

Tyler Derr

CONTACT INFORMATION	Office: 364 Featheringill-Jacobs Hall 400 24th Ave S Nashville, TN 37212 E-mail: Tyler.Derr@vanderbilt.edu	Homepage: http://www.TylerDerr.com LinkedIn: http://www.linkedin.com/in/TylersNetwork GitHub: http://github.com/TylersNetwork Twitter: http://www.twitter.com/TylersNetwork
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POSITIONS	Assistant Professor , Vanderbilt University Computer Science in the Department of EECS Aug 2020 – Present
	Teaching & Affiliate Faculty Member , Vanderbilt University Data Science Institute (DSI) Aug 2020 – Present
	Faculty Fellow , Vanderbilt University Frist Center for Autism and Innovation Aug 2020 – Present

EDUCATION	Michigan State University Doctor of Philosophy (Ph.D.) in Computer Science and Engineering Aug 2020
	<ul style="list-style-type: none">• Dissertation: Network Analysis with Negative Links• Advisor: Dr. Jiliang Tang• Research areas: Signed Network Analysis, Deep Learning on Graphs, Data Science for Social Good• Cumulative GPA: 4.00 / 4.00
	The Pennsylvania State University Master of Science (M.S.) in Computer Science May 2015

	<ul style="list-style-type: none">• Thesis: A Clustering Approach to the Bounded Diameter Minimum Spanning Tree Problem Using Ants• Advisor: Dr. Thang N. Bui• Research areas: Ant Systems, Evolutionary Computation, Graph Algorithms• Cumulative GPA: 3.97 / 4.0	
	Dual Bachelor of Science (B.S.) in Computer Science and Mathematics May 2013	
	<ul style="list-style-type: none">• Cumulative GPA: 3.35 / 4.00	

RESEARCH EXPERIENCE	Network and Data Science Lab , Vanderbilt University Director Aug 2020 – Present	
	<ul style="list-style-type: none">• Research Interests: data mining, network analysis, graph neural networks, graph mining, machine learning, network measures and models, data science for social good (e.g., education, health, and political science)	
	Teachers in Social Media , Michigan State University PhD Student, Computer Science and Engineering Department Feb 2019 – Aug 2020	
	<ul style="list-style-type: none">• Projects: Incorporating Online Social Media in Educational Research• Principal Investigator: Dr. Kaitlin Torphy	
	Data Science and Engineering Lab , Michigan State University PhD Student, Computer Science and Engineering Department Jan 2017 – Aug 2020	

	<ul style="list-style-type: none">• Projects: Signed Network Analysis, Deep Learning on Graphs, Data Science for Social Good• Advisor: Dr. Jiliang Tang	
	Center for Computational Network Intelligence , HRL Laboratories Research Scientist Intern/Contractor May 2019 – Jul 2020	
	<ul style="list-style-type: none">• Projects: (Related to my general research interests, but can not disclose.)• Principal Investigator: Dr. Jiejun Xu	
	BEACON An NSF Center for the Study of Evolution in Action , Michigan State University PhD Student, Computer Science and Engineering Department Aug 2015 – Dec 2016	
	<ul style="list-style-type: none">• Projects: Evolving Multi-Layer Markov Network Brains Using Adaptive Complexification• Advisor: Dr. William F. Punch• Research areas: Evolving A.I., Evolutionary Reinforcement Learning, Genetic Programming	

Yue Lab, The Pennsylvania State University College of Medicine

Research Assistant, Institute for Personalized Medicine

Jun 2014 – Aug 2015

- Projects: Prediction and Analysis of Chromatin Spatial Organization in Cells
- Principal Investigator: Dr. Feng Yue
- Research areas: Machine Learning & Computational Genomics/Epigenomics

Dr. Thang N. Bui's Lab, Penn State Harrisburg

Master's Student, Computer Science & Mathematical Sciences Department

May 2014 – Aug 2015

- Projects: Ant-Based Optimization for Bounded Diameter Minimum Spanning Tree Problem
- Advisor: Dr. Thang N. Bui
- Research areas: Ant Systems, Evolutionary Computation, Graph Algorithms

PUBLICATIONS

Wei Jin, Tyler Derr, Yiqi Wang, Yao Ma, Zitao Liu, and Jiliang Tang. Node Similarity Preserving Graph Convolutional Networks. In Proceedings of the 14th ACM International Conference on Web Search and Data Mining (WSDM), 2021.

