

# MENG JIANG, PH.D.

Last updated June 29, 2020

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## WORK EXPERIENCE

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### Assistant Professor

2017 – *present*

University of Notre Dame  
Department of Computer Science and Engineering  
Center for Network and Data Science (CNDS)

### Postdoctoral Research Associate

2015 – 2017

University of Illinois at Urbana-Champaign  
Department of Computer Science  
Data and Information Systems Laboratory

## EDUCATION

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### Ph.D.

Tsinghua University, Computer Science

2015

Thesis: *Modeling Complex User Behaviors in Social Media*

Graduated with honors

### B.S.

Tsinghua University, Computer Science

2010

Graduated with honors

## HONORS AND AWARDS

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Best Paper Award at ISDSA

2020

ACM WSDM Conference Outstanding PC

2020

ND Global Gateway Faculty Research Award

2019

Tutorial Honorarium, ACM CIKM

2016

Tutorial Honorarium, IEEE ICDM

2015

Best Paper Finalist, ACM SIGKDD

2014

Travel Award, ACM SIGKDD

2014

Travel Award, PAKDD

2014

## SCHOLAR PAGES

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Google Scholar: <https://scholar.google.com/citations?user=LZIPfCkAAAAJ>

Citations

2008

h-index

20

i10-index

31

DBLP: [https://dblp.org/pers/hd/j/Jiang\\_0001:Meng](https://dblp.org/pers/hd/j/Jiang_0001:Meng)

## SPONSORED PROGRAMS

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Total Amount: \$1,386,151; Total Share: **\$615,671**

“CRII: III: Beyond Similarity Learning: Complementarity Learning for Contextual Behavior Modeling”

October 1, 2019 – September 30, 2021

Funding Vehicle: NSF IIS-1849816 (Highly Competitive)

Amount: **\$174,910**

Role: **Sole P.I.**

“SHF: Medium: Collaborative Research: Semantically-Enhanced Software Traceability for Supporting Human-Centric Tasks”

August 15, 2019 – August 14, 2023

Funding Vehicle: NSF CCF-1901059 (Competitive)

Amount: \$1,019,030 (Share: **\$336,280**)

Role: **Co-P.I.** with ND Profs. Huang and Metoyer (Comp. Sci. & Eng.)

“Digital Empires: Structured Biographical and Social Network Analysis of Early Chinese Empires”

May 1, 2019 – August 31, 2020

Funding Vehicle: Notre Dame RGG

Amount: \$43,811 (Share: **\$30,281**)

Role: **Co-P.I.** with ND Prof. Cai (History)

“Representation Learning for Modeling and Predicting User Engagement and Propensity for Conversion Through the Engagement Funnel”

January 21, 2019 – May 20, 2020

Funding Vehicle: Conde Nast

Amount: \$148,400 (Share: **\$74,200**)

Role: **Co-P.I.** with ND Prof. Chawla (Comp. Sci. & Eng.)

“III: Medium: Collaborative Research: StructNet: Constructing and Mining Structure-Rich Information Networks for Scientific Research”

July 1, 2017 – June 30, 2021

Funding Vehicle: NSF IIS-1705169

Amount: \$1,200,000

Role: Postdoctoral researcher supported by PI Jiawei Han (UIUC)

“III: Small: Multi-Dimensional Structuring, Summarizing and Mining of Social Media Data”

August 1, 2016 – July 31, 2020

Funding Vehicle: NSF IIS-1618481

Amount: \$500,000

Role: Postdoctoral researcher supported by PI Jiawei Han (UIUC)

(@ indicates supervised graduate students. \* indicates supervised undergraduate students.)

## PUBLICATIONS

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### *Invited Book Chapters*

- BC2 **Jiang, M.** “Behavior Modeling in Social Networks” Encyclopedia of Social Network Analysis and Mining, Springer, New York, NY, 2017.
- BC1 **Jiang, M.**, Cui, P. “Mining User Behaviors in Large Social Networks” Chapter 4, Big Data in Complex and Social Networks, Chapman & Hall/CRC Big Data Series, 2016.

### *Refereed Conference Papers* (10 ACM SIGKDD full papers, etc.)

- C42 Liu, Y., Lin, J., @Zeng, Q., **Jiang, M.**, Cleland-Huang, J. “Towards Semantically Guided Traceability”, in Proceedings of *IEEE International Requirements Engineering Conference (RE)*, August 2020. (RE@NEXT! track)
- C41 @Wang, D., **Jiang, M.**, Syed, M., Conway, O., Juneja, V., Subramanian, S., Chawla, N.V. “Calendar Graph Neural Networks for Modeling Time Structures in Spatiotemporal User Behaviors”, in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2020. (applied data science track with oral presentation, acceptance rate 5.8%=44/756)
- C40 @Yu, W., Wu, L., @Zeng, Q., Tao, S., Deng, Y., **Jiang, M.** “Crossing Variational Autoencoders for Answer Retrieval”, in Proceedings of *Annual Meeting of the Association for Computational Linguistics (ACL)*, 2020.
- C39 **Jiang, M.** “Improving Situational Awareness with Collective Artificial Intelligence over Knowledge Graphs”, in Proceedings of *Artificial Intelligence and Machine Learning for Multi-Domain Operations Applications II in SPIE Defense + Commercial Sensing Symposium*, 2020. (Oral presentation)
- C38 @Yu, W., \*Yu, M., @Zhao, T., **Jiang, M.** “Identifying Referential Intention with Heterogeneous Contexts”, in Proceedings of *The Web Conference (TheWebConf)*, 2020. (acceptance rate 19% = 217/1129)
- C37 @Yu, W., \*Peng, W., \*Shu, Y., @Zeng, Q., **Jiang, M.** “Experimental Evidence Extraction in Data Science with Hybrid Table Features and Ensemble Learning”, in Proceedings of *The Web Conference (TheWebConf)*, 2020. (acceptance rate 19% = 217/1129, won the first place at 14th Annual Poster Contest at ND CSE)
- C36 Tang, P., **Jiang, M.**, Xia, N., Pitera, J., Welser, J., Chawla, N.V. “Multi-label Patent Categorization with Non-local Attention-based Graph Convolutional Network”, in Proceedings of *AAAI Conference on Artificial Intelligence (AAAI)*, 2020. (acceptance rate 20.6% = 1591/7737)
- C35 Zhang, C., Yao, H., **Jiang, M.**, Li, Z., Chawla, N.V. “Few-Shot Knowledge Base Completion”, in Proceedings of *AAAI Conference on Artificial Intelligence (AAAI)*, 2020. (acceptance rate 20.6% = 1591/7737)

