Yao Ma

CONTACT INFORMATION	Office: GITC 4204, Newark, NJ 07102 E-mail: yao.ma@njit.edu	Homepage: https://web.njit.edu/~ym329/ Phone: 9735962656

POSITION	**Assistant Professor**, New Jersey Institute of Technology	Sep 2021 – Present

EDUCATION

Michigan State University

Doctor of Philosophy (Ph.D.) in Computer Science and Engineering   Jan 2017 – Jul 2021
  • Advisor: Dr. Jiliang Tang

Eindhoven University of Technology

Master of Science (M.S.) in Statistics, Probability & Operations Research   Oct 2016

Zhejiang University

Bachelor of Science (B.S.) in Mathematics & Applied Mathematics   Jul 2015

RESEARCH EXPERIENCE

Data Science and Engineering Lab, Michigan State University
PhD Student, Computer Science and Engineering Department   Jan 2017 – Jul 2021
  • Advisor: Dr. Jiliang Tang
Snap Research, Snap Inc.
Research Intern   May 2020 – Aug 2020
Data Science Lab, JD.com
Research Intern   May 2018 – Aug 2018
Data Science Lab, JD.com
Research Intern   Jun 2017 – Aug 2017
Philips Research, Philips
Research Intern   Jan 2016 – Oct 2016

GRANTS

- **NSF:** Collaborative Research: III: Medium: Graph Neural Networks for Heterophilous Data: Advancing the Theory, Models, and Applications, $1,200,000 (My share: $400,000), 10/01/2022-09/30/2026, Role: Site PI.
- **NSF:** CRII:III:Towards Advanced Filtering and Pooling Operations for Graph Neural Networks, $175,000, 07/01/2022-06/30/2024. Role: Sole PI.
- **NJIT Faculty Seed Grant:** Securing Competitive Multi-agent Reinforcement Learning with Adversarial Attacks and Graph Learning, $10,000 (My share: $5,000), 07/01/2022-06/30/2024, Role: Co-PI.
- **Katana Graph:** Unrestricted Gift Money, $30,000 (My share: $15,000), 09/01/2021-08/30/2022, Role: Leading PI.

PUBLICATIONS

Books or Book Chapters

- Yao Ma, Jiliang Tang. "Deep Learning on Graphs." *Cambridge University Press*, 2021.

- Yao Ma, Charu Aggarwal, Jiliang Tang. "Feature Engineering For Data Streams." *Book Chapter in Feature Engineering, CRC Press*, 2017.

Tutorials

- Yao Ma, Wei Jin, Yiqi Wang, Tyler Derr, Jiliang Tang. "Graph Neural Networks: Models and Applications." *Tutorial Forum, AAAI Conference on Artificial Intelligence (AAAI)*, 2021.

- Yao Ma, Yiqi Wang, Tyler Derr, Lingfei Wu, Tengfei Ma, Yu Rong, Tingyang Xu, Junzhou Huang, Wenbing Huang, Hong Cheng. "Deep Graph Learning: Foundations, Advances and Applications." In Proceedings of the 26th ACM SIGKDD *International Conference on Knowledge Discovery & Data Mining (KDD)*, 2020.

- Yao Ma, Wei Jin, Jiliang Tang, Lingfei Wu, Tengfei Ma. "Graph Neural Networks: Models and Applications." *Tutorial Forum, AAAI Conference on Artificial Intelligence (AAAI)*, 2020.

Conference and Journal Publications

- Wei Jin, Xiaorui Liu, Yao Ma, Charu Aggarwal, Jiliang Tang. "Feature Overcorrelation in Deep Graph Neural Networks: A New Perspective." *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD), 2022*

- Yao Ma, Xiaorui Liu, Neil Shah, Jiliang Tang. "Is Homophily a Necessity for Graph Neural Networks." *International Conference on Learning Representations (ICLR), 2022*

- Wei Jin, Xiaorui Liu, Xiangyu Zhao, Yao Ma, Neil Shah, Jiliang Tang. "Automated Self-Supervised Learning for Graphs." *International Conference on Learning Representations (ICLR), 2022*

- Xiaorui Liu, Jiayuan Ding, Wei Jin, Han Xu, Yao Ma, Zitao Liu, Jiliang Tang. "Graph Neural Networks with Adaptive Residual." *Conference on Neural Information Processing Systems (NeurIPS)*, 2021.