Wenqi Fan, Tyler Derr, Xiangyu Zhao, Yao Ma, Hui Liu, Jianping Wang, Jiliang Tang, Qing Li. CopyAttack: Attacking Black-box Recommendations via Copying Cross-domain User Profiles. In Proceedings of the IEEE 37th International Conference on Data Engineering (ICDE), 2021.

Hamid Karimi, Kaitlin T. Torphy, Tyler Derr, Kenneth A. Frank, and Jiliang Tang. Understanding and Promoting Teacher Connections in Online Social Media: A Case Study on Pinterest. IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE), 2020.

Yu Rong, Tingyang Xu, Junzhou Huang, Wenbing Huang, Hong Cheng, Yao Ma, Yiqi Wang, Tyler Derr, Lingfei Wu, Tengfei Ma. Deep Graph Learning: Foundations, Advances and Applications. In Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD), 2020.

Wentao Wang, Tyler Derr, Yao Ma, Suhang Wang, Hui Liu, Zitao Liu, and Jiliang Tang. Learning from Incomplete Labeled Data via Adversarial Data Generation. International Conference on Data Mining (ICDM), 2020.

Tyler Derr, Hamid Karimi (co-first author), Jiangtao Huang, and Jiliang Tang. Online Academic Course Performance Prediction using Relational Graph Convolutional Neural Network. International Educational Data Mining Society (EDM), 2020.

Hamid Karimi, Kaitlin Torphy, Tyler Derr, Kenneth Frank and Jiliang Tang. Characterizing Teacher Connections in Online Social Media: A Case Study on Pinterest. (WIP) In Proceedings of the 7th Learning@ Scale (L@S), 2020.

Tyler Derr, Yao Ma, Wenqi Fan, Xiaorui Liu, Charu Aggarwal, and Jiliang Tang. Epidemic Graph Convolutional Network. In Proceedings of the 13th ACM International Conference on Web Search and Data Mining (WSDM), 2020.

Tyler Derr. Network Analysis with Negative Links. In Proceedings of the 13th ACM International Conference on Web Search and Data Mining (WSDM), 2020.

Hamid Karimi, Tyler Derr, Kaitlin T. Torphy, Kenneth A. Frank, and Jiliang Tang. Towards Improving Sample Representativeness of Teachers on Online Social Media: A Case Study on Pinterest. In Proceedings of the 21st International Conference on Artificial Intelligence in Education (AIED), 2020.

Amin Javari, Tyler Derr, Pouya Esmalian, Jiliang Tang, Kevin Chen-Chuan Chang. ROSE: Role-based Signed Network Embedding. The World Wide Web Conference, 2020.

Tyler Derr, Zhiwei Wang, Jamell Dacon, and Jiliang Tang. Link and Interaction Polarity Predictions in Signed Networks. Social Network Analysis and Mining (SNAM), 2020.

Tyler Derr, Cassidy Johnson, Yi Chang, and Jiliang Tang. Balance in Signed Bipartite Networks. In Proceedings of the 28th ACM International Conference on Information and Knowledge Management (CIKM), 2019.

Tyler Derr, Hamid Karimi (co-first author), Aaron Brookhouse, and Jiliang Tang. Multi-Factor Congressional Vote Prediction. In Proceedings of the 2019 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), 2019.

Wenqi Fan, Tyler Derr, Yao Ma, Qing Li, Jiliang Tang, and Jianping Wang. Deep Adversarial Social Recommendation. In Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI), 2019.

Hamid Karimi, Tyler Derr, Kaitlin Torphy, Ken Frank, and Jiliang Tang. A Roadmap for Incorporating Online Social Media in Educational Research. Teachers College Record, 2019.

Tyler Derr, Yao Ma, and Jiliang Tang. Signed Graph Convolutional Networks. In Proceedings of the 18th International Conference on Data Mining (ICDM), 2018.

Tyler Derr and Jiliang Tang. Congressional Vote Analysis using Signed Networks. In Proceedings of the 18th International Conference on Data Mining Workshops (ICDMW), 2018.

Tyler Derr, Charu Aggarwal, and Jiliang Tang. Signed Network Modeling Based on Structural Balance Theory. In Proceedings of the 27th ACM International Conference on Information and Knowledge Management (CIKM), 2018.

Tyler Derr, Zhiwei Wang, and Jiliang Tang. Opinions Power Opinions: Joint Link and Interaction Polarity Predictions in Signed Networks. In Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), 2018.