- C34 Yao, H., Zhang, C., Wei, Y., **Jiang, M.**, Wang, S., Chawla, N.V., Li, Z. “Graph Few-shot Learning via Knowledge Transfer”, in Proceedings of *AAAI Conference on Artificial Intelligence (AAAI)*, 2020. (acceptance rate 20.6% = 1591/7737)
- C33 @Ding, Y., @Wang, D., Weninger, T., **Jiang, M.** “Preserving Composition and Crystal Structure Information of Chemical Compounds in Atomic Embedding”, in Proceedings of *IEEE International Conference on Big Data (BigData)*, December 2019. (poster)
- C32 @Jiang, T., \*Zhang, Z., @Zhao, T., Qin, B., Liu, T., Chawla, N.V., **Jiang, M.** “CTGA: Graph-based Biomedical Literature Search”, in Proceedings of *IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, November 2019. (regular paper, acceptance rate 18% = 98/543)
- C31 @Jiang, T., @Zhao, T., Qin, B., Liu, T., Chawla, N.V., **Jiang, M.** “Multi-input Multi-output Sequence Labeling for Joint Extraction of Fact and Condition Tuples from Scientific Text” in Proceedings of *Conference on Empirical Methods in Natural Language Processing (EMNLP)*, November 2019. (acceptance rate 23%)
- C30 Wang, T., Xu, X., Xiong, J., **Jiang, M.**, Shi, Y. “MSU-Net: Multiscale Statistical U-Net for Real-time 3D Cardiac MRI Video Segmentation” in Proceedings of *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, October 2019. (acceptance rate 31%)
- C29 @Wang, D., @Jiang, T., Chawla, N.V., **Jiang, M.** “TUBE: Embedding Behavior Outcomes for Predicting Success” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2019. (research track with oral presentation, acceptance rate 9.2%=110/1200; **won the Best Paper Award** at the Annual Meeting of the International Society for Data Science and Analytics (ISDSA), winning rate 6.9%=2/29)
- C28 @Jiang, T., @Zhao, T., Qin, B., Liu, T., Chawla, N.V., **Jiang, M.** “The Role of Condition: A Novel Scientific Knowledge Graph Representation and Construction Model” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2019. (research track with poster presentation, acceptance rate 14.2%=170/1200)
- C27 @Wang, X., @Zhang, H., @Li, Q., Shi, Y., **Jiang, M.** “A Novel Unsupervised Approach for Precise Temporal Slot Filling from Incomplete and Noisy Temporal Contexts” in Proceedings of *The Web Conference (TheWebConf)*, May 2019. (acceptance rate 18.0%=225/1247, won the first place at 12th Annual Poster Contest at ND CSE)
- C26 \*Yu, W., Li, Z., @Zeng, Q., **Jiang, M.** “Tablepedia: Automating PDF Table Reading in an Experimental Evidence Exploration and Analytic System” in Proceedings of *The Web Conference (TheWebConf)*, May 2019. (acceptance rate 44.8%=26/58)
- C25 @Zhao, T., \*Malir, M., **Jiang, M.** “Actionable Objective Optimization for Suspicious Behavior Detection on Large Bipartite Graphs” in Proceedings of *IEEE International Conference on Big Data (BigData)*, December 2018. (acceptance rate 18.9%=98/518)

- C24 Tao, F., Zhang, C., Chen, X., **Jiang, M.**, Hanratty, T., Kaplan, L., Han, J. “Doc2Cube: Allocating Documents to Text Cube without Labeled Data” in Proceedings of *IEEE International Conference on Data Mining (ICDM)*, November 2018. (acceptance rate 11.1%=105/948)
- C23 Ding, Y., Liu, J., Xiong, J., **Jiang, M.**, Shi, Y. “Optimizing Boiler Control in Real-Time with Machine Learning for Sustainability” in Proceedings of *ACM International Conference on Information and Knowledge Management (CIKM)*, October 2018. (industry track, acceptance rate 26.0%=34/130)
- C22 Zhao, S., **Jiang, M.**, Liu, M., Qin, B., Liu, T. “CausalTriad: Toward Pseudo Causal Relation Discovery and Hypotheses Generation from Medical Text Data” in Proceedings of *ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics (BCB)*, August-September 2018. (acceptance rate 31.1%=46/148)
- C21 @Wang, D., **Jiang, M.**, @Wang, X., @Zhao, T., @Zeng, Q., Chawla, N.V. “A Project Showcase for Planning Research Work towards Publishable Success” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2018. (demo track)
- C20 @Wang, D., **Jiang, M.**, @Zeng, Q., @Eberhart, Z., Chawla, N.V. “Multi-Type Itemset Embedding for Learning Behavior Success” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2018. (acceptance rate 10.9%=107/983)
- C19 **Jiang, M.**, Li, Q., Zhang, X., Qu, M., Hanratty, T., Gao, J., Han, J. “TruePIE: Discovering Reliable Patterns in Pattern-Based Information Extraction” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2018. (acceptance rate 10.9%=107/983)
- C18 Zhang, C., Tao, F., Chen, X., Shen, J., **Jiang, M.**, Sadler, B., Vanni, M., Han, J. “TaxoGen: Constructing Topical Concept Taxonomy by Adaptive Term Embedding and Clustering” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2018. (acceptance rate 10.9%=107/983)
- C17 Zhao, S., **Jiang, M.**, Yuan, Q., Qin, B., Liu, T., Zhai, C.X. “ContextCare: Incorporating Contextual Information Networks to Representation Learning in Medical Forum Data” in Proceedings of *International Joint Conference on Artificial Intelligence (IJCAI)*, August 2017. (acceptance rate 26.0%=660/2540)
- C16 **Jiang, M.**, Shang, J., Cassidy, T., Ren, X., Kaplan, L., Hanratty, T., Han, J. “MetaPAD: Meta Pattern Discovery from Massive Text Corpora” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2017. (acceptance rate 13.7%=130/748)
- C15 Kuang, K., Cui, P., Li, B., **Jiang, M.**, Yang, S., Wang, F. “Estimating Treatment Effect in the Wild via Differentiated Confounder Balancing” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, August 2017. (acceptance rate 13.7%=130/748)
- C14 Ren, X., Shen, J., Qu, M., Wang, X., Wu, Z., Zhu, Q., **Jiang, M.**, Tao, F., Sinha, S., Liem, D., Ping, P., Weinshilboum, R., Han, J. “LifeNet: A Structured