- Yao Ma, Xiaorui Liu, Tong Zhao, Yozen Liu, Jiliang Tang. "A Unified View of Graph Neural Networks as Graph Signal Denoising." *In Proceedings of the 2021 ACM on Conference on Information and Knowledge Management (CIKM)*, 2021.

- Wei Jin, Xiaorui Liu, Yao Ma, Tyler Derr, Charu Aggarwal, Jiliang Tang. "Graph Feature Gating Networks." *In Proceedings of the 2021 ACM on Conference on Information and Knowledge Management (CIKM)*, 2021.

- Yao Ma, Suhang Wang, Tyler Derr, Lingfei Wu, Jiliang Tang. "Attacking Graph Convolutional Networks via Rewiring." *In Proceedings of 27th ACM SIGKDDConference on Knowledge Discovery and Data Mining (SIGKDD)*, 2021.

- Xiaorui Liu, Wei Jin, Yao Ma, Yaxin Li, Hua Liu, Yiqi Wang, Ming Yan, Jiliang Tang. "Elastic Graph Neural Networks." *International Conference on Machine Learning (ICML)*, 2021.

- Wei Jin, Tyler Derr, Yiqi Wang, Yao Ma, Zitao Liu, Jiliang Tang. "Node Similarity Preserving Graph Convolutional Networks." *In Proceedings of the 14th International Conference on Web Search and Data Mining (WSDM)*, 2021.

- Wenqi Fan, Tyler Derr, Xiangyu Zhao, Yao Ma, Hui Liu, Jianping Wang, Jiliang Tang, Qing Li. "CopyAttack: Attacking Black-box Recommendations via Copying Cross-domain User Profiles." *In Proceedings of the IEEE 37th International Conference on Data Engineering (ICDE)*, 2021.

- Yao Ma, Juanhui Li, Yiqi Wang, Charu Aggarwal, Changdong Wang, Jiliang Tang. "Graph Pooling with Representativeness." *In Proceedings of 20th IEEE International Conference on Data Mining (ICDM)*, 2020.

- Wentao Wang, Tyler Derr, Yao Ma, Suhang Wang, Hui Liu, Zitao Liu, Jiliang Tang. "Learning from Incomplete Labeled Data via Adversarial Data Generation." *In Proceedings of 20th IEEE International Conference on Data Mining (ICDM)*, 2020.

- Wei Jin, Yao Ma, Xiaorui Liu, Xianfeng Tang, Suhang Wang, Jiliang Tang. "Graph Structure Learning for Robust Graph Neural Networks." *In Proceedings of 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD)*, 2020.

- Wenqi Fan, Yao Ma, Qing Li, Yuan He, Eric Zhao, Jiliang Tang, Dawei Yin. "A Graph Neural Network Framework for Social Recommendations." *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2020.

- Yao Ma, Ziyi Ding, Zhaochun Ren, Jiliang Tang, Dawei Yin. "Streaming Graph Neural Networks." *In Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR)*, 2020.

- Xiaoyang Wang, Yao Ma, Yiqi Wang, Wei Jin, Xin Wang, Jiliang Tang, Caiyan Jia, Jian Yu. "Traffic Flow Prediction via Spatial Temporal Graph Neural Network." *In Proceedings of the 29th International Conference on World Wide Web Companion (WWW)*, 2020.

- Wenqi Fan, Yao Ma, Han Xu, Xiaorui Liu, Jianping Wang, Qing Li, Jiliang Tang. "Deep Adversarial Canonical Correlation Analysis." *In Proceedings of the SIAM International Conference on Data Mining (SDM)*, 2020.

- Han Xu, Yao Ma, Haochen Liu, Debayan Deb, Hui Liu, Jiliang Tang, Anil Jain. "Adversarial Attacks and Defenses in Images, Graphs and Text: A Review." *International Journal of Automation and Computing, 17(2), pp.151-178.*, 2020.