Tyler Derr, Chenxing Wang, Suhang Wang, and Jiliang Tang. Relevance Measurements in Online Signed Social Networks. In ACM SIGKDD 14th International Workshop on Mining and Learning with Graphs (MLG), 2018.

Zhiwei Wang, Tyler Derr, Dawei Yin, and Jiliang Tang. Understanding and Predicting Weight Loss with Mobile Social Networking Data. In Proceedings of the 26th ACM International Conference on Information and Knowledge Management (CIKM), 2017.

Preprints and Submissions

Wei Jin, Tyler Derr, Haochen Liu, Yiqi Wang, Suhang Wang, Zitao Liu, and Jiliang Tang. Self-supervised Learning on Graphs: Deep Insights and New Directions. arXiv 2020.

Jamell Dacon, Tyler Derr, and Jiliang Tang. Cross-Domain Recommender System: A Survey on Online Platforms and New Perspectives.

Tyler Derr, Yi Chang, Charu Aggarwal, and Jiliang Tang. Deep Centrality Measurement for Signed Networks. arXiv 2020.

Hamid Karimi, Tyler Derr, Jiliang Tang. Explaining the Behavior of Deep Neural Networks Through the Lens of Decision Boundary.

Yao Ma, Suhang Wang, Tyler Derr, Lingfei Wu, and Jiliang Tang. Attacking Graph Convolutional Networks via Rewiring. arXiv 2019.

Wenqi Fan, Yao Ma, Tyler Derr, Jianping Wang, Yulong Gu, Shuaiqiang Wang, Dawei Yin, Jiliang Tang and Qing Li. Zero-shot Item Recommendations with Side Information.

Haochen Liu, Zhiwei Wang, Tyler Derr, Zitao Liu, and Jiliang Tang. Chat as Expected: Manipulating Black-box. arXiv 2020.

Jiangtao Huang, Tyler Derr, Hamid Karimi, and Jiliang Tang. A Survey of Computational Methods in Massive Open Online Courses.

Tyler Derr, Hamid Karimi, Xiaorui Liu, Jiejun Xu, and Jiliang Tang. Deep Adversarial Network Alignment. arXiv 2019.

Haochen Liu, Tyler Derr, Zitao Liu, and Jiliang Tang. Say What I Want: Towards the Dark Side of Neural Dialogue Models. arXiv 2019.

Hamid Karimi, Tyler Derr, and Jiliang Tang. Characterizing the Decision Boundary of Deep Neural Networks. arXiv 2019.

Wenqi Fan, Tyler Derr, Yao Ma, Jianping Wang, Jiliang Tang, and Qing Li. Deep Customer-to-Customer Recommendations.

PROPOSAL WRITING

Privacy-Preserving Graph Neural Networks: Attacking and Defenses

PI: Dr. Jiliang Tang

- **Role:** Designed and wrote entire proposal except mentoring a junior PhD student to write one research objective.
- **Result:** Submitted to Facebook Research and was rejected in 2020.

New Frontiers of Graph Neural Networks: Scalability, Interpretability, Vulnerability, and Stability

PI: Dr. Jiliang Tang

- **Role:** Designed and wrote one of the four research objectives “Scalable Graph Neural Networks.”
- **Result:** Submitted to National Science Foundation and **funded** in 2020.

CAREER: Real-World Networks: Modeling and Analysis of Signed Networks with Positive and Negative Links

PI: Dr. Jiliang Tang

- **Role:** Designed and wrote two of the four research objectives “Signed Network Modeling” and “Signed Network Measuring.” Significantly contributed to the other two research objectives “Node-Oriented Signed Network Mining” and “Link-Oriented Signed Network Mining.”
- **Result:** Submitted to National Science Foundation and was **funded** in 2019.

Role Analysis: A New Perspective to Understand and Prevent the Spread of Misinformation

PI: Dr. Jiliang Tang

- **Role:** Designed and wrote one of the four research objectives “Role-aware Misinformation Diffusion.”
- **Result:** Submitted to Defense Advanced Research Projects Agency and was rejected in 2018.

Multidimensional Network Embedding

PI: Dr. Jiliang Tang

- **Role:** Involved in writing preliminary work, broader impacts, and contributed to subtasks.
- **Result:** Submitted to National Science Foundation and was rejected in 2018.

