Jie XU（徐 杰）

PERSONAL INFORMATION

Institution: University of Electronic Science and Technology of China (UESTC)
Status: Ph.D. Candidate
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EDUCATION

- **University of Electronic Science and Technology of China (UESTC)** Sep 2021 – Dec 2024 (expected)
  Academic Ph.D. in Computer Science and Technology. Supervisor: Prof. Xiaofeng Zhu
- **University of Electronic Science and Technology of China (UESTC)** Sep 2016 – Jul 2021
  Bachelor and Master in Computer Science and Technology. Supervisor: Prof. Yazhou Ren

RESEARCH

The research during my Ph.D. was multi-view/modal/graph and self-supervised deep clustering. In these areas, I have tried to provide novel insights to the community, and some major results are briefly highlighted below:

- **Interpretability of multi-view learning** (ICCV'21, Inf.fus.'23). First try to disentangle view-common and view-private information in generative models that can produce interpretable multi-view representations.
- **Effectively learning with heterogeneous data** (CVPR'22, NeurIPS'23). Propose to learn multi-level features to avoid objective conflicts, and a general and theory-driven self-weighting contrastive learning framework that is adaptive to heterogeneous multi-view data.
- **Data incompleteness of multi-view learning** (AAAI'21, TIP'23). Propose an imputation-free deep framework for effectively handling incomplete multi-view data, and establish the connection between domain adaptation and multi-view by incorporating distribution discrepancy.
- **Algorithm robustness towards noisy views** (TKDE'22, CVPR'24). First to theoretically investigate consistency / complementarity / noise robustness for multi-view learning, and suggest to consider the side effects of noisy views for algorithm designs in practical scenarios.

My research has gained the attention of scholars in the same field and has been successfully applied by other scholars in practical application fields, such as medical data analysis, internet data analysis, etc. I summarized the source code and paper repositories hoping to promote academic research and applied research. The research topics that I am currently working on include:

- Single-&multi-view learning with robustness of noisy labels and noisy views
- Incomplete and false correspondence in multimodal learning with domain adaption
- Semi-supervised learning based on foundational pre-trained large models

PUBLICATIONS

Published Papers:

1. **Jie Xu**, Shuo Chen, Yazhou Ren, Xiaoshuang Shi, Heng Tao Shen, Gang Niu, Xiaofeng Zhu. Self-Weighted Contrastive Learning among Multiple Views for Mitigating Representation Degeneration. Annual Conference on Neural Information Processing Systems (**NeurIPS, CCF-A**), 2023.
2. **Jie Xu**, Yazhou Ren, Xiaoshuang Shi, Heng Tao Shen, Xiaofeng Zhu. UNTIE: Clustering Analysis with Disentanglement in Multi-view Information Fusion. **Information Fusion, JCR-Q1**, 2023.
3. **Jie Xu**, Chao Li, Liang Peng, Yazhou Ren, Xiaoshuang Shi, Heng Tao Shen, Xiaofeng Zhu. Adaptive Feature Projection with Distribution Alignment for Deep Incomplete Multi-view Clustering. IEEE Transactions on Image Processing (**TIP, CCF-A**), 2023.
4. **Jie Xu**, Yazhou Ren, Huayi Tang, Zhimeng Yang, Lili Pan, Yang Yang, Xiaorong Pu, Philip S. Yu, Lifang He. Self-Supervised Discriminative Feature Learning for Deep Multi-View Clustering. IEEE Transactions on Knowledge and Data Engineering (**TKDE, CCF-A**), 2022. (As of July/August/September/October 2023, this **highly cited paper** received enough citations to place it in the top 1% of the academic field of Engineering.)
5. **Jie Xu**, Huayi Tang, Yazhou Ren, Liang Peng, Xiaofeng Zhu, Lifang He. Multi-Level Feature Learning for Contrastive Multi-View Clustering. Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR, CCF-A**), 2022. (**Oral < 4.2%**)
6. **Jie Xu**, Chao Li, Yazhou Ren, Liang Peng, Yujie Mo, Xiaoshuang Shi, Xiaofeng Zhu. Deep Incomplete Multi-view Clustering via Mining Cluster Complementarity. Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI, CCF-A**), 2022.
7. **Jie Xu**, Yazhou Ren, Huayi Tang, Xiaorong Pu, Xiaofeng Zhu, Ming Zeng, Lifang He. Multi-VAE: Learning Disentangled View-common and View-peculiar Visual Representations for Multi-view Clustering. Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV, CCF-A**), 2021.

