

Daheng Wang

PH.D. CANDIDATE AT THE UNIVERSITY OF NOTRE DAME

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Research Interests

Computational Behavior Modeling, Data Mining, Graph Machine Learning, and Applied Machine learning.

Education

University of Notre Dame

PH.D. IN COMPUTER SCIENCE & ENGINEERING (GPA: 3.7/4.0)

- Advisors: Dr. Meng Jiang and Dr. Nitesh V. Chawla

Notre Dame, IN

Aug. 2016 - Aug. 2021 (Expected)

University of Pittsburgh

MASTER OF SCIENCE IN INFORMATION SCIENCE (GPA: 3.8/4.0)

Pittsburgh, PA

Aug. 2013 - April 2015

Professional Experience

Amazon.com

APPLIED SCIENTIST INTERN

Seattle, WA

Jun. 2020 - Sep. 2020

- Led a research project on relational table representation learning for Web table interpretation. The work was published at WWW 2021 [C8].
- Helped in the implementation of a large scale graph neural network-based system for information extraction from semi-structured Web pages.

University of Notre Dame

GRADUATE TEACHING ASSISTANT

Notre Dame, IN

Aug. 2016 - May. 2019

- Data Structures (Fall 2016), Programming Paradigms (Spring 2017), Machine Learning (Spring 2019).

University of Pittsburgh

VOLUNTEER RESEARCH ASSISTANT

Pittsburgh, PA

May 2015 - Jan. 2016

- Developed a content-based method for alleviating the issue of topical data sparsity on Community QA platforms.

University of Pittsburgh

GRADUATE TEACHING ASSISTANT

Pittsburgh, PA

Jan. 2015 - May. 2015

- Decision Analysis and Decision Support Systems (Spring 2015).

Honors & Awards

2020 **Best Paper Award**, DLG-KDD 2020.

2020 **ACM SIGKDD Student Travel Award**, KDD 2020.

2020 **Best Paper Award**, ISDSA 2020.

2019 **ACM SIGKDD Student Travel Award**, KDD 2019.

2018 **ACM SIGKDD Student Travel Award**, KDD 2018.

2018 **GSU Grant Award**, University of Notre Dame.

Publications

REFEREED CONFERENCE PUBLICATIONS

[C8] **Daheng Wang**, Prashant Shiralkar, Colin Lockard, Binxuan Huang, Xin Luna Dong and Meng Jiang. "TCN: Table Convolutional Network for Web Table Interpretation." In *Proceedings of The Web Conference (TheWebConf)*, 2021.

[C7] Munira Syed, **Daheng Wang**, Meng Jiang, Oliver Conway, Vishal Juneja, Sriram Subramanian and Nitesh V. Chawla. "Overcoming Data Sparsity in Predicting User Characteristics from Behavior through Graph Embeddings." In *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, 2020.

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

- [C5] **Daheng Wang**, Meng Jiang, Munira Syed, Oliver Conway, Vishal Juneja, Sriram Subramanian and Nitesh V. Chawla. “Calendar Graph Neural Networks for Modeling Time Structures in Spatiotemporal User Behaviors.” In *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2020.
- [C4] **Daheng Wang**, Tianwen Jiang, Nitesh V. Chawla and Meng Jiang. “TUBE: Embedding Behavior Outcomes for Predicting Success.” In *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2019.
- [C3] Yifan Ding, **Daheng Wang**, Tim Weninger and Meng Jiang. “Preserving Composition and Crystal Structures of Chemical Compounds in Atomic Embedding.” In *IEEE International Conference on Big Data (Big Data)*, 2019.
- [C2] **Daheng Wang**, Meng Jiang, Qingkai Zeng, Zachary Eberhart and Nitesh V. Chawla. “Multi-Type Itemset Embedding for Learning Behavior Success.” In *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2018.
- [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.” In *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2018. (demo)

REFEREED WORKSHOP PUBLICATIONS

- [W3] **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 *International Workshop on Deep Learning on Graphs: Methods and Applications (DLG-KDD)* at *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2020. (**Best Paper Award**)
- [W2] Tong Zhao, Chuchen Deng, Kaifeng Yu, Tianwen Jiang, **Daheng Wang** and Meng Jiang. “GNN-based Graph Anomaly Detection with Graph Anomaly Loss.” In *International Workshop on Deep Learning on Graphs: Methods and Applications (DLG-KDD)* at *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2020.
- [W1] **Daheng Wang**, Meng Jiang, Xueying Wang, Nitesh Chawla and Paul Bruns. “Multifaceted Event Analysis on Cross-Media Network Data.” In *International Workshop on Heterogeneous Networks Analysis and Mining (HeteroNAM)* at *ACM International Conference on Web Search and Data Mining (WSDM)*, 2018.

MANUSCRIPTS UNDER REVIEW

- [M3] **Daheng Wang**, Tong Zhao, Wenhao Yu, Nitesh V. Chawla and Meng Jiang. “Deep Multimodal Complementarity Learning.” Under review at *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2020.
- [M2] **Daheng Wang**, Zhihan Zhang, Yihong Ma, Tong Zhao, Tianwen Jiang, Nitesh V. Chawla and Meng Jiang. “Modeling Co-evolution of Attributed and Structural Information in Graph Sequence.” At *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2020.
- [M1] **Daheng Wang**, Qingkai Zeng, Nitesh V. Chawla and Meng Jiang. “Modeling Complementarity in Behavior Data with Multi-Type Itemset Embedding.” Under review at *ACM Transactions on Intelligent Systems and Technology (TIST)*, 2019. (**Minor Revision**)

Professional Services

- 2021 **Invited Conference SPC/PC member**, AAAI 2021, IJCAI 2021.
- 2021 **Conference Subreviewer**, WWW 2021, WSDM 2021.
- 2020 **Invited Journal Reviewer**, TKDE, TKDD, TNNLS.
- 2020 **Invited Conference PC member/Reviewer**, CIKM 2020.
- 2020 **Conference Subreviewer**, BigCom 2020, KDD 2020.
- 2019 **Invited Journal Reviewer**, DAMI, TBD.
- 2019 **Conference Subreviewer**, ASONAM 2019.
- 2018 **Invited Journal Reviewer**, KAIS.

Skills

- Programming** Python, SQL, R, C/C++/C# (familiar), JavaScript, Java (proficient) and LaTeX.
- Packages** PyTorch, Scikit-learn, Tensorflow, Numpy, Matplotlib and MXNet.
- Softwares** Linux, MongoDB, PostgreSQL, Hadoop, Spark and RESTful Web Services.
- Languages** Chinese and English.