HONORS & AWARDS

- Student Registration Award for KDD’20 from NSF and ACM SIGKDD. 2020
(Including partial registration for KDD’21)
- Student Travel Award for WSDM’20 from ACM SIGIR. 2020
- MSU COGS Professional Development Award (with fellowship funding) 2019
- MSU COGS Conference Award (with fellowship funding) 2019
- Student Travel Award for CIKM’19 from ACM SIGIR. 2019
- MSU Engineering Graduate **Leadership Fellow** Aug 2019 – May 2020
- MSU Education Opportunity Fellowship Aug 2019 – May 2020
- **Best Reviewer Award** at ICWSM’19. Jun 2019
- **Best Student Poster Award** at SDM’19. May 2019
Title: Network Analysis with Negative Links
- Student Travel Award for SDM’19 from NSF. 2019
- My advisor Dr. Jiliang Tang was awarded the **NSF CAREER award based on my research.** 2019
- **“People’s Choice” Award** for 3 Minute Thesis Competition at Michigan State Feb 2019
- Student Travel Award for ICDM’18. 2018
- Student Travel Award for CIKM’18 from ACM SIGIR. 2018
- **2nd Prize** at the Southeast Michigan Postdoctoral Symposium Oct 2018
University of Michigan Postdoctoral Association
- Department Fellowship, Michigan State University Spring: 2018,2019, Summer: 2017,2018
The Department of Computer Science and Engineering
- Student Travel Award for KDD’17. 2017
- Student Travel Award for SDM’17 from NSF. 2017
- Graduate Student Chancellor’s Award Aug 2013 – May 2014

- Robert W. Graham Fellowship Aug 2013 – May 2014
- Undergraduate Dean’s List Spring: 2010-2013
& Fall: 2012
- Webclients.net Trustee Scholarship Aug 2010 – May 2011
& Aug 2012 – May 2013
- Schwab Trustee Scholarship Aug 2008 – May 2009

MENTORING (AS ADVISOR) **Network and Data Science Lab**, Vanderbilt University
 • Cole Sawyer, M.S. Computer Science (Thesis) Aug 2020 – Present
 Ongoing M.S. Thesis related to graph neural networks

MENTORING (NOT AS ADVISOR) **Data Science and Engineering Lab**, Michigan State University

- Namratha Shah, M.S. Computer Science & Engineering May 2020 – Present
 Project on social media and mental health
- Hua Liu, Ph.D. Mathematics at Shandong University Nov 2019 – Present
 Ongoing Project on signed network analysis
- Wei Jin, Ph.D. Computer Science & Engineering Nov 2019 – Present
 Ongoing Project on graph neural networks
Co-authored “Self-supervised Learning on Graphs: Deep Insights and New Directions” (Preprint)
- Andrew McDonald, B.S. in Computer Science, Mathematics, and Statistics Mar 2019 – Present
 MSU Alumni Distinguished Scholar
 Mentoring through the Graduate Women in Science Mentor Program
 Work accepted to **Undergraduate Consortium at AAAI 2020**
- Jamell Dacon, Ph.D. Computer Science & Engineering Aug 2018 – Present
 MSU Enrichment Fellowship (UEF)
Co-authored “Link and Interaction Polarity Predictions in Signed Networks” SNAM
 Survey under review at ACM CSUR
- Aaron Brookhouse, B.S. Electrical Engineering Aug 2018 – Present
 MSU Professorial Assistantship Program
Co-authored “Multi-Factor Congressional Vote Prediction” ASONAM’19
Co-authored “Road to the White House: Analyzing the Relations Between
 Mainstream and Social Media During the U.S. Presidential Primaries” arXiv
 Poster presentation of our work at MID-SURE 2019
 Wrote him letters of recommendation for 2020 REU applications
 He accepted WSU’s Smart Environments REU Program (and invited to others)
 Ongoing Project on social media and political elections
- Haochen Liu, Ph.D. Computer Science & Engineering Jan 2019 – Dec 2019
 Two Papers under review
- Daniel K. Ofori-Dankwa, M.S. Computer Science & Engineering May 2018 – May 2019
 Project on “Bitcoin Price Predictions”
 Now at Microsoft
- Linghao Ji, B.S. Computer Science & Engineering Aug 2018 – Aug 2019
 Project on “Analyzing Swing Voters in Congress”
 Wrote him letters of recommendation for M.S. applications
 Now Applied Data Analytics M.S. student at BU
- Cassidy Johnson, B.S. Computer Science & B.S. Mathematics May 2018 – Aug 2018
 2018 Summer Research Opportunities Program
Co-authored “Balance in Signed Bipartite Networks” CIKM’19
- Mitansh Madan, B.S. Computer Science & Engineering Oct 2017 – May 2018
 Independent study through CSE department

