Tyler Derr

CONTACT INFORMATION	Office: 364 Featheringill-Jacobs Hall Personal Homepage: http://www.TylerDerr.com

CONTACT INFORMATION

Office: 364 Featheringill-Jacobs Hall
400 24th Ave S
Nashville, TN 37212

E-mail: Tyler.Derr@vanderbilt.edu

Personal Homepage: http://www.TylerDerr.com
NDS Lab Homepage: http://my.vanderbilt.edu/NDS
LinkedIn: http://www.linkedin.com/in/TylersNetwork
Twitter: http://www.twitter.com/TylersNetwork
Google Scholar: https://scholar.google.com/citations?user=et6IhFcAAAAJ

POSITIONS

Assistant Professor, Vanderbilt University   Aug 2020 – Present
Computer Science in the Department of EECS

Teaching & Affiliate Faculty Member, Vanderbilt University   Aug 2020 – Present
Data Science Insitute (DSI)

Faculty Fellow, Vanderbilt University   Aug 2020 – Present
Frist Center for Autism and Innovation

EDUCATION

Michigan State University

Doctor of Philosophy (Ph.D.) in Computer Science   Aug 2020
- 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
- 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 Mathematical Sciences   May 2013
- Cumulative GPA: 3.35 / 4.00

RESEARCH EXPERIENCE

Network and Data Science Lab, Vanderbilt University
Director   Aug 2020 – Present
- Research Interests: data mining, network anlaysis, social computing, graph neural networks, graph mining, machine learning, network measures and models, data science for social good (e.g., education, health, political science, and autism research)

Teachers in Social Media, Michigan State University
PhD Student, Computer Science and Engineering Department   Feb 2019 – Aug 2020
- 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
- Projects: Signed Network Anlalysis, 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
- 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
- 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

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PUBLICATIONS

Ramit Sawhney, Shivam Agarwal, Arnav Wadhwa, Tyler Derr, Rajiv Shah. Stock Selection via Spatiotemporal Hypergraph Attention Network: A Learning to Rank Approach. In Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI), 2021.

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

Aaron Brookhouse, Tyler Derr, Hamid Karimi, H. Russell Bernard, and Jiliang Tang. Analyzing the Relations Between Mainstream and Social Media During the US Presidential Primaries. arXiv 2020.

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.

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.

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

HONORS & AWARDS	• Fall 2020 Teaching Innovation Award from the School of Engineering at Vanderbilt	2021
	• 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 IN NDS LAB (AS ADVISOR)	**Network and Data Science Lab**, Vanderbilt University

Ph.D. Students

• Yuying Zhao, Ph.D. Computer Science	Officially Starting in Fall 2021
Research topic: Graph mining and representation learning	
• Nathan Hishon, Ph.D. Computer Science	Spring 2021 – Present
Research topic: Human Computer Interaction and Natural Language Processing	
with applications specifically for Autism Spectrum Disorder	
• Yu Wang, Ph.D. Computer Science	Spring 2021 – Present
Research topic: Deep Learning on Graphs	

M.S. Students

• Kayla Johnson, M.S. Data Science	Feb 2021 – Present
• Cole Sawyer, M.S. Computer Science	Aug 2020 – Present
M.S. Thesis related to Graph Neural Networks	

B.S. Students
- Chet Weissberg, B.S. Computer Science   Feb 2021 – Present
- Jack M. O'Keefe, B.S. Computer Science, B.S. Economics   Dec 2020 – Present
- Trevor Pillow, B.S. Computer Science   Dec 2020 – Present
- Benjamin Van Sleen, B.S. Computer Engineering, B.S. Economics,   Dec 2020 – Present
      and accelerated M.S. Computer Science

MENTORING (NOT AS ADVISOR)

Data Science and Engineering Lab, Michigan State University
- Wei Jin, Ph.D. Computer Science & Engineering   Nov 2019 – Present
   Ongoing Project on graph neural networks
   Co-authored "Node Similarity Preserving Graph Convolutional Networks" WSDM'21
   Co-authored "Self-supervised Learning on Graphs: Deep Insights and New Directions" (Preprint)

- Jamell Dacon, Ph.D. Computer Science & Engineering   Aug 2018 – Present
   MSU Enrichment Fellowship (UEF)
   Ongoing Project on Black Lives Matter in Social Media
   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" (Preprint)
   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)

- Hua Liu, Ph.D. Mathematics at Shandong University   Nov 2019 – Nov 2020
   Project on signed network analysis

- Namratha Shah, M.S. Computer Science & Engineering   May 2020 – Aug 2020
   Project on social media and mental health

- Andrew McDonald, B.S. in Computer Science, Mathematics, and Statistics   Mar 2019 – Aug 2020
   MSU Alumni Distinguished Scholar
   Mentored through the Graduate Women in Science Mentor Program
   Work accepted at AAAI 2020 Undergraduate Consortium

- Haochen Liu, Ph.D. Computer Science & Engineering   Jan 2019 – Dec 2019
   Two papers under review
   Co-authored "Chat as Expected: Learning to Manipulate Black-box Neural Dialogue Models"
            (Preprint)
   Co-authored "Say What I Want: Towards the Dark Side of Neural Dialogue Models" (Preprint)

- Daniel K. Ofori-Dankwa, M.S. Computer Science & Engineering   May 2018 – May 2019
   Project on "Bitcoin Price Predictions"
   Next position: 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
   Next position: 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
   Next position: Lawrence Livermore National Lab Intern

- 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
  Next position: 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
  Next position: 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)
  Next Position: Computer Science & Electrical Engineering B.S. student at UC Berkeley

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SYMPOSIUMS / WORKSHOPS

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. The Workshop on Self-Supervised Learning for the Web @ WWW, Presentation and poster, 2020.

