

# Tong Zhao

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CONTACT INFORMATION	355 Fitzpatrick Hall Department of Computer Science and Engineering, College of Engineering University of Notre Dame Notre Dame, IN 46556, USA	Phone: (+1) (216) 785-3351 E-mail: <a href="mailto:tzhao2@nd.edu">tzhao2@nd.edu</a> <a href="https://www.tzhao.io">https://www.tzhao.io</a>
RESEARCH INTERESTS	<ul style="list-style-type: none"><li>• Behavior modeling</li><li>• Anomaly detection</li><li>• Graph mining</li><li>• Graph machine learning</li></ul>	
EDUCATION	University of Notre Dame, Notre Dame, IN, US Aug. 2017 – present <ul style="list-style-type: none"><li>• Ph.D. student in Computer Science and Engineering.</li><li>• Advisor: Dr. Meng Jiang; Expected to graduate in 2022. (GPA: 3.7/4)</li></ul> Case Western Reserve University, Cleveland, OH, US Aug. 2013 – May 2017 <ul style="list-style-type: none"><li>• Bachelor of Art in Mathematics. (GPA: 3.6/4)</li></ul>	
PROFESSIONAL EXPERIENCES	Snap Inc., Santa Monica, CA, US Jan. 2020 – Aug. 2020 <i>Research Intern</i> <ul style="list-style-type: none"><li>• Led a research project on graph data augmentation for graph machine learning. The work is published at AAAI 2021 [C7].</li><li>• Helped implement a large scale graph neural network-based system for user representation learning and age inference. (<b>Used in production</b>)</li></ul> Case Western Reserve University, Cleveland, OH, US Sept. 2016 – May 2017 <i>Peer Tutor</i> <ul style="list-style-type: none"><li>• Provided on-campus tutoring for undergraduate students in EECS courses.</li></ul> Cassia Networks, San Jose, CA, US Aug. 2016 <i>Data analyst</i> <ul style="list-style-type: none"><li>• Analyzed signal strength data for indoor Bluetooth locating systems. Organized and analyzed CRM data for summarization of customer feedbacks.</li></ul> Hanhai Investment, San Jose, CA, US June 2016 – Aug. 2016 <i>Market Assistant</i> <ul style="list-style-type: none"><li>• Analyzed data from the market and prospects. Arranged conferences to promote networking and investment activity for technology start-ups.</li></ul>	
HONORS AND AWARDS	Snap Research Fellow, Snap Inc. 2020 SIGIR Student Travel Grant, 29th ACM CIKM 2020 Outstanding Teaching Assistant Honorable Mention, University of Notre Dame 2019	
REFEREED CONFERENCE PUBLICATIONS	[C7] <b>Tong Zhao</b> , Yozen Liu, Leonardo Neves, Oliver Woodford, Meng Jiang, and Neil Shah. “Data Augmentation for Graph Neural Networks.” In the Thirty-Fifth AAAI Conference on Artificial Intelligence ( <b>AAAI</b> ). 2021.  [C6] <b>Tong Zhao</b> , 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 ( <b>CIKM</b> ). 2020.  [C5] Wenhao Yu, Mengxia Yu, <b>Tong Zhao</b> , and Meng Jiang. “Identifying Referential Intention with Heterogeneous Contexts.” In Proceedings of the Web Conference ( <b>WWW</b> ). 2020.  [C4] Tianwen Jiang, Zhihan Zhang, <b>Tong Zhao</b> , Bing Qin, Ting Liu, Nitesh V. Chawla, and Meng Jiang. “CTGA: Graph-based Biomedical Literature Search.” In IEEE International Conference on Bioinformatics and Biomedicine ( <b>BIBM</b> ). 2019.  [C3] Tianwen Jiang, <b>Tong Zhao</b> , Bing Qin, Ting Liu, Nitesh V. Chawla, and Meng Jiang. “Multi-input Multi-output Sequence Labeling for Joint Extraction of Fact and	

	<p>Condition Tuples from Scientific Text.” In Proceedings of the Conference on Empirical Methods in Natural Language Processing (<b>EMNLP</b>). 2019.</p> <p>[C2] Tianwen Jiang, <b>Tong Zhao</b>, 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 (<b>KDD</b>). 2019.</p> <p>[C1] <b>Tong Zhao</b>, Matthew Malir, and Meng Jiang. “Actionable Objective Optimization for Suspicious Behavior Detection on Large Bipartite Graphs.” In IEEE International Conference on Big Data (<b>BigData</b>). 2018. (Oral)</p>
REFEREED JOURNAL PUBLICATIONS	<p>[J1] Tianwen Jiang, Qingkai Zeng, <b>Tong Zhao</b>, 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 (<b>TCBB</b>), 2020.</p>
REFEREED WORKSHOP PUBLICATIONS	<p>[W4] <b>Tong Zhao</b>, 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.</p> <p>[W3] <b>Tong Zhao*</b>, 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)</p> <p>[W2] Daheng Wang, Zhihan Zhang, Yihong Ma, <b>Tong Zhao</b>, 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. (<b>Best Paper Award</b>)</p> <p>[W1] Tianwen Jiang, <b>Tong Zhao</b>, 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.</p>
PREPRINTS	<p>[P4] <b>Tong Zhao*</b>, Bo Ni*, Wenhao Yu and Meng Jiang. “Early Anomaly Detection by Learning and Forecasting Behavior.” arXiv:2010.10016.</p> <p>[P3] Meng Jiang, Taeho Jung, Ryan Karl, and <b>Tong Zhao</b>. “Federated Dynamic GNN with Secure Aggregation.” arXiv:2009.07351.</p> <p>[P2] Yihao Hu, <b>Tong Zhao</b>, Zhiliang Xu, and Lizhen Lin. “Neural Time-Dependent Partial Differential Equation.” arXiv:2009.03892.</p> <p>[P1] Yao Ma, Xiaorui Liu, <b>Tong Zhao</b>, Yozen Liu, Jiliang Tang, and Neil Shah. “A Unified View on Graph Neural Networks as Graph Signal Denoising.” arXiv:2010.01777.</p>
PROFESSIONAL SERVICES	<p>Invited Conference PC member/Reviewer</p> <ul style="list-style-type: none"> <li>• LXAI at ICML 2020</li> <li>• AAAI 2021</li> <li>• NeurIPS 2020</li> <li>• IJCAI 2021</li> </ul> <p>Invited Journal Reviewer</p> <ul style="list-style-type: none"> <li>• Frontiers in Big Data</li> </ul>