- Pegah Varghaei, B.S. Computational Mathematics Mar 2017 – May 2018
Now Comp. Math Science and Eng. Ph.D. student at MSU
 - Chenxing Wang, M.S. Statistics Feb 2017 – May 2018
Co-authored “Relevance Measurements in Online Signed Social Networks” MLG’18
Now Computer Science Ph.D. student at IUPUI
- Yue Lab**, The Pennsylvania State University College of Medicine
- Simon Kuang, High School student Jun 2014 – Apr 2015
Project nominated for Google Science Fair Regional Finalist (2014)
Now Computer Science & Electrical Engineering B.S. student at UC Berkley

**SYMPOSIUMS /
WORKSHOPS**

Tyler Derr Jiliang Tang. Network Analysis with Negative Links. *Michigan State University Engineering Graduate Research Symposium*, Poster, 2020.

Tyler Derr. Analyzing Negative Links in Online Social Media. *Michigan State University Graduate Academic Conference*, Presentation, 2020.

Hamid Karimi, Jiangtao Huang, Tyler Derr. A Deep Model for Predicting Online Course Performance. *Workshop on Artificial Intelligence for Education (AI4EDU) @ AAI*, Presentation, 2020.

Tyler Derr. Network Analysis with Negative Links. *Michigan AI Symposium - AI For Society*, Poster, 2019.

Tyler Derr. Network Analysis with Negative Links. *International Conference on Data Mining (SDM19) Doctoral Forum*, SIAM, Poster, 2019. **Best Poster Award**

Aaron Brookhouse*, Tyler Derr, Hamid Karimi, and Jiliang Tang. Why Do People Unfollow on Twitter. *Mid-Michigan Symposium for Undergraduate Research Experiences (MID-SURE)*, Poster, 2019. *Undergraduate student mentored

Tyler Derr, Yao Ma, and Jiliang Tang. Signed Graph Convolutional Networks. *Michigan State University Engineering Graduate Research Symposium*, Poster, 2019 .

Tyler Derr, Hamid Karimi, and Jiliang Tang. Multi-Factor Congressional Vote Prediction. *Michigan State University Graduate Academic Conference - Three-Minute Thesis Competition*, Presentation 2019. **“People’s Choice” Award**

Tyler Derr, Hamid Karimi, and Jiliang Tang. Deep Congressional Vote Prediction. *Southeast Michigan Postdoctoral Symposium*, Presentation 2018. **Second Prize** Awarded by University of Michigan’s Postdoctoral Association

Tyler Derr and Jiliang Tang. Congressional Vote Analysis using Signed Networks. *IEEE International Conference on Data Mining (ICDM18) Ph.D. Forum*, Presentation, 2018.

Tyler Derr, Chenxing Wang, Suhang Wang, and Jiliang Tang. Node Relevance Measurements in Online Signed Social Networks. *Michigan State University Engineering Graduate Research Symposium*, Poster, 2018 .

Tyler Derr. Opinions Power Opinions: Joint Link and Interaction Polarity Predictions in Signed Networks. *International Conference on Data Mining (SDM17) Doctoral Forum*, SIAM, Poster, 2017.

Tyler Derr, Zhiwei Wang, and Jiliang Tang. Opinions Power Opinions: Joint Link and Interaction Polarity Predictions in Signed Networks. *Michigan State University Engineering Graduate Research Symposium*, Poster, 2017 .

Tyler Derr, Yanli Wang, and Feng Yue. A Supervised Learning Approach to the Prediction of Hi-C Data. *ENCODE 2015: Research Applications and Users Meeting*, Poster and presentation, 2015 .

Yanli Wang, Gal Yaroslavsky, Tyler Derr, and Feng Yue. Visualizing three-dimensional organization and long-range interactions of the mammalian genome with the 3D Genome Browser. *ENCODE 2015: Research Applications and Users Meeting*, Poster, 2015 .

Tyler Derr. Archimedes and His Approximation of $\sqrt{3}$. *MAA-EPaDel Regional Spring Conference, Student Paper Session Talk*, Dickinson College, 2013.

