

# Xi Chen

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## BRIEF INTRODUCTION

I am currently pursuing a Ph.D. in Electronic and Information Engineering at Fudan University. My research interests primarily include graph neural networks, dynamic graph representation learning, and computer vision. I interned at Royal Mail, where I contributed to the development of a postal network simulation model, gaining extensive experience in data analysis and communication coordination. I also worked at China Merchants Bank, where I became familiar with financial markets, the characteristics of various financial products, and financial risk management. Additionally, I interned at Tencent, contributing to projects related to dynamic graph representation learning, which deepened my expertise in graph neural networks. I have been involved in multiple deep learning-related research projects and possess strong skills and experience in machine learning, deep learning, and academic research.

## EXPERIENCE

- **Tencent** Jul 2024 - Present  
Shenzhen, China  
*Intern*
  - Conducting research on financial risk management algorithms for large-scale heterogeneous data, with two research papers currently under submission, and two papers have been accepted by ICML' 2025 [C.1] and CIKM'25 [C.4] respectively, and filed two patent applications [P.1, P.2].
- **Tencent** Mar 2023 - Jun 2023  
Shenzhen, China  
*Intern*
  - Conducted research in Temporal Interaction Graph representation learning, authored two research papers [S.3, C.9], and filed a patent application [P.5].
- **China Merchants Bank** Jun 2019 - Jun 2021  
Nanchang, China  
*Product Manager, Financial Manager*
  - CFA Candidate, attained Fund Qualification Certificate and Associate Financial Planner Certificate.
- **Royal Mail** Jun 2018 - Oct 2018  
London, UK  
*Intern*
  - Designed a postal network simulation model, integrating data analytics to significantly reduce operational costs.

## EDUCATION

- **Fudan University**2021 - Present  
Shanghai, China  
*Ph.D. Candidate in Electronic and Information Engineering*
  - Focus: Representation Learning on Temporal Interaction Graphs
- **University of Southampton**2017 - 2018  
Southampton, UK  
*Master's Degree in Business Analytics and Finance (Distinction)*
  - Focus: Simulation
- **Jiangxi University of Finance and Economics**2010 - 2014  
Nanchang, China  
*Bachelor's Degree in International Marketing*
  - Graduation Thesis Direction: Consumer Behavior

## PROJECTS

- **Representation Learning on Temporal Interaction Graphs**Oct 2022 - Present  
*Fudan University*
  - Temporal Interaction Graph representation learning can be applied to fields such as recommendation systems and financial risk control. Research on this topic provides a theoretical foundation for various application domains. My ongoing studies focus on multiple related areas, including improving the performance of downstream tasks, enhancing model efficiency, and expanding the integration of graph models with multi-modal models.
- **Financial Risk Control Algorithms for Large-scale Heterogeneous Data**Jul 2024 - Present  
*Fudan University, Tencent*
  - This research focuses on applying temporal interaction graph representation learning models to financial risk management. Specifically, it explores the application of temporal interaction graph models to large-scale WeChat Pay data, optimizing and improving algorithms based on real-world data and business scenarios. Two research papers currently under submission, and two papers have been accepted by ICML' 2025 [C.1] and CIKM'25 [C.4] respectively, and filed two patent applications [P.1, P.2].

## • Semantic-aware 2D Position Encoding

Fudan University, Ele.me

Jun 2024 - Jun 2025

- This research explores the impact of position encoding on performance in Transformer-based vision models. By incorporating contextual information into position encoding, it aims to construct semantic aware 2D position encoding, enhancing the performance of vision models across multiple downstream tasks. Authored two research papers [S.1, C.3].

## • Fraud Detection with Limited Positive Samples

Fudan University, Ant Inc.

Sep 2023 - Jan 2025

- This research applies temporal interaction graph models to real-world financial fraud detection scenarios. It explores how to ensure high accuracy in identifying anomalous and high-risk samples when positive sample sizes are limited. For the first time, it proposes integrating prompt engineering into temporal interaction graph to enhance model capability and improve performance in downstream tasks. Authored two research papers [S.3, C.5], and filed a patent application [P.4].