- Network-Based Knowledge Exploration and Analytics System for Life Sciences” in Proceedings of *Annual Meeting of the Association for Computational Linguistics* (ACL), July-August 2017. (demo track)
- C13 Kuang, K., Cui, P., Li, B., **Jiang, M.**, Yang, S., Wang, F. “Treatment Effect Estimation with Data-Driven Variable Decomposition” in Proceedings of *AAAI Conference on Artificial Intelligence* (AAAI), February 2017. (acceptance rate 24.6%=638/2590)
- C12 Kuang, K., **Jiang, M.**, Cui, P., Yang, S. “Steering Social Media Promotions with Effective Strategies” in Proceedings of *IEEE International Conference on Data Mining* (ICDM), November 2016. (acceptance rate 19.6%=177/904)
- C11 Gui, H., Liu, J., Tao, F., **Jiang, M.**, Norick, B., Han, J. “Large-Scale Embedding Learning in Heterogeneous Event Data” in Proceedings of *IEEE International Conference on Data Mining* (ICDM), November 2016. (acceptance rate 19.6%=177/904)
- C10 **Jiang, M.**, Faloutsos, C., Han, J. “CatchTartan: Representing and Summarizing Dynamic Multicontextual Behaviors” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), August 2016. (acceptance rate 8.9%=70/784)
- C9 **Jiang, M.**, Cui, P., Yuan, N.J., Xie, X., Yang, S. “Little is Much: Bridging Cross-Platform Behaviors through Overlapped Crowds” in Proceedings of *AAAI Conference on Artificial Intelligence* (AAAI), February 2016. (acceptance rate 25.8%=550/2132)
- C8 **Jiang, M.**, Beutel, A., Cui, P., Hooi, B., Yang, S., Faloutsos, C. “A General Suspiciousness Metric for Dense Blocks in Multimodal Data” in Proceedings of *IEEE International Conference on Data Mining* (ICDM), November 2015. (acceptance rate 18.1%=146/807)
- C7 **Jiang, M.**, Cui, P., Beutel, A., Faloutsos, C., Yang, S. “CatchSync: Catching Synchronized Behavior in Large Directed Graphs” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), August 2014. (selected as **best paper finalist**, acceptance rate 14.6%=151/1036)
- C6 **Jiang, M.**, Cui, P., Wang, F., Xu, X., Zhu, W., Yang, S. “FEMA: Flexible Evolutionary Multi-Faceted Analysis for Dynamic Behavioral Pattern Discovery” in Proceedings of *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), August 2014. (acceptance rate 14.6%=151/1036)
- C5 **Jiang, M.**, Cui, P., Beutel, A., Faloutsos, C., Yang, S. “Inferring Strange Behavior from Connectivity Pattern in Social Networks” in Proceedings of *Pacific-Asia Conference on Knowledge Discovery and Data Mining* (PAKDD), April 2014. (oral long, acceptance rate 10.8%=40/371)
- C4 **Jiang, M.**, Cui, P., Beutel, A., Faloutsos, C., Yang, S. “Detecting Suspicious Following Behavior in Multimillion-Node Social Networks” in Proceedings of *International Conference on World Wide Web* (WWW), April 2014. (poster track, acceptance rate 48.7%=110/226)
- C3 **Jiang, M.**, Cui, P., Wang, F., Yang, Q., Zhu, W., Yang, S. “Social Recommendation across Multiple Relational Domains” in Proceedings of *ACM In-*

*ternational Conference on Information and Knowledge Management (CIKM)*, October 2012. (acceptance rate 13.4%=146/1088)

- C2 **Jiang, M.**, Cui, P., Liu, R., Yang, Q., Wang, F., Zhu, W., Yang, S. “Social Contextual Recommendation” in *Proceedings of ACM International Conference on Information and Knowledge Management (CIKM)*, October 2012. (acceptance rate 13.4%=146/1088)
- C1 Liu, L., Tang, J., Han, J., **Jiang, M.**, Yang, S. “Mining Topic-Level Influence in Heterogeneous Networks” in *Proceedings of ACM International Conference on Information and Knowledge Management (CIKM)*, October 2010. (acceptance rate 13.3%=126/945)

*Refereed Journal Papers* (6 IEEE Trans. on Knowledge & Data Eng. (TKDE), etc.)