TUTORIALS	Graph Neural Networks: Models and Applications • Yao Ma, Wei Jin, Yiqi Wang, Tyler Derr, and Jiliang Tang. • 35th AAAI Conference on Artificial Intelligence (AAAI)	2021
	Deep Graph Learning: Foundations, Advances and Applications • Yu Rong, Tingyang Xu, Junzhou Huang, Wenbing Huang, Hong Cheng, Yao Ma, Yiqi Wang, Tyler Derr, Lingfei Wu, Tengfei Ma. • 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining (KDD)	2020
INVITED TALKS	Navigating the Faculty Job Search College of Engineering Graduate Lunch & Learn Michigan State University (virtual due to COVID-19)	Oct 2020
	Demystifying the Black Box: AI/Machine Learning in the Modern Era Change++ (virtual due to COVID-19)	Sep 2020
	Graph Neural Networks: Social Networks and Beyond Biomedical Engineering Vanderbilt University (virtual due to COVID-19)	Sep 2020
	Network Analysis with Negative Links Seminar in Computer Science University of Texas Rio Grande Valley (virtual due to COVID-19)	Sep 2020
	Self-supervised Learning on Graphs: Deep Insights and New Directions Workshop on Deep Learning on Graphs: Methods and Applications (DLG-KDD'20)/ Workshop on Mining and Learning with Graphs (MLG'20) ACM SIGKDD Conference on Knowledge Discovery and Data Mining (virtual due to COVID-19)	Aug 2020
	Data Science for Social Good Data Science Institute Vanderbilt University (virtual due to COVID-19)	Spring 2020
	Network Analysis with Negative Links Computer Science Department Binghamton University (virtual due to COVID-19)	Spring 2020
	Network Analysis with Negative Links Computer Science Department Drexel University (virtual due to COVID-19)	Spring 2020
	Network Analysis with Negative Links Computer Science Department Illinois Institute of Technology	Spring 2020
	Network Analysis with Negative Links Ying Wu College of Computing New Jersey Institute of Technology	Spring 2020
	Network Analysis with Negative Links School of Electrical Engineering and Computer Science Oregon State University (virtual due to COVID-19)	Spring 2020
	Network Analysis with Negative Links Department of Computer Science University of Alabama at Birmingham (canceled due to COVID-19)	Spring 2020

Network Analysis with Negative Links Department of Computer Science University of Kentucky	Spring 2020
Network Analysis with Negative Links Department of Computer Science & Engineering University of Nebraska	Spring 2020
Network Analysis with Negative Links School of Computing and Information University of Pittsburgh	Spring 2020
Network Analysis with Negative Links Department of Electrical Engineering and Computer Science Vanderbilt University (virtual due to COVID-19)	Spring 2020
Network Analysis with Negative Links Center for Computational Network Intelligence HRL Laboratories	May 2019
Signed Network Analysis: Community Detection & Link Prediction Applying Social Network Methods and Theories Counseling, Educational Psychology, and Special Education Department, MSU	Mar 2017

**TEACHING/
OTHER WORK
EXPERIENCE**
Vanderbilt University

Instructor, Electrical Engineering and Computer Science Department Aug 2020 – Present

- CS3891/5891-06: Social Network Analysis (Undergraduate/Graduate Level, Fall 20)

Michigan State University

Co-Instructor, Computer Science and Engineering Department Aug 2018 – Dec 2019

- Big Data Analysis (Undergraduate Level, Fall 18, Fall 19)
- Data Mining (Graduate Level, Spring 18)

Teaching Assistant, Computer Science and Engineering Department Aug 2015 – May 2017

- Operating Systems (Fall 15 & Summer 16)
- Intro to Programming I (Fall 16)
- Database Systems (Spring 16 & Spring 17)

The Pennsylvania State University

Grader, Computer Science and Mathematical Sciences Department Aug 2014 – Dec 2015

- Course: Theory of Computation (Graduate level)

Graduate Assistant, Computer Science and Mathematical Sciences Department Aug 2013 – May 2014
 Teaching assistant for:

- Artificial Intelligence (Spring 14)
- Formal Languages (Spring 14)
- Discrete Mathematics (Fall 13)
- Intermediate Programming in C++ (Fall 13)

Math & Computer Science Tutor, Russell E. Horn Sr. Learning Center Aug 2012 – May 2013

