Tong Zhao

CONTACT INFORMATION

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RESEARCH INTERESTS

Behavior modeling; Anomalous detection; Graph mining; Graph machine learning.

EDUCATION EXPERIENCE

University of Notre Dame, Notre Dame, IN, US — Aug. 2017 –
- Currently a Ph.D. student in Computer Science and Engineering.
- Advisor: Dr. Meng Jiang; Expected to graduate in 2022. (GPA: 3.67/4)

Case Western Reserve University, Cleveland, OH, US — Aug. 2013 – May 2017
- Bachelor of Art in Mathematics. (GPA: 3.57/4)

PUBLICATIONS

[C6] Wenhao Yu, Mengxia Yu, **Tong Zhao**, Meng Jiang. "Identifying Referential Intention with Heterogeneous Contexts." Proceeding of International World Wide Web Conference (**WWW**), 2020.

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

[C5] Tianwen Jiang, Zhihan Zhang, **Tong Zhao**, Bing Qin, Ting Liu, Nitesh V. Chawla and Meng Jiang. "CTGA: Graph-based Biomedical Literature Search." IEEE International Conference on Bioinformatics and Biomedicine (**BIBM**), 2019.

[C4] 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." Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2019.

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

[C3] 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." ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**), 2019.

[C2] **Tong Zhao**, Matthew Malir, and Meng Jiang. "Actionable Objective Optimization for Suspicious Behavior Detection on Large Bipartite Graphs." IEEE International Conference on Big Data (**BigData**), 2018. (Oral)

[C1] Daheng Wang, Meng Jiang, Xueying Wang, **Tong Zhao**, Qingkai Zeng, and Nitesh V. Chawla. "A Project Showcase for Planning Research Work towards Publishable Success." ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD**), 2018. (Demo)

RESEARCH & COURSE PROJECTS

Graph neural network for anomaly detection — Mar. 2019 –
- Seeking to combine the graph neural network with traditional unsupervised graph anomaly detection methods to jointly learn the user nodes' representation jointly from local node information and global graph structure.

Examining the vulnerability of density-based fraud detection methods Dec. 2018 –

- Studying adversarial review fraud versus density-based fraud detection methods such as Fraudar and CatchSync using a game-theoretical approach.

Bully buyer detection using actionable optimization Sept. 2017 – Apr. 2018

- Proposed and developed a matrix factorization-based optimization method for actionable bully detection. Improved F1 score by 24% over the state-of-the-art such as Fraudar and CatchSync. Published in BigData 2018 [C2].

CNN forward propagation acceleration using CUDA Jan. 2018 – May 2018

- In the course of advanced computer architecture.
- Utilized technique of parallel programming to decrease the overhead of memory transfers. Reduced the running time from $>$10000ms to $\sim$800ms.

Adaptive detection of mobile VPN disruption Sept. 2018 – Dec. 2018

- In course of graduate operating system.
- Proposed a network quality based adaptive detection method for mobile VPN disconnection. Reduced average detection delay from 18.95ms to 14.10 ms.

INTERNSHIP EXPERIENCE

Snap Inc., Santa Monica, CA, US Jan. 2020 – May 2020
Research Intern

- Leaded a research project on graph data augmentation for graph machine learning.

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 locations. Organized and analyzed CRM data.

Hanhai Investment, San Jose, CA, US June 2016 – Aug. 2016
Market Assistant

- Analyzed data from the market and prospects. Arranged conferences and meet ups to promote networking and investment activity for technology start-ups.

SKILLS

Languages: Python, Matlab, Java, SQL, etc.

Systems: SciPy, PyTorch, TensorFlow, Numba, etc.

Related Courses: Complexity and Algorithms, Scalable Graph Algorithms, etc.