- J19 @Wang, X., **Jiang, M.** “Precise Temporal Slot Filling via Truth Finding with Data-Driven Commonsense” *Knowledge and Information Systems*. In press, accepted June 2020. (IF=2.397 in 2018)
- J18 **Jiang, M.**, Ammerman, B.A., @Zeng, Q., Jacobucci, R., Brodersen, A. “Phrase-level Pairwise Topic Modeling to Uncover Helpful Peer Responses to Online Suicidal Crises” *Humanities & Social Sciences Communications* (formerly known as *Nature Palgrave Communications*). In press, accepted May 2020. (IF=n/a)
- J17 Liu, J., Xu, X., **Jiang, M.**, Shi, Y. “Binarizing Weights Wisely for Edge Intelligence: Guide for Partial Binarization of Deconvolution-Based Generators” *Transactions on Computer-Aided Design of Integrated Circuits and Systems*. In press, accepted March 2020. (IF=2.402 in 2018)
- J16 Zhou, S., Hu, Z., Gu, W., **Jiang, M.**, Chen, M., Hong, Q., Booth, C. “Combined Heat and Power System Intelligent Economic Dispatch: A Deep Reinforcement Learning Approach” *International Journal of Electrical Power and Energy Systems*. In press, accepted March 2020. (IF=4.418 in 2018)
- J15 @Jiang, T., @Zeng, Q., @Zhao, T., Qin, B., Liu, T., Chawla, N.V., **Jiang, M.** “Biomedical Knowledge Graphs Construction from Conditional Statements” *IEEE/ACM Transactions on Computational Biology and Bioinformatics*. In press, accepted March 2020. (IF=2.896 in 2018)
- J14 Zhou, S., Hu, Z., Zhong, Z., He, D., **Jiang, M.** “An Integrated Energy System Operating Scenarios Generator based on Generative Adversarial Network” *Sustainability*. 11:23, 6699, November 2019. (IF=2.592 in 2018)
- J13 Kuang, K., Cui, P., Li, B., **Jiang, M.**, Yang, S. “Treatment Effect Estimation via Differentiated Confounder Balancing and Regression” *ACM Transactions on Knowledge Discovery from Data*. 14:1, 1-25, December 2019. (IF=n/a)
- J12 Zhou, S., Hu, Z., Gu, W., **Jiang, M.**, Zhang, X.P. “Artificial Intelligence based Smart Energy Community Management: A Reinforcement Learning Approach” *CSEE Journal of Power and Energy Systems*. 5:1, 1-10, March 2019. (IF=2.680 in 2018)
- J11 Kuang, K., **Jiang, M.**, Cui, P., Luo, H., Yang, S. “Effective Promotional Strategies Selection in Social Media: A Data-Driven Approach” *IEEE Transactions on Big Data*. 4:4, 487-501, December 2018. (IF=n/a)

- J10 Shang, J., Liu, J., **Jiang, M.**, Ren, X., Voss, C.R., Han, J. “Automated Phrase Mining from Massive Text Corpora” *IEEE Transactions on Knowledge and Data Engineering*. 30:10, 1825-1837, October 2018. (IF=3.857 in 2018)
- J9 Shang, J., **Jiang, M.**, Tong, W., Xiao, J., Peng, J., Han, J. “DPPred: An Effective Prediction Framework with Concise Discriminative Patterns” *IEEE Transactions on Knowledge and Data Engineering*. 30:7, 1226-1239, July 2018. (IF=3.857 in 2018)
- J8 Gui, H., Liu, J., Tao, F., **Jiang, M.**, Norick, B., Kaplan, L., Han, J. “Embedding Learning with Events in Heterogeneous Information Networks” *IEEE Transactions on Knowledge and Data Engineering*. 29:11, 2428-2441, July 2017. (IF=3.857 in 2018)
- J7 **Jiang, M.**, Cui, P., Beutel, A., Faloutsos, C., Yang, S. “Inferring Lockstep Behavior from Connectivity Pattern in Large Graphs” *Knowledge and Information Systems*. 48:2, 399-428, August 2016. (IF=2.397 in 2018)
- J6 **Jiang, M.**, Cui, P., Beutel, A., Faloutsos, C., Yang, S. “Catching Synchronized Behaviors in Large Networks: A Graph Mining Approach” *ACM Transactions on Knowledge Discovery from Data - Special Issue on SIGKDD 2014*. 10:4, 35:1-35:27, July 2016. (IF=3.291 in 2018)
- J5 **Jiang, M.**, Beutel, A., Cui, P., Hooi, B., Yang, S., Faloutsos, C. “Spotting Suspicious Behaviors in Multimodal Data: A General Metric and Algorithms” *IEEE Transactions on Knowledge and Data Engineering*. 28:8, 2187-2200, April 2016. (IF=3.857 in 2018)
- J4 **Jiang, M.**, Cui, P., Yang, S. “Suspicious Behavior Detection: Current Trends and Future Directions” *IEEE Intelligent Systems*. 31:1, 31-39, January-February 2016. (IF=4.464 in 2018)
- J3 **Jiang, M.**, Cui, P., Chen, X., Wang, F., Zhu, W., Yang, S. “Social Recommendation with Cross-Domain Transferable Knowledge” *IEEE Transactions on Knowledge and Data Engineering*. 27:11, 3084-3097, November 2015. (IF=3.857 in 2018)
- J2 **Jiang, M.**, Cui, P., Wang, F., Zhu, W., Yang, S. “Scalable Recommendation with Social Contextual Information” *IEEE Transactions on Knowledge and Data Engineering*. 26:11, 2789-2802, November 2014. (IF=3.857 in 2018)
- J1 Liu, L., Zhu, F., **Jiang, M.**, Han, J., Sun, L., Yang, S. “Mining Diversity on Social Media Networks” *Multimedia Tools and Applications*. 56:1, 179-205, January 2012. (IF=2.101 in 2018)

#### *Refereed Workshop Papers*

- W9 \*Zhou, Y., @Zhao, T., **Jiang, M.** “A Probabilistic Model with Commonsense Constraints for Pattern-based Temporal Fact Extraction”, in the *Workshop on Fact Extraction and Verification (FEVER)* in conjunction with *Annual Meeting of the Association for Computational Linguistics (ACL)*, 2020.
- W8 @Yu, W., Wu, L., Tao, S., Deng, Y., @Zeng, Q., **Jiang, M.** “Generating Helpful Responses for Intelligent Tech Support”, in the *Reasoning for Complex QA Workshop (RCQA)* in conjunction with *AAAI Conference on Artificial Intelligence (AAAI)*, 2020.