8. **Jie Xu**, Yazhou Ren, Guofeng Li, Lili Pan, Ce Zhu, Zenglin Xu. Deep embedded multi-view clustering with collaborative training. **Information Sciences, JCR-Q1**, 2021.
9. Xinyue Chen, **Jie Xu**, Yazhou Ren, Xiaorong Pu, Ce Zhu, Xiaofeng Zhu, Zhifeng Hao, Lifang He. Federated Deep Multi-View Clustering with Global Self-Supervision. ACM International Conference on Multimedia (**ACM MM, CCF-A**), 2023.
10. Yawen Ling, Jianpeng Chen, Yazhou Ren, Xiaorong Pu, **Jie Xu**, Xiaofeng Zhu, Lifang He. Dual Label-Guided Graph Refinement for Multi-View Graph Clustering. Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI, CCF-A**), 2023.
11. Liang Peng, Nan Wang, **Jie Xu**, Xiaofeng Zhu, Xiaoxiao Li. GATE: Graph CCA for Temporal SElf-supervised Learning for Label-efficient fMRI Analysis. IEEE Transactions on Medical Imaging (**TMI, JCR-Q1**), 2022.
12. Liang Peng, Yujie Mo, **Jie Xu**, Jialie Shen, Xiaoshuang Shi, Xiaoxiao Li, Heng Tao Shen, Xiaofeng Zhu. GRLC: Graph Representation Learning with Constraints. IEEE Transactions on Neural Networks and learning systems (**TNNLS, JCR-Q1**), 2022.
13. Yujie Mo, Liang Peng, **Jie Xu**, Xiaoshuang Shi, Xiaofeng Zhu. Simple unsupervised graph representation learning. Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI, CCF-A**), 2022. (**Oral $<$ 4.8%**)
14. Lujing Wang, Weifeng Yuan, Lu Zeng, **Jie Xu**, Yujie Mo, Xinxiang Zhao, Liang Peng. Dementia analysis from functional connectivity network with graph neural networks. Information Processing & Management (**IPM, JCR-Q1**), 2022.

Under-Review Papers:

1. **Jie Xu**, Yazhou Ren, Xiaolong Wang, Lei Feng, Zheng Zhang, Gang Niu, Xiaofeng Zhu. Investigating and Mitigating the Side Effects of Noisy Views in Self-Supervised Clustering Algorithms in Practical Multi-View Scenarios. CVPR 2024, CCF-A, submitted.
2. Caixuan Luo, **Jie Xu (Corresponding Author)**, Yazhou Ren, Junbo Ma, Xiaofeng Zhu. Simple Contrastive Multi-View Clustering with Data-Level Fusion. IJCAI 2024, CCF-A, submitted.
3. Xinyue Chen, Yazhou Ren, **Jie Xu**, Fangfei Lin, Xiaorong Pu, Lifang He. Bridging Gaps: Federated Multi-View Clustering in Heterogeneous Hybrid Views. IJCAI 2024, CCF-A, submitted.
4. Jianpeng Chen, Yawen Ling, **Jie Xu**, Yazhou Ren, Shudong Huang, Xiaorong Pu, Lifang He. Variational Graph Generator for Multi-View Graph Clustering. TNNLS, JCR-Q1, major revision.
5. Yazhou Ren, Jingyu Pu, Zhimeng Yang, **Jie Xu**, Guofeng Li, Xiaorong Pu, Philip S Yu, Lifang He. Deep clustering: A comprehensive survey. TNNLS, JCR-Q1, major revision.
6. Yazhou Ren, Xinyue Chen, **Jie Xu**, Jingyu Pu, Yonghao Huang, Xiaorong Pu, Ce Zhu, Xiaofeng Zhu, Zhifeng Hao, Lifang He. A Novel Federated Multi-View Clustering Method for Unaligned and Incomplete Data Fusion. Inf.fus., JCR-Q1, submitted.

ACADEMIC SERVICES

Program Committee Member of Conferences:

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022, 2023, 2024
- IEEE/CVF International Conference on Computer Vision (ICCV) 2023
- European Conference on Computer Vision (ECCV) 2022, 2024
- International Conference on Machine Learning (ICML) 2024
- AAAI Conference on Artificial Intelligence (AAAI) 2024
- ACM International Conference on Multimedia (ACM MM) 2023, 2024
- ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2022, 2023
- ACM International Conference on Information and Knowledge Management (CIKM) 2022, 2023
- SIAM International Conference on Data Mining (SDM) 2024

Journal Reviewer:

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Transactions on Neural Networks and learning systems (TNNLS)
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- IEEE Transactions on Computational Social Systems (TCSS)
- ACM Transactions on Knowledge Discovery from Data (TKDD)
- Information Processing and Management (IPM)
- Information Sciences
- Neurocomputing

RESEARCH PROJECT

- Meta-Learning Theory and Application Supporting Automated Machine Learning (PI: Xiaofeng Zhu) 2023
  Role: Developing the key techniques of multi-source/-modal integration based on meta-learning
- Research on Theory and Application of Multi-modal Data Fusion (PI: Xiaofeng Zhu) 2021
  Role: Developing multi-view/-modal representation learning and information fusion methods
- Research on multi-task clustering algorithms with self-paced learning (PI: Yazhou Ren) 2020
  Role: Developing multi-view clustering algorithms based on deep representation learning

TEACHING EXPERIENCE

- Multimedia Information Processing for Doctoral Program at UESTC Spring 2022
  Teaching Assistant, with Prof. Xiaofeng Zhu
- Computer Vision for Undergraduate Program at UESTC Spring 2021
  Teaching Assistant, with Prof. Yazhou Ren

HONORS AND AWARDS

- National Scholarship ($< 1.5\%$) 2019, 2022
- UESTC Academic Newcomer Award 2022
- UESTC Outstanding Graduate Students 2020
- UESTC Outstanding Graduate Thesis Award ($< 1.5\%$) 2020
- UESTC Scholarship for Outstanding Students 2017, 2018, 2019, 2021, 2022, 2023