Tong Zhao

CONTACT INFORMATION

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RESEARCH INTERESTS

- Behavior modeling
- Anomaly detection
- Graph mining
- Graph machine learning

EDUCATION

University of Notre Dame, Notre Dame, IN, US — Aug. 2017 – present
- Ph.D. student in Computer Science and Engineering.
- Advisor: Dr. Meng Jiang; Expected to graduate in 2022. (GPA: 3.7/4)

Case Western Reserve University, Cleveland, OH, US — Aug. 2013 – May 2017
- Bachelor of Art in Mathematics. (GPA: 3.6/4)

PROFESSIONAL EXPERIENCES

Snap Inc., Santa Monica, CA, US — Jan. 2020 – May 2020
Research Intern
- Led a research project on graph data augmentation for graph machine learning. This work [P1] is under review at AAAI 2021.
- Helped implement a large scale graph neural network-based system for user representation learning and age inference. (**Used in production**)

Case Western Reserve University, Cleveland, OH, US — Sept. 2016 – May 2017
Peer Tutor
- Provided on-campus tutoring for undergraduate students in EECS courses.

Cassia Networks, San Jose, CA, US — Aug. 2016
Data analyst
- Analyzed signal strength data for indoor Bluetooth locating systems. Organized and analyzed CRM data for summarization of customer feedbacks.

Hanhai Investment, San Jose, CA, US — June 2016 – Aug. 2016
Market Assistant
- Analyzed data from the market and prospects. Arranged conferences to promote networking and investment activity for technology start-ups.

HONORS AND AWARDS

SIGIR Student Travel Grant, 29th ACM CIKM — 2020
Outstanding Teaching Assistant Honorable Mention, University of Notre Dame — 2019

REFEREED CONFERENCE PUBLICATIONS

[C6] **Tong Zhao**, Chuchen Deng, Kaifeng Yu, Tianwen Jiang, Daheng Wang, and Meng Jiang. "Error-bounded Graph Anomaly Loss for GNNs." In the 29th ACM International Conference on Information and Knowledge Management (**CIKM**). 2020.

[C5] Wenhao Yu, Mengxia Yu, **Tong Zhao**, and Meng Jiang. "Identifying Referential Intention with Heterogeneous Contexts." In Proceedings of the Web Conference (**WWW**). 2020.

[C4] Tianwen Jiang, Zhihan Zhang, **Tong Zhao**, Bing Qin, Ting Liu, Nitesh V. Chawla, and Meng Jiang. "CTGA: Graph-based Biomedical Literature Search." In IEEE International Conference on Bioinformatics and Biomedicine (**BIBM**). 2019.

[C3] Tianwen Jiang, **Tong Zhao**, Bing Qin, Ting Liu, Nitesh V. Chawla, and Meng Jiang. "Multi-input Multi-output Sequence Labeling for Joint Extraction of Fact and Condition Tuples from Scientific Text." In Proceedings of the Conference on Empirical Methods in Natural Language Processing (**EMNLP**). 2019.

[C2] Tianwen Jiang, **Tong Zhao**, Bing Qin, Ting Liu, Nitesh V. Chawla, and Meng

Jiang. "The Role of "Condition": A Novel Scientific Knowledge Graph Representation and Construction Model." In ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**). 2019.

[C1] **Tong Zhao**, Matthew Malir, and Meng Jiang. "Actionable Objective Optimization for Suspicious Behavior Detection on Large Bipartite Graphs." In IEEE International Conference on Big Data (**BigData**). 2018. (Oral)

Refereed Journal Publications

[J1] Tianwen Jiang, Qingkai Zeng, **Tong Zhao**, Bing Qin, Ting Liu, Nitesh Chawla, and Meng Jiang. "Biomedical Knowledge Graphs Construction from Conditional Statements." In IEEE/ACM Transactions on Computational Biology and Bioinformatics (**TCBB**), 2020.

Refereed Workshop Publications

[W4] **Tong Zhao**, Chuchen Deng, Kaifeng Yu, Tianwen Jiang, Daheng Wang, and Meng Jiang. "GNN-based Graph Anomaly Detection with Graph Anomaly Loss." In Workshop on Deep Learning on Graphs (DLG-KDD) at ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD). 2020.

[W3] **Tong Zhao***, Bo Ni*, Wenhao Yu, and Meng Jiang. "Early Fraud Detection with Augmented Graph Learning." In Workshop on Deep Learning on Graphs (DLG-KDD) at ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD). 2020. (* for equal contributions)

[W2] Daheng Wang, Zhihan Zhang, Yihong Ma, **Tong Zhao**, Tianwen Jiang, Nitesh V. Chawla, and Meng Jiang. "Learning Attribute-Structure Co-Evolutions in Dynamic Graphs." In Workshop on Deep Learning on Graphs (DLG-KDD) at ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD). 2020. (**Best Paper Award**)

[W1] Tianwen Jiang, **Tong Zhao**, Bing Qin, Ting Liu, Nitesh V. Chawla, and Meng Jiang. "Constructing Information-Lossless Biological Knowledge Graphs from Conditional Statements." In International Workshop on Data Mining in Bioinformatics (BioKDD) at ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD). 2019.

Preprints

[P5] **Tong Zhao**, Yozen Liu, Leonardo Neves, Oliver Woodford, Meng Jiang, and Neil Shah. "Data Augmentation for Graph Neural Networks." arXiv:2006.06830.

[P4] **Tong Zhao***, Bo Ni*, Wenhao Yu and Meng Jiang. "Early Anomaly Detection by Learning and Forecasting Behavior." arXiv:2010.10016.

[P3] Meng Jiang, Taeho Jung, Ryan Karl, and **Tong Zhao**. "Federated Dynamic GNN with Secure Aggregation." arXiv:2009.07351.

[P2] Yihao Hu, **Tong Zhao**, Zhiliang Xu, and Lizhen Lin. "Neural Time-Dependent Partial Differential Equation." arXiv:2009.03892.

[P1] Yao Ma, Xiaorui Liu, **Tong Zhao**, Yozen Liu, Jiliang Tang, and Neil Shah. "A Unified View on Graph Neural Networks as Graph Signal Denoising." arXiv:2010.01777.

Professional Services

Invited Conference PC member/Reviewer

- LXAI at ICML 2020
- NeurIPS 2020
- AAAI 2021
- IJCAI 2021

Invited Journal Reviewer

- Big Data Networks (specialty section of Frontiers in ICT, Frontiers in Digital Humanities, Frontiers in Big Data and Frontiers in Computer Science)