



Jinyu Cai

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Fujian Province Key Laboratory of Network Computing and Intelligent Information Processing
Fuzhou University

RESEARCH INTERESTS

Deep learning
Representation learning
Clustering analysis
Anomaly detection

EDUCATION

01/2023—Present Visiting Ph.D. student at King's College London.
09/2021—09/2022 Visiting Ph.D. student at The Chinese University of Hong Kong.
09/2020—Present Ph.D. at Computer Science and Technology,
College of Computer and Big Data, Fuzhou University.
09/2018—06/2020 M.S. at Computer System Structures (Master-Doctor combined program without
a Master degree),
College of Mathematics and Computer Sciences, Fuzhou University.
09/2014—06/2018 B.S. at Computer Science and Technology,
College of Mathematics and Computer Sciences, Fuzhou University.



AWARDS & HONORS

- 2021: National Scholarship for Ph.D. Students, China.
- 2020: Outstanding Freshman Scholarship for Ph.D. Students, Fuzhou University.
Outstanding League Cadres of Fuzhou University.
Excellent Academic Scholarship of Master Students, Fuzhou University.
- 2019: Research Assistant Scholarship for Master Students of Fuzhou University.
Outstanding Student Cadres of Fuzhou University.
The Third Prize of "Teddy Cup" Data Mining Challenge for College Students.
- 2018: Outstanding Freshman Scholarship for Master Students, Fuzhou University.
- 2017: First Prize Scholarship of Fuzhou University.
Outstanding League Cadres of Fuzhou University.
- 2016: Outstanding Student Cadres of Fuzhou University.
Social Work Scholarship of Fuzhou University.

JOURNAL & Conference REVIEWER

CVPR2023, ICCV2023
Engineering Applications of Artificial Intelligence
Knowledge-Based Systems
Applied Intelligence
Journal of Supercomputing
Neural Processing Letters

PUBLICATIONS

Selected Published Papers:

1. **J Cai**, J Fan. Perturbation learning based anomaly detection. *Advances in Neural Information Processing Systems (NeurIPS)*, 2022.
2. **J Cai**, J Fan, W Guo, S Wang, Y Zhang, Z Zhang. Efficient deep embedded subspace clustering. *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 1-10, 2022.
3. **J. Cai**, S. Wang, C. Xu, W. Guo. Unsupervised deep clustering via contractive feature representation and focal loss. *Pattern Recognition*, 123: 108386, 2022.
4. **J. Cai**, S. Wang, W. Guo. Unsupervised embedded feature learning for deep clustering with stacked sparse auto-encoder. *Expert Systems with Applications*, 186: 115729, 2021.
5. W. Guo, **J. Cai**, S. Wang. Unsupervised discriminative feature representation via adversarial auto-encoder. *Applied Intelligence*, 50(4): 1155-1171, 2020.
6. S. Wang, **J. Cai**, Q. Lin, W. Guo. An overview of unsupervised deep feature representation for text categorization. *IEEE Transactions on Computational Social Systems*, 6(3): 504-517, 2019.
7. C. Xu, R. Lin, **J. Cai**, S. Wang: Deep image clustering by fusing contrastive learning and neighbor relation mining. *Knowledge-Based Systems*, 238: 107967, 2022.

Working Papers:

8. **J. Cai**, S. Wang, Y. Zhang, W. Guo. Wasserstein embedding learning for deep clustering: a generative approach. *IEEE Transactions on Multimedia*. (Major revision)
9. **J. Cai**, W. Guo, J. Fan. Deep graph-level clustering using pseudo-label-guided mutual information maximization network. *IEEE Transactions on Big Data (TBD)*, 2023, Under Review.
10. **J. Cai**, W. Guo, J. Fan. Unsupervised deep discriminant analysis for graph-based clustering. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 2023, Under Review.
11. Y. Zhang, **J. Cai**, X. Lin, J. Fan. Dual deep subspace learning for unsupervised feature selection. *In Proceedings of the SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2023, Submitted.
12. Y. Zhang, Yan Sun, **J. Cai**, J. Fan. Deep graph-level orthogonal hypersphere compression for anomaly detection. *In Proceedings of the International Conference on Machine Learning (ICML)*, 2023, Submitted.

RESEARCH EXPERIENCES & PROJECTS

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| 01/2023-06/2023 | Visiting Ph.D. student at King's College London (KCL) (Supervisor: Yali Du). |
| 09/2021-09/2022 | Visiting Ph.D. student at The Chinese University of Hong Kong (CUHK, Shenzhen) and Shenzhen Research Institute of Big Data. (Supervisor: Jicong Fan). |
| Project 1 | Social Multimedia Big Data Collaborative Perception and Computing for Hot Events Across the Strait, Strait Joint Fund of the National Natural Science Foundation of China under grant No. U1705262. |
| Project 2 | Research on Efficient Data Fusion and Traffic Flow Forecast of Crowdsensing Internet of Vehicle, National Natural Science Foundation of China under grant No. 61672159. |
| Project 3 | Intelligent mining of cross-strait hot events across social networks and media, National Natural Science Foundation of China under grant No. U21A20472. |

ACTIVITIES

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| 12/2022 | Poster presentation in Advances in Neural Information Processing Systems (NeurIPS), New Orleans, Louisiana, 2022. |
| 10/2022 | Poster presentation in The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), New Orleans, Louisiana, 2022. |
| 04/2019 | Participant in the Vision And Learning SEminar (VALSE), Hefei, China, 2019. |