- Tutor and provide mentorship to students in mathematics and programming courses
- Received training on learning techniques, cross-cultural communication, and critical thinking

United BioSource Corp., Harrisburg, PA, USA

Software Developer Intern

- Redesigned and then programmed a software configuration management system

May 2012 – Aug 2012

Computer Aid, Inc., Harrisburg, PA, USA

Technical Developer Intern

- Received training in ASP.NET, SQL, and C# for Web Application Development

May 2011 – Dec 2011

SERVICES

Conference and Workshop Chairships

- Proceedings Co-chair, ACM Conference on Knowledge Discovery and Data Mining (KDD) 2021
- Workshop Co-organizer and Publicity Chair, Deep Graph Learning: Methodologies and Applications (DGLMA'19) @ IEEE BigData 2019

Program Committee Member

- The Web Conference (WWW) 2021
- Educational Advances in Artificial Intelligence Symposium @ AAAI 2021
- The International AAAI Conference on Web and Social Media (ICWSM) 2019 – 2021

Best Reviewer Award (2019)

- Association for the Advancement of Artificial Intelligence (AAAI) 2020 – 2021
- International Joint Conferences on Artificial Intelligence (IJCAI) 2020 – 2021
- Neural Information Processing Systems (NeurIPS) 2020
- International Conference on Information Reuse and Integration for Data Science (IRI) 2020
- International ACM Conference on Web Science (WebSci) 2020
- Artificial Intelligence for Education (AI4EDU) @ AAAI 2020
- Deep Learning on Graphs: Methodologies and Applications (DLGMA) @ AAAI 2020
- Network Modeling, Learning and Analysis (NMLA) Workshop @ WorldCIST 2020
- Deep Learning on Graphs: Methods and Applications Workshop @ KDD 2020
- Graph Techniques for Adversarial Activity Analytics Workshop @ IEEE BigData 2019 – 2020
- International Conference on Information and Knowledge Management (CIKM) 2019 – 2020
- Applied Data Science for Healthcare Workshop @ KDD 2019 – 2020
- IEEE International Conference on Big Data (BigData) 2018 – 2020
- International Conference on Artificial Neural Networks (ICANN) 2019
- Deep Graph Learning: Methodologies and Applications (DGLMA'19) @ IEEE BigData 2019

Conference Sub-Reviewer

- SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2019
- International Joint Conference on Artificial Intelligence (IJCAI) 2019
- North American Chapter of the Association for Computation Linguistics (NAACL-HLT) 2019
- Conference on Empirical Methods in Natural Language Processing (EMNLP) 2019
- The Web Conference (WWW) 2018 – 2019
- ACM International Conference on Web Search and Data Mining (WSDM) 2017 – 2019
- Association for the Advancement of Artificial Intelligence (AAAI) 2017 – 2019
- International Conference on Web and Social Media (ICWSM) 2017 – 2018
- Conference on Information and Knowledge Management (CIKM) 2017 – 2019
- Advances in Social Networks Analysis and Mining (ASONAM) 2017 – 2018
- ACM Conference on Research and Development in Information Retrieval (SIGIR) 2018 – 2019
- ACM Recommender Systems (RecSys) 2017, 2019

Journal Reviewer

- Nature Communications Physics 2020 – Present
- IEEE Transactions on Knowledge and Data Engineering (TKDE) 2020 – Present
- Data Mining and Knowledge Discovery (DAMI) 2020 – Present
- Applied Network Science (ANS) 2019 – Present
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS) 2019 – Present
- Neurocomputing 2019 – Present
- Wireless Communications and Mobile Computing 2019 – Present
- ACM Transactions on Knowledge Discovery from Data (TKDD) 2018 – Present

Journal Sub-Reviewer

- ACM Transactions on Information Systems (TOIS) 2019
- Data Mining and Knowledge Discovery (DAMI) 2017 – 2018
- IEEE Transactions on Network Science and Engineering (TNSE) 2017 – 2018
- Field Methods 2017

- Journal of Complex Networks 2017
- IEEE MultiMedia 2017
- International Journal of Data Science and Analytics (JDSA) 2017

Book Sub-Reviewer

- Springer 2019

VOLUNTEERING Conference Volunteering

- Volunteer at KDD 2020 2020
- Volunteer at ICML 2020 2020
- Session chair at at CIKM 2019 2019
 - “Network Embedding I”
- Session chair at at ASONAM 2019 2019
 - “Network Emebdding” and “Network Algorithms”
- Session chair for “PhD Forum” at ICDM 2018 2018
- Session chair at ASONAM 2018 2018
 - “Ranking & Centrality” and “Modeling II”
- Volunteer at KDD 2017 2017