- W7 Yao, H., Zhang, C., Wei, Y., **Jiang, M.**, Wang, S., Chawla, N.V., Li, Z. “Graph Few-shot Learning via Knowledge Transfer”, in the *Graph Representation Learning Workshop* (GRL) in conjunction with *Conference on Neural Information Processing Systems* (NeurIPS), 2019.
- W6 @Zeng, Q., \*Yu, M., @Yu, W., Xiong, J., Shi, Y., **Jiang, M.** “Faceted Hierarchy: A New Graph Type to Organize Scientific Concepts and a Construction Method”, in the *Workshop on Graph-Based Natural Language Processing* (TextGraphs) in conjunction with *Conference on Empirical Methods in Natural Language Processing* (EMNLP), 2019.
- W5 \*Ma, Y., @Zeng, Q., @Jiang, T., Cai, L., **Jiang, M.** “A Study of Person Entity Extraction and Profiling from Classical Chinese Historiography”, in the *International Workshop on Entity REtrieval* (EYRE) in conjunction with *ACM International Conference on Information and Knowledge Management* (CIKM), 2019.
- W4 @Jiang, T., @Zhao, T., Qin, B., Liu, T., Chawla, N.V., **Jiang, M.** “Constructing Information-Lossless Biological Knowledge Graphs from Conditional Statements” in the 18th *International Workshop on Data Mining in Bioinformatics* (BioKDD) in conjunction with *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), 2019.
- W3 @Wang, D., **Jiang, M.**, @Wang, X., Chawla, N.V., Bruns, P. “Multifaceted Event Analysis on Cross-Media Network Data” in the *International Workshop on Heterogeneous Networks Analysis and Mining* (HeteroNAM) in conjunction with *ACM Conference on Web Search and Data Mining* (WSDM), February 2018.
- W2 Chen, L.W., Mangipudi, B., Bandlamudi, J., Sehgal, R., Hao, Y., **Jiang, M.** “Integrating Knowledge from Latent and Explicit Features for Triple ScoringTeam Radicchio’s Triple Scorer at WSDM Cup 2017” in the 10th *ACM Conference on Web Search and Data Mining Notebook Papers* (WSDM), February 2017.
- W1 **Jiang, M.** “Catching Social Media Advertisers with Strategy Analysis” in the 1st *International Workshop on Computational Methods for CyberSafety* in conjunction with *ACM International Conference on Information and Knowledge Management* (CIKM), 2016.

#### *Refereed Tutorials*

- T9 **Jiang, M.**, Shang, J. “Scientific Text Mining and Knowledge Graphs” at the *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), August 2020.
- T8 Zhang, C., **Jiang, M.**, Zhang, X., Chawla, N.V. “Multi-modal Network Representation Learning: Methods and Applications” at the *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), August 2020.
- T7 Zhang, C., **Jiang, M.**, Zhang, X., Chawla, N.V. “Multi-modal Network Representation Learning: Methods and Applications” at the *SIAM International Conference on Data Mining* (SDM), May 2020. (accepted but cancelled due to coronavirus pandemic)

- T6 **Jiang, M.**, Kumar, S., Subrahmanian, V.S., Faloutsos, C. “Data-Driven Approaches towards Malicious Behavior Modeling” at the *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), August 2017.
- T5 Shang, J., **Jiang, M.**, Ren, X., Han, J. “Mining Entity-Relation-Attribute Structures from Massive Text Data” at the *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), August 2017.
- T4 Ren, X., **Jiang, M.**, Shang, J., Han, J. “Building Structured Databases of Factual Knowledge from Massive Text Data” at the *ACM SIGMOD International Conference on Management of Data* (SIGMOD), May 2017.
- T3 Ren, X., **Jiang, M.**, Shang, J., Han, J. “Constructing Structured Information Networks from Massive Text Corpora” at the *International World Wide Web Conference* (WWW), April 2017.
- T2 **Jiang, M.**, Cui, P., Han, J. “Data-Driven Behavioral Analytics: Observations, Representations and Models” at the *ACM International Conference on Information and Knowledge Management* (CIKM), October 2016.
- T1 **Jiang, M.**, Cui, P. “Behavior Modeling in Social Networks: From Micro to Macro” at the *IEEE International Conference on Data Mining* (ICDM), November 2015.

## PUBLICATIONS UNDER REVIEW

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### *Refereed Conference Papers*