- Tyler Derr, Yao Ma, Wenqi Fan, Xiaorui Liu, Charu Aggarwal, Jiliang Tang. "Epidemic Graph Convolutional Network." *In Proceedings of the 13th ACM Conference on Web Search and Data Mining (WSDM)*, 2020.

- Wenqi Fan, Yao Ma, Dawei Yin, Jianping Wang, Jiliang Tang, Qing Li. "Deep Social Collaborative Filtering." *In Proceedings of the 13th ACM Conference on Recommender Systems (RecSys)*, 2019.

- Wenqi Fan, Tyler Derr, Yao Ma, Dawei Yin, Jianping Wang, Jiliang Tang, Qing Li. "Deep Adversarial Social Recommendation." *In Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, 2019.

- Yao Ma, Suhang Wang, Charu C. Aggarwal, Jiliang Tang. "Graph Convolutional Networks with EigenPooling." *In Proceedings of 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD)*, 2019.

- Wenqi Fan, Yao Ma, Qing Li, Yuan He, Eric Zhao, Jiliang Tang, Dawei Yin. "Graph Neural Networks for Social Recommendation." *In Proceedings of the 28th International Conference on World Wide Web Companion (WWW)*, 2019.

- Yao Ma, Suhang Wang, Charu C. Aggarwal, Dawei Yin, Jiliang Tang. "Multi-dimensional Graph Convolutional Networks."*In Proceedings of SIAM International Conference on Data Mining (SDM)*, 2019.

- Tyler Derr, Yao Ma, Jiliang Tang. "Signed Graph Convolutional Neural Networks." *In Proceedings of the IEEE International Conference on Data Mining (ICDM)*, 2018.

- Yao Ma, Suhang Wang, Jiliang Tang. "Local and Global Information Preserved Network Embedding." *In Proceedings of IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, 2018.

- Yao Ma, Zhaochun Ren, Ziheng Jiang, Dawei Yin, Jiliang Tang. "Multidimensional Network Embedding with Hierarchical Structures." *In Proceedings of the 11th ACM International Conference on Web Search and Data Mining (WSDM)*, 2018.

- Yao Ma, Suhang Wang, Jiliang Tang. "Network Embedding with Centrality Information." *Ph.D Forum, The IEEE International Conference on Data Mining (ICDM)*, 2017.

Preprints and Submissions

- Yiqi Wang, Yao Ma, Charu Aggarwal, Jiliang Tang. "Non-IID Graph Neural Networks." *arXiv preprint arXiv:2005.12386*, 2020. (Submitted for publication and under review)

- Zhiwei Wang, Yao Ma, Zitao Liu, Jiliang Tang. "R-Transformer: Recurrent Neural Network Enhanced Transformer." *arXiv preprint arXiv:1907.05572*, 2019. (Submitted for publication and under review)

- Zhiwei Wang, Yao Ma, Jiliang Tang. "Linked Reccurent Neural Networks." *arXiv preprint arXiv:1808.06170*, 2018. (Submitted for publication and under review)

ACADEMIC HONORS & AWARDS	Outstanding Graduate Student Award, College of Engineering (2019-20), MSU FAST Fellowship (2020-21), MSU Student Registration Award, KDD'2020 Student Travel Grant, SIGIR'2020 Student Travel Award, AAAI'2020 Student Travel Award, KDD'2019 Student Travel Award, SDM'2019 ALSP scholarship, Eindhoven University of Technology, 2014-2016

TEACHING EXPERIENCE

New Jersey Institute of Technology
Instructor, Department of Computer Science

• CS 675 Introduction to Machine Learning	Spring, 2022
• CS 785 Deep Learning on Graphs	Fall, 2021

Michigan State University
Teaching Assistant, Computer Science & Engineering Department, MSU

• Data Mining	2019
• Data Structures and Algorithms	2018
• Big Data Analysis	2018

