

# QIAN CHANG

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## EDUCATION

### Central China Normal University

M. Mgt., Management Science and Engineering, supervised by X. Li, Average Score: 86.7

Wuhan, China

Sep. 2022 - Present

### Anhui University of Finance and Economics

B. Mgt., Project Costs, GPA: 4.31/5, Ranking: 3/124

Bengbu, China

Sep. 2018 - Jun. 2022

## RESEARCH INTERESTS

Deep Learning, Complex Systems, Data Science, Information Science

## PUBLICATIONS

- [1] **Q. Chang**, X. Li, X. F. Cheng. Graph retention networks for dynamic graphs, **arXiv preprint**. (2024). <https://arxiv.org/abs/2411.11259>
- [2] **Q. Chang**, X. Li, Z. Duan. Graph global attention network with memory: A deep learning approach for fake news detection, **Neural Networks**. (2024) 106115. <https://doi.org/10.1016/j.neunet.2024.106115> (SCI Q1)
- [3] **Q. Chang**, X. Li, Z. Duan. A novel approach for rumor detection in social platforms: Memory-augmented transformer with graph convolutional networks. **Knowledge-Based Systems**. (2024) 111625. <https://doi.org/10.1016/j.knosys.2024.111625> (SCI Q1)
- [4] **Q. Chang**, X. Li, X. F. Cheng. IRLDG: An efficient framework for dynamic rumor detection through inductive learning and multi-scale retention. **IEEE Transactions on Neural Networks and Learning Systems**. (Under Review) (SCI Q1)
- [5] H. Zhang, **Q. Chang**, S. Li, J. D. Huang. Determining the efficiency of the sponge city construction pilots in China based on the DEA-Malmquist model. **International Journal of Environmental Research and Public Health**. (2022) 11195. <https://doi.org/10.3390/ijerph191811195> (SCI Q1)

## RESEARCH EXPERIENCE

I was the **winner** of two international and national mathematical modeling competitions, and I was awarded National Postgraduate Scholarship by my country, **7** top-tier scholarships granted by Central China Normal University and Anhui University of Finance and Economics. See details in Honors and Awards below.

In terms of securing research funding and engaging with research projects, I was a **first/Second CI** of two national/provincial research projects, and have made significant contributions to top-tier research projects granted by National Natural Science Foundation of China (NSFC), China's Ministry of Education, and the Department of Science and Technology in Hubei Province. These engagements lead to **four** research publications in renowned journals, including **3** CORE A or SJR Q1 journal articles.

### Central China Normal University

1. **Cross-domain misinformation detection in social media based on adaptive GNN-RetNet (Fund around AUD \$6,500)**

Second CI

Nov. 2023 - Present

- We currently consider the problem of detection in social media caused by the structural heterogeneity that exists in the information propagation networks of cross-domain events, as well as the variations in users' endogenous information. We have now refined the complex system of cross-domain datasets.
- My main contributions: Conceptualization, Methodology, Software, Validation, Pending...

2. **Research on Efficient Dynamic Misinformation Detection in Large-Scale Social Networks**

Feb. 2023 - Mar. 2024

- In a further study of previous misinformation propagation networks, it was found that existing frameworks have challenges in reasoning about the efficiency of large-scale networks. We staged the dynamic propagation process of information in social networks to explore the specific appropriate stages at which blocking interventions should be taken.

We developed a more efficient framework with a graph-based framework that employs inductive learning and multi-scale retention mechanisms.

- My main contributions: Revision as first author is under review by IEEE Transactions on Neural Networks and Learning Systems. Conceptualization, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing.

### 3. Research on Automatic Rumor Detection in Social Media with Transformer and Graph-Based Deep Learning Frameworks

Feb. 2023 - Jan. 2024

- To obtain suitable structural representations of the networks, we further refined the transformation between graph-level local representation and global representation. We propose [GCNs-MT](#) based on Transformer architecture with enhanced detection capabilities. Rigorous evaluation on real Chinese and English datasets demonstrates the advanced capability of our model in recognizing and combating misinformation.
- My main contributions: [Published a paper as first author on Knowledge-Based Systems](#). Conceptualization, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing.

### 4. Research on Automatic Fake News Detection in Social Media Networks with Graph Convolutional Networks

Oct. 2022 - Jan. 2024

- We are committed to studying the reliability and authenticity of news propagated in social media, obtaining structural representations with graph-based deep learning frameworks. We proposed [GANM](#) that fuses global and local representations which yielded outstanding performance on real-world datasets. I employed the pre-trained word embeddings to construct a Chinese corpus dataset [Weibo](#) which contributes to the field.
- My main contributions: [Published a paper as first author on Neural Networks](#). Conceptualization, Methodology, Software, Validation, Writing – original draft, Writing – review & editing.

## Anhui University of Finance and Economics

### 1. Determining the efficiency of the sponge city construction pilots in China

Sep. 2020 - Sep. 2022

- Based on the data envelopment analysis (DEA) model, this study employed the related index factors such as economy, ecology, infrastructure, and the population of the pilot city as the input, and the macro factors of SCC as the output, to scientifically evaluate the relative efficiency between the SCC pilots in China.
- My main contributions: Conceptualization, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing.

## HONORS AND AWARDS

• National Postgraduate Scholarship (top 1%)	Central China Normal University	10/2024
• Outstanding Postgraduate Student Honor (top 5%)	Central China Normal University	10/2024
• First-class Academic Scholarship	Central China Normal University	09/2024
• Outstanding Graduate (top 5%)	Anhui University of Finance and Economics	06/2022
• First Place in the Recommended Graduate Student Exemptions (# 1)	Anhui University of Finance and Economics	09/2021
• Meritorious Winner of the Mathematical Contest in Modeling and Interdisciplinary Contest in Modeling	Anhui University of Finance and Economics	05/2021
• First Prize of China Undergraduate Mathematical Contest in Model	Anhui University of Finance and Economics	11/2020
• Second Prize of CYC China Undergraduate Mathematical Modeling Contest	Anhui University of Finance and Economics	07/2020
• First-class Academic Scholarship	Anhui University of Finance and Economics	09/2020

## EXTRACURRICULAR ACTIVITIES

• Captain of the College Badminton Team	Jun. 2019 - Sep. 2021
• Class P.E. Monitor	Jun. 2019 - Jun. 2022
• Leader of Social Practice Research Team	Jun. 2019 - Sep. 2019

## SKILLS

**Language:** Chinese (native), English (IELTS 6.5)

**Programming:** Python, PyTorch framework, MATLAB

**Tools and Software:** PyCharm, Jupyter Notebook, EViews, Vensim, IBM SPSS, ArcGIS