- CR15 @Zhao, T., Liu, Y., Woodford, O., Neves, L., **Jiang, M.**, Shah, N. “Improving Graph Neural Network Generalization with Data Augmentation”, under review at *Conference on Neural Information Processing Systems* (NeurIPS), 2020.
- CR14 **Jiang, M.**, Jung, T., Karl, R., @Zhao, T. “Federated Dynamic GNN with Secure Aggregation”, under review at *Conference on Neural Information Processing Systems* (NeurIPS), 2020.
- CR13 @Yu, W., Wu, L., Deng, Y., Mahindru, R., @Zeng, Q., Guven, S., **Jiang, M.** “Technical Question Answering across Tasks and Domains”, under review at *Conference on Empirical Methods in Natural Language Processing* (EMNLP), 2020.
- CR12 \*Dong, X., @Yu, W., Zhu, C., **Jiang, M.** “Injecting Entity Types into Entity-Guided News Generation”, under review at *Conference on Empirical Methods in Natural Language Processing* (EMNLP), 2020.
- CR11 Zhu, C., Hinthorn, W., Xu, R., @Zeng, Q., Zeng, M., Huang, X., **Jiang, M.** “Boosting Factual Correctness of Abstractive Summarization with Knowledge Graph”, under review at *Conference on Empirical Methods in Natural Language Processing* (EMNLP), 2020.
- CR10 @Zeng, Q., @Yu, W., \*Yu, M., @Jiang, T., Weninger, T., **Jiang, M.** “Tri-Train: Automatic Pre-fine Tuning between Pre-training and Fine-tune Training for SciNER”, under review at *Conference on Empirical Methods in Natural Language Processing* (EMNLP), 2020.

- CR9 @Zeng, Q., \*Yu, M., @Yu, W., @Jiang, T., Weninger, T., **Jiang, M.** “Validating Label Consistency in NER Data Annotation”, under review at *Conference on Empirical Methods in Natural Language Processing* (EMNLP), 2020.
- CR8 Zhang, C., Yu, L., Saebi, M., **Jiang, M.**, Chawla, N.V. “Few-Shot Multi-Hop Relation Reasoning over Knowledge Bases”, under review at *Conference on Empirical Methods in Natural Language Processing* (EMNLP), 2020.
- CR7 \*Alaphat, A., **Jiang, M.** “SmartFund: Predicting Research Outcomes with Machine Learning and Natural Language Processing”, under review at *IEEE International Conference on Data Science and Advanced Analytics* (DSAA), 2020.
- CR6 @Anuyah, O., @Douailly-Backman, J.-P., Metoyer, R., **Jiang, M.** “Modeling User Behaviors to Predict HatefulnessLevel of Posts on Social Media”, under review at *IEEE International Conference on Data Science and Advanced Analytics* (DSAA), 2020.
- CR5 Schnur, J., Karl, R., Martinez, A.G., **Jiang, M.**, Chawla, N.V. “Imputing Common Growth Snapshots in Child Health Development: A Tensor Decomposition Approach”, under review at *ACM International Conference on Information and Knowledge Management* (CIKM), 2020.
- CR4 Guo, Z., @Yu, W., Zhang, C., **Jiang, M.**, Chawla, N.V. “GraSeq: Graph and Sequence Fusion Learning for Molecular Property Prediction”, under review at *ACM International Conference on Information and Knowledge Management* (CIKM), 2020.
- CR3 @Wang, D., \*Zhang, Z., \*Ma, Y., @Zhao, T., @Jiang, T., Chawla, N.V., **Jiang, M.** “CoEvoGNNs: Modeling Co-evolution of Attributed and Structural Information in Dynamic Graph Sequence”, under review at *ACM International Conference on Information and Knowledge Management* (CIKM), 2020.
- CR2 @Zhao, T., \*Deng, C., \*Yu, K., @Jiang, T., @Wang, D., **Jiang, M.** “Error-bounded Graph Anomaly Loss for GNNs”, under review at *ACM International Conference on Information and Knowledge Management* (CIKM), 2020.
- CR1 Syed, M., @Wang, D., **Jiang, M.**, Conway, O., Juneja, V., Subramanian, S., Chawla, N.V. “Overcoming Data Sparsity in Predicting User Characteristics from Behavior through Graph Embeddings”, under review at *The IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining* (ASONAM), 2020.

#### *Refereed Journal Papers*

- JR6 Saebi, M., Krieg, S., Zhang, C., **Jiang, M.**, Chawla, N.V. “Heterogeneous Relational Reasoning in Knowledge Graphs with Reinforcement Learning”, under review at *Transactions on Knowledge Discovery from Data*. (IF=3.291 in 2018)
- JR5 Liu, Z., **Jiang, M.**, Luo, T. “Leverage Electron Properties to Predict Phonon Properties via Transfer Learning for Semiconductors”, under review at *Science Advances*. (IF=12.804 in 2018)
- JR4 Zhang, C., Yao, H., Yu, L., Huang, C., Song, D., **Jiang, M.**, Chen, H., Chawla, N.V. “Inductive Contextual Relation Learning for Personalization”, under review at *Transactions on Information Systems*. (IF=2.312 in 2018)

- JR3 Liu, Z., **Jiang, M.**, Lin, H. “Specification Mining and Automated Task Planning for Autonomous Robots based on a Graph-based Spatial Temporal Logic” under review at *Robotics and Autonomous Systems*. (IF=2.928 in 2018)
- JR2 @Wang, D., @Zeng, Q., Chawla, N.V., **Jiang, M.** “Modeling Complementarity in Behavior Data with Multi-Type Itemset Embedding” under review at *Transactions on Intelligent Systems and Technology*. (IF=2.861 in 2018)
- JR1 Zhao, S., **Jiang, M.**, Qin, B., Liu, T., Zhai, C.X., Wang, F. “Structural and Textual Information Fusion for Symptom and Disease Representation Learning” under review at *IEEE Transactions on Knowledge and Data Engineering*. (Major revision, IF=3.857 in 2018)

#### *Refereed Workshop Papers*

- WR3 @Zhao, T., \*Ni, B., **Jiang, M.** “Early Fraud Detection with Augmented Graph Learning”, under review at *the Second International Workshop on Deep Learning on Graphs: Methods and Applications* (DLG) in conjunction with *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), 2020.
- WR2 @Wang, D., \*Zhang, Z., \*Ma, Y., @Zhao, T., @Jiang, T., Chawla, N.V., **Jiang, M.** “Learning Attribute-Structure Co-Evolutions in Dynamic Graphs”, under review at *the Second International Workshop on Deep Learning on Graphs: Methods and Applications* (DLG) in conjunction with *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), 2020.
- WR1 @Zhao, T., \*Deng, C., \*Yu, K., @Jiang, T., @Wang, D., **Jiang, M.** “GNN-based Graph Anomaly Detection with Graph Anomaly Loss”, under review at *the Second International Workshop on Deep Learning on Graphs: Methods and Applications* (DLG) in conjunction with *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), 2020.

