DOI: 10.1002/int.22786
- [J.4] **Xueqin Chen**, Fan Zhou, Goce Trajcevski and Marcello Bonsangue. (2022). **Multi-view Learning with Distinguishable Feature Fusion for Rumor Detection**. *Knowledge-Based Systems*. DOI: 10.1016/j.knosys.2021.108085
- [J.5] Nan Liu, Fengli Zhang, Qiang Gao and **Xueqin Chen**[#]. (2024). **Contrastive Learning with Edge-wise Augmentation for Rumor Detection**. *International Journal of Intelligent Systems*. DOI: 10.1155/2024/3858526
- [S.1] **Xueqin Chen**, Xiaoyu Huang, Qiang Gao and Li Huang. (2024). **Enhancing Content-based Fake News Detection via External-Knowledge Distillation from LLMs**. In *submitting to Knowledge-Based Systems*.
- [U.1] Xin Jing, Yichen Jing, Yuhuan Lu, Bangchao Deng, **Xueqin Chen**[#] and Dingqi Yang. (2024). **CasFT: Future Trend Modeling for Information Popularity Prediction with Dynamic Cues-Driven Diffusion Models**. *Submitted to a conference*.
- [U.2] Li Huang, Haowen Liu, Qiang Gao, Jiajing Yu, Guisong Liu and **Xueqin Chen**. (2024). **Adversity-aware Few-shot Named Entity Recognition via Augmentation Learning**. *Submitted to a conference*.
- [U.3] Li Huang, Yanzhe Xie, Qiang Gao, Kunpeng Zhang, Guisong Liu and **Xueqin Chen**. (2024). **Progressive Dependency Representation Learning for Stock Ranking in Uncertain Risk Contrasting**. *Submitted to a conference*.
- [U.4] Ting Zhong, Wenxue Ye, Zhangtao Cheng, Fan Zhou, Kunpeng Zhang and **Xueqin Chen**[#]. (2024). **DucDiff: Dual-consistent Diffusion for Uncertainty-aware Information Diffusion Prediction**. *Submitted to IEEE Transactions on Computational Social Systems*.

2. AI+Urban Computing

- [C.4] Qiang Gao, Xiaolong Song, Li Huang, Goce Trajcevski, Fan Zhou and **Xueqin Chen**[#]. (2024). **Enhancing Fine-Grained Urban Flow Inference via Incremental Neural Operator**. In *IJCAI* [Core A*], pp. 5826-5834. DOI: 10.24963/ijcai.2024/644
- [C.5] Qiang Gao, Zizheng Wang, Li Huang, Goce Trajcevski, Kunpeng Zhang and **Xueqin Chen**[#]. (2024). **Enhancing Dependency Dynamics in Traffic Flow Forecasting via Graph Risk Bootstrap**. In *SIGSPATIAL* [Core A], *Accepted*
- [U.5] Qiang Gao, Letian Ning, Li Huang, Chaoran Liu, Fan Zhou and **Xueqin Chen**[#]. (2024). **Aligning Authentic Location Shares with Mobility Information Bottleneck**. *Submitted to IEEE Transactions on Intelligent Transportation Systems*.
- [U.6] Qiang Gao, Zizheng Wang, Li Huang, Goce Trajcevski, Guisong Liu and **Xueqin Chen**[#]. (2024). **Responsive Dynamic Graph Disentanglement for Metro Flow Forecasting**. *Submitted to a conference*.

4. AI+Environment

- [S.2] **Xueqin Chen**^{*}, Hessel Winsemius and Riccardo Taormina. (2024). **Graph-enhanced Neural Operator for Missing Velocities Infilling in River Surface Velocimetry**. In *submitting to Water Resources Research*.

