Yilong Zang

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EDUCATION

•Bachelor of Science in Electronic and information engineering *Sep.2015 - Jul.2019*

School of Information Science and Engineering, Wuhan University of Science and Technology   Wuhan, China

– Bachelor's thesis: Super-resolution Reconstruction of Images based on Convolutional Neural Networks (translated).
– Excellent graduation thesis award.

•Master of Science in Communication and Information System *Sep.2020 - Jul.2023*

School of Computer Science, Wuhan Univerity   Wuhan, China

– Rank 1st in the graduate entrance examination.
– Researched at National Engineering Research Center For Multimedia Software.
– Advisor: Ruimin Hu, Co-advisor: Zheng Wang.
– Research directions: fraud detection, graph data mining, graph neural network, social network.
– Master's thesis: Telecom Fraud Detection based on User Social Interaction Analysis (translated).

EMPLOYMENT

•Research Assistant (remote) *Oct.2023 - now*

German Research Center for Artificial Intelligence (DFKI)   Wuhan, China

– Advisor: Prof. Sebastian Vollmer
– Research group: Data Science and its Applications (DSA).
– Research directions: Biomedical/Geographic graph data mining.

TEACHING AND MENTORSHIP

•Undergraduate course: Advanced Language Programming *Feb.2021 - Jun.2021*

Teaching Assistant   Wuhan, China

– Graded undergraduate programming assignments.
– Assisted students to team up to complete the term project (mainly C++).

•Undergraduate thesis guidance *Dec.2020 - May.2021*

Mentor   Wuhan, China

– Guided 2 undergraduate students on literature research, programming, and thesis writing. The research direction is about social network.
– 1 of them got a grade of A+ (nearly 15%).

PROJECTS

•National Key R&D Program of China *Sep.2020 - Dec.2022*

Student Participant   Wuhan, China

– **Programming.** Designed a personalized influence metric for user role information based on the Pagerank model, implemented by JAVA; **Visualization.** Designed the visualization system implemented by Vue(Javascript) + Django(Python); **Writting.** Complete report writing.

•Joint project of National Natural Science Foundation of China *Sep.2020 Mar.2022*

Student Participant   Wuhan, China

– **Title.** Three-dimensional Spatial Identity Computing Theory and User Portrait and Location Technology (translated); **Research Task.** Researched on how to find high-influential users in complex social networks. **Outputs.** One conference paper[2]

•Joint project of National Natural Science Foundation of China *Feb.2022 June.2023*

Student Participant   Wuhan, China

– **Title.** Key Technology Research on Natural Social Security Behavior Understanding and Intelligent Early Warning(translated). **Research Proposal Writing:** Researched literature, proposed research content, and discussed the feasibility. Finally, we successfully applied for the grant. **Outputs.** One conference paper[1]

PUBLICATIONS

[1] **Y. Zang**, R. Hu, Z. Wang, D. Xu, J. Wu, D. Li, J. Wu, L. Ren. Don't Ignore Alienation and Marginalization: Correlating Fraud Detection. In IJCAI 2023. (acceptance rate 15%)

[2] **Y. Zang**, R. Hu, X. Li, Z. Wang, D. Li. User and Interaction both Matter: Social Relationship Mining via Interaction Graph Propagating. In 2023-IEEE International Conference on Communications (ICC), 2023, accepted.

[3] J. Hu, R. Hu, Z. Wang, D. Li, J. Wu, L. Ren, **Y. Zang**, et al. Collaborative Fraud Detection: How Collaboration Impacts Fraud Detection. ACM International Conference on Multimedia (ACM MM), 2023.

[4] L. Ren, R. Hu, D. Li, Y. Liu, J. Wu, **Y. Zang**, et al. Dynamic graph neural network-based fraud detectors against collaborative fraudsters. Knowledge-Based Systems, 2023.

[5] J. Wu, R. Hu, D. Li, L. Ren, W. Hu, **Y. Zang**. IDGL: An Imbalanced Disassortative Graph Learning Framework for Fraud Detection. Service-Oriented Computing: 20th International Conference (ICSOC), 2022: 616-631.