#### INVITED TALKS

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Conference Follow-up from Artificial Intelligence and Machine Learning for Multi-Domain Operations, Zoom, May 2020

Saint Mary’s College, Notre Dame, Indiana, February 2020

IBM TJ Watson Laboratory, Yorktown Heights, New York, February 2020

Yahoo! Research, New York City, New York, July 2019

IBM TJ Watson Laboratory, Yorktown Heights, New York, October 2018

Nanjing University, Nanjing, Jiangsu, December 2017

University of Electronic Science and Technology of China, Chengdu, Sichuan, December 2017

Zhejiang University, Hangzhou, Zhejiang, November 2017

Tsinghua University, Beijing, November 2017

Binghamton University, Binghamton, New York, March 2017

Georgia State University, Atlanta, Georgia, March 2017  
University of Oregon, Eugene, Oregon, March 2017  
Rensselaer Polytechnic Institute, Troy, New York, February 2017  
University of Maryland, Baltimore County, Baltimore, Maryland, February 2017  
Temple University, Philadelphia, Pennsylvania, January 2017  
The Ohio State University, Columbus, Ohio, October 2016  
University of Massachusetts Boston, Boston, Massachusetts, November 2015

## MASTER STUDENT GRADUATED

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**Xueying Wang**, *Graduated May 2019*

Thesis: *Improving Information Extraction via Truth Finding with Data-Driven Commonsense*

## PAST STUDENT SUPERVISION

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**Matthew Malir**, *Undergraduate Student* (January–May 2018)

**Sebastian Miner**, *Undergraduate Student* (January–May 2018)

**Wenhao Yu**, *Visiting Undergraduate Student* (May–August 2018)

**Yu Shu**, *Visiting Undergraduate Student* (May–August 2018)

**Matthew Schoenbauer**, *Undergraduate Student* (September 2018–May 2019)

**Tina Wu**, *Undergraduate Student* (September 2018–May 2019)

**Chan Hee Song**, *Undergraduate Student* (September 2019–March 2020)

**Zijian Hu**, *Visiting Master Student* (July–August 2019)

**Yihong Ma**, *Visiting Undergraduate Student* (May–August 2019)

**Chuchen Deng**, *Visiting Undergraduate Student* (May–August 2019)

**Zhihan Zhang**, *Visiting Undergraduate Student* (July–August 2019)

**Xin Liu**, *Visiting Undergraduate Student* (July–August 2019)

**Mengxia Yu**, *Visiting Undergraduate Student* (July–August 2019)

**Wei Peng**, *Visiting Undergraduate Student* (July–August 2019)

**Kaifeng Yu**, *Visiting Undergraduate Student* (July–August 2019)

**Yang Zhou**, *Visiting Undergraduate Student* (July–August 2019)

**Jiajun Huang**, *Visiting Undergraduate Student* (January–February 2020)

**Yifan Ding**, *Master Student* (September 2018–July 2019)

**Tianwen Jiang**, *Visiting Ph.D. Student* (September 2018–August 2019)

## CURRENT STUDENT SUPERVISION

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**Eric Zhang**, *Trinity High School Student* (since September 2018)  
**Michael Florin**, *Trinity High School Student* (since September 2019)  
**Xiangyu Dong**, *Undergraduate Student* (since September 2019)  
**Tianze Zheng**, *Undergraduate Student* (since September 2019)  
**Bo Ni**, *Undergraduate Student* (since September 2019)  
**Alvin Alaphat**, *Undergraduate Student* (since January 2020)  
**Luke Marushack**, *Undergraduate Student* (since January 2020)  
**Michael Lee**, *Undergraduate Student* (since May 2020)  
**Ann Hermann**, *Undergraduate Student* (since May 2020)  
**Zaitang Li**, *Visiting Undergraduate Student* (since September 2019)  
**Daheng Wang**, *Ph.D. Student* (since September 2017), co-ad. with Prof. Chawla  
**Qingkai Zeng**, *Ph.D. Student* (since January 2018)  
**Tong Zhao**, *Ph.D. Student* (since September 2018)  
**Wenhao Yu**, *Ph.D. Student* (since July 2019)  
**Mengxia Yu**, *Ph.D. Student* (since August 2020)  
**Zhihan Zhang**, *Ph.D. Student* (since August 2020)  
**Jianing Li**, *Master Student* (since September 2019)  
**Bhakti Sharma**, *Master Student* (since January 2020)

## TEACHING COURSES

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**CS 412 Introduction to Data Mining**, *University of Illinois* (Summer 2017)  
**CSE 40647/60647 Data Science**, *University of Notre Dame* (Fall 2017)  
**CSE 40647/60647 Data Science**, *University of Notre Dame* (Spring 2018)  
**CSE 40647/60647 Data Science**, *University of Notre Dame* (Fall 2018)  
**CSE 40647/60647 Data Science**, *University of Notre Dame* (Fall 2019)  
**CSE 60326 Computational Behavior Modeling**, *University of Notre Dame*  
(Spring 2020)  
**CSE 40647/60647 Data Science**, *University of Notre Dame* (Fall 2020)

## PROFESSIONAL ACTIVITIES

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### Departmental Service

Graduate admission committee at ND CSE (since 2017)