MENTORING

Data Analytics and Machine Intelligence Lab, New Jersey Institute of Technology

• Cong Qi, Ph.D. Computer Science, NJIT	Sep 2022 – Present
• Jialiang Li, Ph.D. Computer Science, NJIT	Sep 2022 – Present
• Hongliang Chi, Ph.D. Computer Science, NJIT	Sep 2021 – Present
• Siqi Jiang, Ph.D. Computer Science, NJIT	Jan 2022 – Present
• Mike Jeong, B.S. Computer Science, NJIT	Jan 2022 – Present
• Rajan Tripathi, B.S. Computer Science, NJIT	Jan 2022 – Present
• Amanda Guan, High School Student	Jun 2022 – Present

Data Science and Engineering Lab, Michigan State University

• Harry Shomer, Ph.D. Computer Science, MSU	Oct 2021 – Present
• Juanhui Li, Ph.D. Computer Science, MSU	Oct 2019 – Present
• Wei Jin, Ph.D. Computer Science & Engineering, MSU	Mar 2019 – Jun 2021
• Yiqi Wang, Ph.D. Computer Science & Engineering, MSU	Aug 2019 – Aug 2021
• Xiaoyang Wang, Ph.D. Computer Science, Beijing Jiaotong University	Dec 2018 – Dec 2019
• Wenqi Fan, Ph.D. Computer Science, City University of Hong Kong	Jun 2018 – Sep 2019
• Yongqi Han, B.S. Computer Science & Engineering, MSU	Nov 2018 – Dec 2019
• Charles L Green, B.S. Electrical Engineering and Computer Science, PSU	May 2019 – Jul 2019
• Hansheng Zhao, B.S. Computer Science & Engineering, MSU	Jan 2018 – Nov 2018
• Daniel Kobina Ofori-Dankwa, M.S. Computer Science & Engineering, MSU	Jan 2018 – May 2018

SERVICES

Conference and Workshop Chairships
- Proceedings Co-chair, ACM Conference on Knowledge Discovery and Data Mining (KDD)   2022
- Workshop Organizer, Machine Learning on Graphs (MLoG)@ICDM2022   2022
- Workshop Organizer, Machine Learning on Graphs (MLoG)@WSDM2022   2022

Session Chair
- Session Chair at KDD 2022   2022
  "Graph Mining"
- Session Chair at AAAI 2020   2020
  "Application: Social and Information Networks"

Senior Program Committee Member
- International Joint Conferences on Artificial Intelligence (IJCAI)   2021

Program Committee Member
- The Web Conference (WWW)   2022
- International Conference on Machine Learning (NeurIPS)   2022
- International Conference on Machine Learning (ICML)   2021-2022
- SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)   2021-2022
- International Conference on Learning Representations (ICLR)   2022
- International Conference on Information and Knowledge Management (CIKM)   2021
- International Joint Conferences on Artificial Intelligence (IJCAI)   2020
- Artificial Intelligence for Education (AI4EDU) @ AAAI   2020
- Deep Learning on Graphs: Methodologies and Applications (DLGMA) @ AAAI   2020
- AAAI Conference on Artificial Intelligence (AAAI)   2020 – 2021
- IEEE International Conference on Big Data (BigData)   2018 – 2021
- International Conference on Artificial Neural Networks (ICANN)   2019

Journal Reviewer
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Big Data
- IEEE Transactions on Knowledge Discovery from Data (TKDD)
- Knowledge and Information Systems (KAIS)
- Neurocomputing
- Applied Network Science (ANS)
- IEEE Journal of Biomedical and Health Informatics
- Information Processing and Management (IPM)
- Transactions on the Web (TWEB)

Volunteering
- Annual Biomedical Research Conference for Minority Students (ABRCMS)   Nov 2020
- 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD)   Aug 2020
- 34th AAAI Conference on Artificial Intelligence (AAAI)   Feb 2020
- 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD)   Aug 2019
- Mid-Michigan Symposium for Undergraduate Research Experiences (MID-SURE)   Jul 2019
- 11th ACM International Conference on Web Search and Data Mining (WSDM)   Feb 2018
- Volunteer of Summer Science Camp at Zhejiang University   Jul 2013
- Organizer of a voluntary math teaching program for a primary school   Sep 2012–Jul 2013

[CV compiled on 2022-08-23]