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) @ AAAI*, 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.

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   2021
- Yao Ma, Wei Jin, Yiqi Wang, Tyler Derr, and Jiliang Tang.
- 35th AAAI Conference on Artificial Intelligence (AAAI)

Deep Graph Learning: Foundations, Advances and Applications   2020
- 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)
- One of the most popular tutorials at KDD'20 with more than 800 attendees

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INVITED TALKS

Navigating the Faculty Job Search   Oct 2020
College of Engineering Graduate Lunch & Learn
Michigan State University (virtual due to COVID-19)

Demystifying the Black Box: AI/Machine Learning in the Modern Era   Sep 2020
Change++ (virtual due to COVID-19)

Graph Neural Networks: Social Networks and Beyond   Sep 2020
Biomedical Engineering
Vanderbilt University (virtual due to COVID-19)

Analyzing Signed Social Networks   Sep 2020
Seminar in Computer Science
University of Texas Rio Grande Valley (virtual due to COVID-19)

Self-supervised Learning on Graphs: Deep Insights and New Directions   Aug 2020
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)

Data Science for Social Good   Spring 2020
Data Science Institute
Vanderbilt University (virtual due to COVID-19)

Network Analysis with Negative Links   Spring 2020
Computer Science Department
Binghamton University (virtual due to COVID-19)

Network Analysis with Negative Links   Spring 2020
Computer Science Department
Drexel University (virtual due to COVID-19)

Network Analysis with Negative Links   Spring 2020
Computer Science Department
Illinois Institute of Technology

Network Analysis with Negative Links   Spring 2020
Ying Wu College of Computing
New Jersey Institute of Technology

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 EXPERIENCE

Vanderbilt University

Instructor, Electrical Engineering and Computer Science Department
  • CS3891/5891-06: Social Network Analysis (Undergraduate/Graduate Level, Fall 20)
  • Received the **Fall 2020 Teaching Innovation Award** from the School of Engineering
	Aug 2020 – Present

Instructor, Data Science Institute • DS5720: Social Network Analysis (Graduate Level, Spring 21)	Jan 2021 – Present

Michigan State University

Co-Instructor, Computer Science and Engineering Department
  • Big Data Analysis (Undergraduate Level, Fall 18, Fall 19)
  • Data Mining (Graduate Level, Spring 18)
	Aug 2018 – Dec 2019

Teaching Assistant, Computer Science and Engineering Department
  • Operating Systems (Fall 15 & Summer 16)
  • Intro to Programming I (Fall 16)
  • Database Systems (Spring 16 & Spring 17)
	Aug 2015 – May 2017

The Pennsylvania State University

Grader, Computer Science and Mathematical Sciences Department • Course: Theory of Computation (Graduate level)	Aug 2014 – Dec 2015

Graduate Assistant, Computer Science and Mathematical Sciences Department
Teaching assistant for:
  • Artificial Intelligence (Spring 14)
  • Formal Languages (Spring 14)
  • Discrete Mathematics (Fall 13)
  • Intermediate Programming in C++ (Fall 13)
	Aug 2013 – May 2014

	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

OTHER WORK EXPERIENCE

HRL Laboratories, Malibu, CA, USA
Research Scientist Intern/Contractor — May 2019 – Jul 2020
- Projects: (Related to my general research interests in the Center for Computational Network Intelligence, but can not disclose.)
- Principal Investigator: Dr. Jiejun Xu

United BioSource Corp., Harrisburg, PA, USA
Software Developer Intern — May 2012 – Aug 2012
- Redesigned and then programmed a software configuration management system

Computer Aid, Inc., Harrisburg, PA, USA
Technical Developer Intern — May 2011 – Dec 2011
- Received training in ASP.NET, SQL, and C# for Web Application Development

SERVICES

National Science Foundation (NSF) grant proposal panelist — 2021

Conference and Workshop Chairships
- Doctoral Consortium Co-Chair, ACM International Conference on Web Search and Data Mining (WSDM) — 2022
- 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
- Graph Neural Networks and Systems Workshop (GNNSys) @ MLSys — 2021
- International Conference on Machine Learning (ICML) — 2021
- Association for Computational Linguistics Annual Meeting (ACL) — 2021
- SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) — 2021
- The Web Conference (WWW) — 2021
- Educational Advances in Artificial Intelligence Symposium @ AAAI — 2021
- Deep Learning on Graphs: Methods and Applications Workshop @ KDD — 2020 – 2021
- Association for the Advancement of Artificial Intelligence (AAAI) — 2020 – 2021
- International Joint Conferences on Artificial Intelligence (IJCAI) — 2020 – 2021
- International ACM Conference on Web Science (WebSci) — 2020 – 2021
- The International AAAI Conference on Web and Social Media (ICWSM) — 2019 – 2021
  - **Best Reviewer Award (2019)**
- Neural Information Processing Systems (NeurIPS) — 2020
- International Conference on Information Reuse and Integration for Data Science (IRI) — 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
- 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 @ Ardsley High School's Science Research class	2020
• 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 and Android app communicating via bluetooth to our custom refreshable braille device.

PROFESSIONAL AFFILIATIONS/ MEMBERSHIPS

Academic Data Science Alliance
- Member   2020 – Present

Pi Mu Epsilon, Honorary National Mathematics Society
- Inducted Member   2012 – Present

Institute of Electrical and Electronic Engineers
- Member   2011 – Present

Association of Computing Machinery
- Member   2010 – Present

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

College Reading & Learning Association, International Tutor Training Program,
- Level 1 Certified Tutor   2012

[*CV compiled on 2021-04-02*]