PROJECTS

- **Research on Fault Diagnosis of Cloud Computing Resource Pool** 2015
Southern Power Grid Yunnan Power Grid
- **Sichuan transportation big data platform** 2017
Sichuan Gaolu Traffic Information Engineering Co., Ltd. Grant No. H04W170570
- **A Comprehensive Review of Health and Medical Big Data Research** 2017
National Information Security Center Grant No. YJYS-XXYJ-201701
- **Research on the Construction and Application of Cross-Platform Chinese Knowledge Graph Based on Artificial Intelligence** 2018
Sichuan Provincial Department of Science and Technology Grant No. 2018GZ0087
- **Research and Demonstration Application of Multi-scale Situational Awareness and Event Evolution for Security in the Xinjiang Region** 2019
Regional Innovation Cooperation in Sichuan Province Grant No. 2020YFQ0018
- **Security Requirements for Digital Rights Management Based on Blockchain** 2019
National Information Security Center Grant No. 2019R015
- **Research on Interpretability in Graph Learning** 2020
National Natural Science Foundation of China Grant No. 62072077

TEACHING

- **CEGM1000: Modelling, Uncertainty and Data for Engineers** Fall 2022 & Fall 2023
Workshop Q&A TA
- **CEGM2003: Data Science and Artificial Intelligence for Engineers** Fall 2023
Course materials design – Advanced Decision Tree TA

REVIEWERS FOR JOURNALS AND CONFERNCES

- **Conferences:** KDD' 19/20/23/24 | IJCAI' 24 | DSAI' 23/24 | SDM'24 | SIGIR' 20 | ACL' 20 | BigData' 20/22
- **Journals:** Expert Systems With Applications | Transactions on Knowledge and Data Engineering | Information Sciences | International Journal of Intelligent Systems | Journal of Circuits, Systems, and Computers | Information Processing and Management | IEEE Transactions on Circuits and Systems for Video Technology | Scientific Reports

MENTORING

- **PhD Candidate**
 - Nan Liu (UESTC, fake news detection, co-advisor with Prof. Fengli Zhang, from 2022)
 - Zhangtao Cheng (UESTC, information cascades, co-advisor with Prof. Fan Zhou, from 2024)
 - Xin Jing (UM, information cascades, co-advisor with Dr. Dingqi Yang, from 2024)
 - Yujie Li (Leiden Uni, continual learning, co-advisor with Prof. Marcello Bonsangue, from 2024)
- **M.Sc student**
 - Jienan Zhang (UESTC, M.Sc student, information cascades, co-advisor with Prof. Fan Zhou, from 2024)
 - Wenxue Ye (UESTC, M.Sc student, information cascades, co-advisor with Prof. Fan Zhou, from 2024)
 - Xiaolong Song (SWUFE, M.Sc student, urban computing, co-advisor with Dr. Qiang Tao, from 2024)
 - Zizheng Wang (SWUFE, M.Sc student, spatial-temporal data mining, co-advisor with Dr. Qiang Tao, from 2024)
 - Xiaoyu Huang (SWUFE, M.Sc student, fake news detection, co-advisor with Dr. Qiang Tao, from 2024)
 - Letian Ning (SWUFE, M.Sc student, fake news detection, co-advisor with Dr. Qiang Tao, from 2024)
 - Max Helmich (TU Delft, M.Sc student, image-based velocimetry, co-advisor with Dr. Riccardo Taormina, 2023)

HONORS AND AWARDS

- **Outstanding graduates of general higher education institutions in Liaoning Province** 2015
- **ICDE Student Travel Award** 2019
- **One of the best tech-idea in 2023 (KIJK magazine)*** 2023
PhD work – Universiteit Leiden: algoritme tegen nepnieuws The final rank is 7th

REFERENCES

1. **Marcello Bonsangue**

Scientific Director / Professor, LIACS

Faculty of Science, Leiden University

Email: m.m.bonsangue@liacs.leidenuniv.nl

Homepage: <https://www.universiteitleiden.nl/en/staffmembers/marcello-bonsangue#tab-1>

Relationship: *[Promoter]*

2. **Fan Zhou**

Professor, School of Information and Software Engineering

University of Electronic Science and Technology of China

Email: fan.zhou@uestc.edu.cn

Homepage: <https://sise.uestc.edu.cn/info/1035/9375.htm>

Relationship: *[Co-promoter]*

3. **Goce Trajeveski**

Kingland Associate Professor, Dept. of Electrical and Computer Engineering

Iowa State University

Email: gocet25@iastate.edu

Homepage: <https://www.engineering.iastate.edu/people/profile/gocet25/>

Relationship: *[Collaborator]*

4. **Qiang Gao**

Associate Professor, School of Computing and Artificial Intelligence

Southwestern University of Finance and Economics

Email: qianggao@swufe.edu.cn

Homepage: <https://qianggao.xyz/>

Relationship: *[Collaborator]*