## • National Healthcare Insurance Anti-Fraud Model

Fudan University, Red Matrix

Sep 2023 - Jun 2024

- Building an anti-fraud platform based on national healthcare insurance data, integrating raw data at multiple levels by leveraging expertise experience. The platform provides data analysis and visualization tools, offering fraud detection and evidence support from multiple dimensions, including pharmacies, medications, and purchasers.

## • Large-Scale Temporal Interaction Graph Training and Inference

Fudan University, Tencent

Oct 2022 - Jun 2023

- This research tackles the challenges associated with training large-scale Temporal Interaction Graph data, particularly stemming from the sequential characteristics of interaction edges in graphs. It delves into graph partitioning techniques and multi-GPU training strategies specifically tailored for temporal interaction graphs. Consequently, a robust framework was developed, facilitating the training and inference of large-scale graphs across multiple GPUs. Authored two research papers [S.4, C.9], and filed a patent application [P.5].

## • Intelligent Evaluation and Generation Model Research in Urban Design

Fudan University, Tongji University

Sep 2022 - Sep 2023

- Leveraged computer vision models and few-shot learning techniques on manually annotated datasets for urban design evaluation, thereby devising a sophisticated evaluation model aimed at enhancing map data analysis through supervised learning.

## • Application of Computer Vision Models on Community Layout Planning

Fudan University, Tongji University

Sep 2021 - Jun 2022

- To mitigate the scarcity of mature datasets in the field, domestic residential community data was collected, forming an extensive dataset. This dataset facilitated baseline experiments with computer vision generative models. The findings were encapsulated in a detailed paper [C.8], thereby propelling data-driven research in the domain.

## • Simulation and Optimization of Postal Networks

University of Southampton, Royal Mail

May 2018 - Oct 2018

- Developed a simulation model to emulate the backbone postal network and test various scenarios using queue theory and dynamic load balancing principles. This model offered optimization suggestions, enabling the company to simulate its network and avoid untested real-world implementations, significantly saving operational costs.

## PUBLICATIONS AND PATENTS

C=CONFERENCE, J=JOURNAL, S=IN SUBMISSION, P=PATENT

- [C.1] Xi Chen, Yateng Tang, Jiarong Xu, Jiawei Zhang, Siwei Zhang, Sijia Peng, Xuehao Zheng, Yun Xiong. (2025). **Rethinking Time Encoding via Learnable Transformation Functions**. ICML' 2025.
- [J.1] Luolin Xiong\*, Haofen Wang\*, **Xi Chen\***, Lu Sheng\*, Yun Xiong\*, Jingping Liu\*, Yanghua Xiao\*, Huajun Chen\*, Qing-Long Han, and Yang Tang. (2025). **DeepSeek: Paradigm Shifts and Technical Evolution in Large AI Models**. IEEE/CAA JAS, Vol. 12, Issue 5, pp. 841-858. DOI: 10.1109/JAS.2025.125495.
- [C.2] Siwei Zhang, Yun Xiong, Yateng Tang, **Xi Chen**, Zian Jia, Zehao Gu, Jiarong Xu, Jiawei Zhang. (2025). **Unifying Text Semantics and Graph Structures for Temporal Text-attributed Graphs with Large Language Models**. NeurIPS' 2025.
- [C.3] Biao Yang, Muqi Huang, Yuhui Zhang, Yun Xiong, Kun Zhou, **Xi Chen**, Shiyang Zhou, Huishuai Bao, Chuan Li, Feng Shi, Hualei Liu. (2025). **AttentionDrag: Exploiting Latent Correlation Knowledge in Pre-trained Diffusion Models for Image Editing**. IJCAI' 2025.
- [C.4] Zehao Gu, Yateng Tang, Jiarong Xu, Siwei Zhang, Xuehao Zheng, **Xi Chen<sup>†</sup>**, Yun Xiong. (2025). **SSH-T<sup>3</sup> : A Hierarchical Pre-training Framework for Multi-Scenario Financial Risk Assessment**. CIKM' 2025.
- [S.1] **Xi Chen**, Shiyang Zhou, Muqi Huang, Jiaxu Feng, Yun Xiong, Kun Zhou, Biao Yang, Yuhui Zhang, Huishuai Bao, Sijia Peng, Chuan Li, Feng Shi. (2025). **A 2D Semantic-Aware Position Encoding for Vision Transformers**. arXiv.