### Ph.D. Thesis Committee

**Dr. Maria Glenski**, Notre Dame Comp. Sci. & Eng.  
**Dr. Chao Huang**, Notre Dame Comp. Sci. & Eng.  
**Dr. Kenton Murray**, Notre Dame Comp. Sci. & Eng.  
**Dr. Tianchen Wang**, Notre Dame Comp. Sci. & Eng.  
**Dr. Xian Wu**, Notre Dame Comp. Sci. & Eng.  
**Dr. Chuxu Zhang**, Notre Dame Comp. Sci. & Eng.  
**Dr. Shenglong Zhu**, Notre Dame Comp. Sci. & Eng.  
**Yuan Gong**, Notre Dame Comp. Sci. & Eng.  
**Suhansanu Kumar**, UIUC Computer Science  
**Guoqiang Liu**, Notre Dame Biology  
**Zhiyu Liu**, Notre Dame Electrical Engineering  
**Kaitlynn Meis**, Notre Dame Biology  
**Alireza Partovi**, Notre Dame Electrical Engineering  
**Mandana Saebi**, Notre Dame Comp. Sci. & Eng.  
**Munira Syed**, Notre Dame Comp. Sci. & Eng.  
**Pamela Bilo Thomas**, Notre Dame Comp. Sci. & Eng.

### Organizing Committee

*2020* Senior Program Committee, ACM International Conference on Knowledge Management (CIKM)  
*2020* Senior Program Committee, International Conference on Artificial Intelligence in Medicine (AIME)  
*2019* Publication Chair, ACM International Conference on Knowledge Management (CIKM)  
 Publicity Chair, Int'l Conf. on Computational Data and Social Networks (CSoNet)  
*2018* Co-Chair, Workshop on Misinformation and Misbehavior Mining on the Web at International Conference on Web Search and Data Mining (WSDM)  
*2016* Co-Chair, Special session on Big Behavioral Data Analytics at IEEE International Conference on Data Science and Advanced Analytics (DSAA)

### Program Committee

*2021* International Conference on Web Search and Data Mining (WSDM)  
*2020* ACM SIGKDD Int'l Conf. on Knowledge Discovery and Data Mining (KDD)  
 International World Wide Web Conference (WWW)  
 Annual Meeting of the Association for Computational Linguistics (ACL)  
 Conference on Empirical Methods in Natural Language Processing (EMNLP)  
 ACM International Conference on Knowledge Management (CIKM)  
 International Conference on Web Search and Data Mining (WSDM)  
*2019* ACM SIGKDD Int'l Conf. on Knowledge Discovery and Data Mining (KDD)  
 International World Wide Web Conference (WWW)  
 AAAI Conference on Artificial Intelligence (AAAI)  
 International Joint Conference on Artificial Intelligence (IJCAI)  
 Conference on Empirical Methods in Natural Language Processing (EMNLP)  
 ACM International Conference on Knowledge Management (CIKM)  
 International Conference on Web Search and Data Mining (WSDM)  
 SIAM Conference on Data Mining (SDM)  
 Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)  
 Int'l Conf. Series on Advances in Social Network Analysis and Mining (ASONAM)

2018 ACM SIGKDD Int'l Conf. on Knowledge Discovery and Data Mining (KDD)  
 International World Wide Web Conference (WWW)  
 AAAI Conference on Artificial Intelligence (AAAI)  
 Conference on Empirical Methods in Natural Language Processing (EMNLP)  
 ACM International Conference on Knowledge Management (CIKM)  
 International Conference on Web Search and Data Mining (WSDM)  
 SIAM Conference on Data Mining (SDM)  
 ACM International Conference on Multimedia (MM)  
 Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)  
 Workshop on Graph Techniques for Adversarial Activity Analytics (GTA3)  
 Workshop on Social Influence Analysis and Mining Actionable Insights from Social Networks (SocInf+MAISoN)  
 2017 AAAI Conference on Artificial Intelligence (AAAI)  
 ACM International Conference on Knowledge Management (CIKM)  
 ACM International Conference on Multimedia (MM)  
 Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)

#### Associate Editor

Big Data Networks (Frontiers in Big Data) (since January 2020): Research topic:  
 "Computational Behavioral Modeling for Big User Data." Submission deadline: 19  
 July 2020 (Abstract); 16 November 2020 (Manuscript).  
 Data Mining and Knowledge Discovery (*DAMI*) (since February 2020)

#### Journal Reviewer

IEEE Access (*Access*)  
 Artificial Intelligence Journal (*AI Journal*)  
 Data Mining and Knowledge Discovery (*DAMI*)  
 Decision Sciences Journal (*DSJ*)  
 Frontiers of Computer Science (*FCS*)  
 International Journal of Information Technology and Decision Making (*IJITDM*)  
 Information Sciences (*INS*)  
 Information Systems (*InfoSys*)  
 Information Processing and Management (*IPM*)  
 IEEE Intelligent Systems (*IS*)  
 Journal of Computers (*JCP*)  
 Journal of Machine Learning Research (*JMLR*)  
 INFORMS Journal on Computing (*JOC*)  
 Knowledge and Information Systems (*KAIS*)  
 Neurocomputing (*NEUCOM*)  
 PLOS ONE (*PlosOne*)  
 Pattern Recognition (*PR*)  
 Scientific Reports (*SciReports*)  
 IEEE Transactions on Big Data (*TBD*)  
 IEEE Transactions on Information Forensics and Security (*TIFS*)  
 KSII Transactions on Internet and Information Systems (*TIIS*)  
 ACM Transactions on Intelligent Systems and Technology (*TIST*)  
 ACM Transactions on Knowledge Discovery from Data (*TKDD*)  
 IEEE Transactions on Knowledge and Data Engineering (*TKDE*)  
 Transactions on Information Systems (*TOIS*)  
 ACM Trans. on Multimedia Comp. Comm. and App. (*TOMCCAP*)  
 IEEE Transactions on Neural Networks and Learning Systems (*TNNLS*)  
 World Wide Web Journal (*WWWJ*)