General Volunteering

- Volunteer scientist for Skype a Scientist 2020 – Present
- Intro to Machine Learning @ Change++ (undergraduate students) 2020
- “Grad Chat” Nominated Panelist @ Michigan State University (undergraduate students) 2020
- Graduate Women in Science (Mid-MI) Mentor Program (undergraduate students) 2019 – 2020
- Activity leader for Girls Math & Science Data at MSU (middle school students) 2019 – 2020
- MSU Science Festival (K-5 students) 2019
- Intro to Artificial Intelligence @ Our Savior Lutheran Church Middle School 2019
- Intro to Computer Science @ Our Savior Lutheran Church Elementary School 2019
- Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE) 2017 – 2019
- Hosting and discussing with potential visiting MSU CSE Graduate Students 2017 – 2019
- “Life as a Grad Student” @ Michigan State University (undergraduate students) 2016 – 2019
- Michigan State University Undergraduate Research and Arts Forum (UURAF) 2016 – 2019
- Global Lions Mentor Program (incoming international students) 2013 – 2015
- MATHCOUNTS (middle school students) 2012 – 2014
- South Central PA Robotics Competition (high school students) 2012 – 2013

OLDER RESEARCH/PROJECTS (PHD,MS,BS)

- Evolving Multi-Layer Markov Network Brains Using Adaptive Complexification Dec 2015 – Nov 2016
- Evolving binary logic gate networks than can adaptively adjust their network complexity to solve boolean logic problems (e.g., 3-bit full adder) and a Mario Bros. agent.
- A Clustering Approach to the Bounded Diameter Minimum Spanning Tree Problem Using Ants May 2014 – Aug 2015
- **Master’s Thesis** under the supervision of Dr. Thang N. Bui at Penn State Harrisburg
 - Using ant-based optimization to find good intra- and inter-cluster edges to cluster the nodes, build constrained spanning trees per cluster, connect them, then use local optimization.
- Micromouse for the IEEE Region 2 Student Activities Conference Jan 2014 – May 2014
- Worked in a team to design, build, and program a robotic mouse to solve the IEEE maze.
- Software Verification and Security Analysis by Modeling System Specifications Aug 2012 – Aug 2013
- Creating statecharts, modeling them using PROMELA, and designing safety/liveness properties in Linear Temporal Logic (LTL) to prove correctness using the Spin Model Checker
- Voice-to-Braille Translation System** May 2012 – May 2013
- Worked in a team to design and create a refreshable braille display based on utilizing an, Arduino, Android app communicating via bluetooth to our custom refreshable braille device.

PROFESSIONAL AFFILIATIONS & MEMBERSHIPS	Academic Data Science Alliance	2020 – Present
	• Member	
	Pi Mu Epsilon, Honorary National Mathematics Society	2012 – Present
	• Inducted Member	
	Institute of Electrical and Electronic Engineers	2011 – Present
	• Member	
	Association of Computing Machinery	2010 – Present
	• Member	
	College Reading & Learning Association, International Tutor Training Program,	2012– Present
	• Level 1 Certified Tutor	
Official ACM Student Chapter (Est. Fall 2012), Penn State Harrisburg		
• Vice President	Aug 2012 – May 2013	
• Graduate Coordinator	Aug 2013 – May 2014	
Association for Computing Machinery (ACM) Club, Penn State Harrisburg		
• Vice President	Aug 2011 – May 2012	
Math Club, Penn State Harrisburg		
• Vice President / Director of Activities	Aug 2011 – May 2013	
Student Government Association (SGA), Penn State Harrisburg		
• Senator	Aug 2012 – May 2013	
• Chairperson of Student Activities	Aug 2012 – Dec 2012	
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ASSISTANTSHIPS	Research Assistantship, Michigan State University	Dec 2018 – Aug 2020
	Data Science and Engineering Lab	Aug 2017 – Aug 2018
	Teaching Assistantship, Michigan State University	Aug 2015 – May 2017
	The Department of Computer Science and Engineering	Aug 2018 – Dec 2018
	Graduate Assistantship, The Pennsylvania State University	Aug 2013 – May 2014
	Capital College, Computer Science and Mathematical Sciences Department	

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