- [S.2] Siwei Zhang, **Xi Chen**, Yun Xiong, Xixi Wu, Yizhu Jiao, Yao Zhang, Mingyang Zhang, Tengfei Liu, Weiqiang Wang, Jiawei Zhang. (2025). **Interactions Exhibit Clustering Rhythm: A Prevalent Observation for Advancing Temporal Link Prediction.** *Openreview*.
- [S.3] **Xi Chen**, Siwei Zhang, Yun Xiong, Xixi Wu, Jiawei Zhang, Xiangguo Sun, Yao Zhang, Yinglong Zhao, Yulin Kang. (2024). **Prompt Learning on Temporal Interaction Graphs.** *arXiv*.
- [C.5] **Xi Chen**, Yun Xiong, Siwei Zhang, Jiawei Zhang, Yao Zhang, Shiyang Zhou, Xixi Wu, Mingyang Zhang, Tengfei Liu, Weiqiang Wang. (2024). **DTFormer: A Transformer-Based Method for Discrete-Time Dynamic Graph Representation Learning.** *CIKM' 2024*.
- [C.6] Siwei Zhang, **Xi Chen**, Yun Xiong, Xixi Wu, Yao Zhang, Yongrui Fu, Yinglong Zhao, Jiawei Zhang. (2024). **Towards Adaptive Neighborhood for Advancing Temporal Interaction Graph Modeling.** *KDD' 2024*.
- [C.7] Biao Yang, Yun Xiong, **Xi Chen**, Xuejing Feng, Meng Wang, Jun Ma. (2024). **ST-ECP: A Novel Spatial-Temporal Framework for Energy Consumption Prediction of Vehicle Trajectory.** *CIKM' 2024*.
- [C.8] **Xi Chen**, Yun Xiong, Siqi Wang, Haofen Wang, Tao Sheng, Yao Zhang, Yu Ye. (2023). **ReCo: A Dataset for Residential Community Layout Planning.** *ACM MM' 2023*.
- [S.4] **Xi Chen**, Yongxiang Liao, Yun Xiong, Yao Zhang, Siwei Zhang, Jiawei Zhang, Yiheng Sun. (2023). **SPEED: Streaming Partition and Parallel Acceleration for Temporal Interaction Graph Embedding.** *arXiv*.
- [C.9] Siwei Zhang, Yun Xiong, Yao Zhang, Yiheng Sun, **Xi Chen**, Yizhu Jiao, Yangyong Zhu. (2023). **RDGSL: Dynamic Graph Representation Learning with Structure Learning.** *CIKM' 2023*.
- [P.1] **Xi Chen**, Yateng Tang, Yun Xiong, Siwei Zhang, Xuehao Zheng, Jingran Dong. (2025). **Time Information Encoding Method, Apparatus, Computing Device, and Storage Medium.** In the Application Process.
- [P.2] Siwei Zhang, Yateng Tang, Yun Xiong, **Xi Chen**, Xuehao Zheng, Jingran Dong. (2025). **Method, Apparatus, Device, and Storage Medium for Identifying Abnormal Resource Transfer Objects.** In the Application Process.
- [P.3] **Xi Chen**, Siwei Zhang, Mingyang Zhang, Ruofan Wu, Tengfei Liu, Qiangwei Wang, Yun Xiong. (2025). **User Prediction Method and Apparatus Based on Discrete-Time Dynamic Graph.** In the Application Process.
- [P.4] Yun Xiong, **Xi Chen**, Yinyin Wang, Tianle Zhang. (2024). **Method and Apparatus for Dynamic Access Behavior Analysis Based on Temporal Interaction Graphs.** In the Application Process.
- [P.5] Yao Zhang, Yun Xiong, Yateng Tang, **Xi Chen**, Yongxiang Liao, Xuehao Zheng, Jingran Dong, Wen Huang. (2023). **A method, apparatus, electronic device, and storage medium for processing interaction data.** In the Application Process.

(<sup>†</sup> Corresponding Author, \* Equal Contribution)

## ACADEMIC REVIEWER EXPERIENCE

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- AAAI'26
- NeurIPS'25, AAAI'25, ICCV'25, ICML'25, AISTATS'25, ICLR'25, CVPR'25
- NeurIPS'24, KDD'24, ICLR'24, LOG'24, CVPR'24
- NeurIPS'22