[6] J. Wu, R. Hu, D. Li, L. Ren, W. Hu, **Y. Zang**. A Bi-directional Category-Aware Multi-task Learning Framework for Missing Check-in POI Identification. Service-Oriented Computing: 20th International Conference (ICSOC), 2022: 584-599.

[7] L. Ren, R. Hu, D. Li, Y. Liu, J. Wu, **Y. Zang**, et al. Improving Fraud Detection via Imbalanced Graph Structure Learning. Machine Learning. under major revisions.

[8] L. Ren, R. Hu, D. Li, J. Wu, **Y. Zang**, et al. Cross-Regional Friendship Inference via Category-Aware Multi-Bipartite Graph Embedding.2022 IEEE 47th Conference on Local Computer Networks (LCN). 2022: 73-80.

[9] D. Li, L. Zeng, R. Hu, J. Huang, X. Liang, **Y. Zang**. Dynamic Behavior Pattern: Mining the Fraudsters in Telecom Network. 2022 IEEE 23rd Int Conf on High Performance Computing & Communications (HPCC). 2022.

[10] D. Li, L. Zeng, R. Hu, X. Liang, **Y. Zang**. ITC: Influential-Truss Community Search. 2022 International Joint Conference on Neural Networks (IJCNN). 2022: 01-08.

Papers under review

1) **Y. Zang**, R. Hu, X. Li, Z. Wang, D. Li, J. Wu, L. Ren. Power on Graph: Mining Power Relationships via User Interaction Correlation. IEEE Transaction on Computational Social Systems.

2) X. Gao, T. Chen, **Y. Zang**, W. Zhang, Q. V. H. Nguyen, K. Zheng, H. Ying. Graph Condensation for Inductive Node Representation Learning. IEEE International Conference on Data Engineering.

3) L. Ren, R. Hu, J. Wu, D. Li, **Y. Zang**, et al. KD-GNN: Knowledge Distillation-enhanced Graph Neural Network for Graph Anomaly Detection with Incomplete Attributes. Thirty-Eighth AAAI Conference on Artificial Intelligence.

4) J. Wu, R. Hu, L. Ren, D. Li, Z. Huang, **Y. Zang**, et al. NRGL: Studying A Label Noise-Resistant Graph Learning Framework for Anomaly Detection When Meeting Heterophily. Thirty-Eighth AAAI Conference on Artificial Intelligence.

Patents

1) A social relationship mining method based on interaction graph propagation (first student inventor). China Patent. CN202210422953.1. 2022 Acceptance

2) Fraud detection method and device based on correlation fraud awareness (first student inventor). China Patent. CN202310244679.8. 2023 Acceptance.

3) A method and system for location place prediction for missing POI (co-inventor). China Patent. CN202211033841.3. 2022 Acceptance.

4) Missing POI identification method (co-inventor). China Patent. CN202210601769.3. 2022 Acceptance.

TECHNICAL SKILLS AND INTERESTS

Languages: IELTS Overall 6.5, Writing 7, Reading 7, Listening 6, Speaking 6.
Programming language: Python (master), LATEX(master), Javascript, C++.
Frameworks: Pytorch, Pytorch geometric, DGL, Networkx, Sklearn, Matplotlib.
Soft kits: Jupyter notebook, Pycharm, Overleaf, Powerpoint.
Cloud/Databases: Github, OneDrive, Google Drive&Colab.
Amateur interest: Swimming, Fitness, Skiing (beginner).

POSITIONS OF RESPONSIBILITY

•**Student member.** IEEE. *Feb.2023 - Feb.2024*

•**Student member.** IEEE Communications Society. *Feb.2023 - Feb.2024*

ACHIEVEMENTS

•**Scholarship.** Wuhan University Postgraduate Scholarship. *2020-2023*

•**Third prize.** Wuhan University 8th "Internet+" Innovation and Entrepreneurship Competition. *2022*
  – **Title:** Anti-telecom Fraud Big Data Platform Based on Edge-Cloud Collaboration. (translated)