

EDUCATION

Macquarie University, Australia

Ph.D. in Computer Science

Mar. 2021 – Mar. 2024

Macquarie University, Australia

M.Res. in Computer Science, Grade: 93/100

Jan. 2019 – Dec. 2019

Southwest University, China

B.E. in Computer Science, GPA: 3.71/4.00

Sep. 2014 – Jun. 2018

RESEARCH INTERESTS

• Graph Mining • Graph Neural Networks • Deep Learning • Fraud Detection • Social Computing

PUBLICATIONS

- [1] **Fanzhen Liu**, Zhao Li, Baokun Wang, Jia Wu, Jian Yang, Jiaming Huang, Yiqing Zhang, Weiqiang Wang, Shan Xue, Surya Nepal, and Quan Z. Sheng. “eRiskCom: An e-commerce risky community detection platform”. In: *The VLDB Journal* (**CORE¹ A***) (2022), pp. 1–17. DOI: 10.1007/s00778-021-00723-z.
- [2] Xing Su, Shan Xue, **Fanzhen Liu**, Jia Wu, Jian Yang, Chuan Zhou, Wenbin Hu, Cecile Paris, Surya Nepal, Di Jin, Quan Z. Sheng, and Philip S. Yu. “A Comprehensive Survey on Community Detection with Deep Learning”. In: *IEEE Transactions on Neural Networks and Learning Systems* (**CORE A***) (2022), early access. DOI: 10.1109/TNNLS.2021.3137396.
- [3] **Fanzhen Liu**, Shan Xue, Jia Wu, Chuan Zhou, Wenbin Hu, Cecile Paris, Surya Nepal, Jian Yang, and Philip S Yu. “Deep Learning for Community Detection: Progress, Challenges and Opportunities”. In: *the 29th International Joint Conference on Artificial Intelligence, (IJCAI)* (**CORE A*, 100+ Citations, Most Influential IJCAI Paper, Ranked 4th**). 2020, pp. 4981–4987. DOI: 10.24963/IJCAI.2020/693.
- [4] **Fanzhen Liu**, Jia Wu, Shan Xue, Chuan Zhou, Jian Yang, and Quanzheng Sheng. “Detecting the evolving community structure in dynamic social networks”. In: *World Wide Web Journal* (**CORE A**) 23 (2020), pp. 715–733. DOI: 10.1007/s11280-019-00710-z.
- [5] Sanmin Liu, Shan Xue, **Fanzhen Liu**, Jieren Cheng, Xiulai Li, Chao Kong, and Jia Wu. “Microcluster-Based Incremental Ensemble Learning for Noisy, Nonstationary Data Streams”. In: *Complexity* (**Impact Factor=2.833**) 2020 (2020), Art. no. 6147378. DOI: 10.1155/2020/6147378.
- [6] **Fanzhen Liu**, Jia Wu, Chuan Zhou, and Jian Yang. “Evolutionary Community Detection in Dynamic Social Networks”. In: *2019 International Joint Conference on Neural Networks (IJCNN)* (**CORE2020 A**). 2019, pp. 1–7. DOI: 10.1109/IJCNN.2019.8852006.
- [7] Zhen Su, **Fanzhen Liu**, Chao Gao, Shupeng Gao, and Xianghua Li. “Inferring infection rate based on observations in complex networks”. In: *Chaos, Solitons & Fractals* (**Impact Factor=5.944**) 107 (2018), pp. 170–176. DOI: https://doi.org/10.1016/j.chaos.2017.12.029.
- [8] **Fanzhen Liu**, Zhengpeng Chen, Yali Cui, Chen Liu, Xianghua Li, and Chao Gao. “A Hybrid Evolutionary Algorithm for Community Detection”. In: *the 16th International Conference on Web Intelligence (WI)*. 2017, pp. 469–475. DOI: 10.1145/3106426.3106477.

¹The conference and journal rankings are maintained by the Computing Research and Education Association of Australasia ([CORE](#)), which assesses major conferences and journals in the computing disciplines.

- [9] **Fanzhen Liu**, Jiaqi Zhong, Chen Liu, Chao Gao, and Xianghua Li. “A novel strategy of initializing the population size for ant colony optimization algorithms in TSP”. In: *the 13th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD)*. 2017, pp. 249–253. DOI: 10.1109/FSKD.2017.8393166.
- [10] Zhengpeng Chen, **Fanzhen Liu**, Chao Gao, Xianghua Li, and Zili Zhang. “An Enhanced Particle Swarm Optimization Based on Physarum Model for Community Detection”. In: *the 8th International Conference on Swarm Intelligence (ICSI)*. 2017, pp. 99–108. DOI: 10.1007/978-3-319-61833-3_11.
- [11] Mingxin Liang, **Fanzhen Liu**, Chao Gao, and Zili Zhang. “Robustness analysis of the complex network”. In: *the IEEE 6th Data Driven Control and Learning Systems Conference (DDCLS)*. 2017, pp. 638–643. DOI: 10.1109/DDCLS.2017.8068147.

POPULAR REPOSITORY

- **Awesome-Deep-Community-Detection** (150+ Stars & 50+ Forks)
The **most popular** repository on deep community detection, collecting papers, datasets, and implementations

RESEARCH INTERNSHIP

Graph-based Fraud Detection in E-commerce Scenarios

Jun. 2020 – Dec. 2020

Research Intern at Alibaba Group

- Working on **designing an efficient fraud-community detection platform to discover groups of fraudsters committing various forms of fraud (e.g., insurance fraud and fraudulent transactions) in e-commerce scenarios**, which will help regulators take measures for targeted control and safeguard the e-commerce industry from financial loss caused by fraud.
- This work has been involved in a paper published in **The VLDB Journal**, one of top journals in data science.

ACADEMIC SERVICES

- **Program Committee**
 - IJCAI-ECAI 2022 Survey Track
- **Journal Reviewer**
 - ACM Transactions on Knowledge Discovery from Data (TKDD)
 - ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)
 - Neural Networks
 - Neurocomputing
 - Knowledge-Based Systems
- **Conference Reviewer**
 - International Joint Conference on Artificial Intelligence (IJCAI), 2021-2022
 - IEEE International Conference on Data Mining (ICDM), 2019-2021
 - ACM International Conference on Information and Knowledge Management (CIKM), 2019
 - International Joint Conference on Neural Networks (IJCNN), 2020-2022

SCHOLARSHIPS & AWARDS

- International Macquarie University Research Excellence Scholarship, Macquarie University 2019–2024
- Higher Degree Research Rising Star, School of Computing, Macquarie University May 2022
- Most Influential IJCAI Paper (*Ranked 4th* among IJCAI-2020 papers) Feb. 2022
- Executive Dean’s Commendation for Academic Excellence, Macquarie University Apr. 2020
- Student Travel Award of IJCNN Jul. 2019
- First Prize of Excellent Undergraduate Scholarship, Southwest University (*Top 3%*) Dec. 2016 & Dec. 2017