Ryan A. Rossi

Curriculum Vitae
http://ryanrossi.com

☎ +1 (415) 819 8500
✉ ryarossi@gmail.com
Office E7-304
Adobe Research
345 Park Ave
San Jose, CA 95110
US Citizen
Erdős Number: 3

Research Interests

Machine learning, statistical relational learning, (large-scale) graph mining, representation learning, deep learning, matrix-based network computations, link prediction & recommendation, parallel computing

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Education

2009–2015 **Ph.D., Computer Science.**, *Purdue University*, USA.
Title: "Improving Relational Machine Learning by Modeling Temporal Dependencies"
Concentrate in Relational Machine Learning (RML)
Recipient of Four Ph.D. Fellowships:
– National Science Foundation Graduate Fellowship (NSF GRFP)
– DoD: National Defense Science and Engineering Graduate Fellowship (NDSEG)
– Bilsland Dissertation Fellowship Awarded to Outstanding Ph.D. candidates
– Purdue University Fredrick N. Andrews Doctoral Fellowship (unused)
Advisor: Sunil Prabhakar

2013 **MS in Computer Science.**, *Purdue University*, USA.
Concentrate in Machine Learning

2005–2009 **Bachelor of Science in Computer Science.**, *Coastal Carolina University (CCU)*, USA.
Valedictorian class of 2009. GPA: **4.0**., Summa Cum Laude
Advisor: Jean-Louis Lassez (Retired IBM T.J. Watson Research Center)
Selected Courses: Machine Learning, Search Theory, Numerical Analysis, Bioinformatics

Summer 11–12 **LLNL Scholar** , *Lawrence Livermore National Laboratory*, USA.

Summer 2010 **NREIP**, *Naval Research Laboratory (AI Center)*, USA.

2009 **NASA Fellow**, *California Institute of Technology, JPL*, USA.

2009 **USRP Fellow**, *Jet Propulsion Laboratory*, USA.

Summer 2008 **NSF REU Fellow**, *University of Massachusetts at Amherst*, USA.

Summer 2007 **Research Fellow**, *New Mexico Institute of Technology*, USA.

Research Experience

2017–present **Senior Research Scientist**, Adobe Research.

2015–2017 **Member of Research Staff**, *Palo Alto Research Center (PARC, a Xerox company)*, Machine Learning group.

2013–2015 **Visiting Researcher**, *Palo Alto Research Center (PARC)*, Palo Alto, CA USA.
Research focused on theory, algorithms & applications of relational (graph-based) machine learning

Summer 2013	**Research Intern**, *Palo Alto Research Center (PARC)*, Palo Alto, CA USA. Advisor: Rong Zhou, Developed recommendion system via collective matrix-tensor factorization • Led to filing two patents on scalable graph-based machine learning and analytics • Research and system were presented to clients, partners and researchers
2009–2015	**Research Assistant**, *Purdue University*, USA. Research: Machine Learning, Statistical Relational Learning Proposed methods for *role discovery in large dynamic graphs* and *dynamic relational classification*.
Summer 2011–2012	**Research Assistant**, *Lawrence Livermore National Laboratory (ISCR)*, USA. Research focused on developing ML algorithms to characterize and model user behavior for detecting malicious intent/intrusions in real-time. Invited back for second year. Resulted in two papers on modeling dynamic roles in large networks.
Summer 2010	**Research Assistant**, *Naval Research Laboratory (Artificial Intelligence Center)*, USA. Advisor: David Aha, Co-advisor: Luke McDowell (U.S. Naval Academy), NREIP Resulted in the JAIR paper "Transformation of Graph Data for Statistical Relational Learning"
Summer 2009	**Research Assistant**, *California Institute of Technology (NASA JPL)*, USA. Advisor: Mark W. Powell, Summer Research Fellowship (returned to continue my research).
Spring 2009	**Research Assistant**, *NASA Jet Propulsion Laboratory*, USA. Advisor: Mark W. Powell, Spring USRP Fellowship.
Summer 2008	**Research Assistant**, *University of Massachusetts at Amherst*, USA. Advisor: David Jensen, Co-advisor: Brian Taylor. *REU NSF Fellowship*. "Experimental Methods for Improving the Design of Participatory Sensing Systems"
Summer 2007	**Research Assistant**, *New Mexico Institute of Technology, ICASA*, USA. Advisor: Srinivas Mukkamala, Senior Research Scientist, ICASA
2005–2009	**Research Assistant**, *Coastal Carolina University*, USA. Advisor: Jean-Louis Lassez, Retired IBM T.J. Watson Research Center

Journal Publications

[J21] Hongjie Chen, **Ryan A. Rossi**, Kanak Mahadik, Sungchul Kim and Hoda Eldardiry, *Graph Deep Factors for Probabilistic Time-series Forecasting*, Transactions on Knowledge Discovery from Data (TKDD), 2022.

[J20] Nesreen K. Ahmed, Nick Duffield, **Ryan A. Rossi**, *Online Sampling of Temporal Networks*, Transactions on Knowledge Discovery from Data (TKDD), 1–43, 2021.

[J19] Hoda Eldardiry, Jennifer Neville, **Ryan A. Rossi**, *Ensemble Learning for Relational Data*, Journal of Machine Learning Research (JMLR), 2020.

[J18] **Ryan A. Rossi**, Nesreen K. Ahmed, Aldo Carranza, David Arbour, Anup Rao, Sungchul Kim, and Eunyee Koh, *Heterogeneous Graphlets*, Transactions on Knowledge Discovery from Data (TKDD), 1–43, 2020.

[J17] Xin Qian, **Ryan A. Rossi**, Fan Du, Sungchul Kim, Eunyee Koh, Sana Malik, Tak Yeon Lee, Nesreen K. Ahmed, *Personalized Visualization Recommendation*, ACM Transactions on the Web (TWEB), 1–43, 2021.

[J16] **Ryan A. Rossi**, Di Jin, Sungchul Kim, Nesreen K. Ahmed, Danai Koutra, and John Boaz Lee, *On Proximity and Structural Role-based Embeddings in Networks: Misconceptions, Techniques, and Applications*, Transactions on Knowledge Discovery from Data (TKDD), 1–32, 2020.

[J15] John Boaz Lee, Giang Nguyen, **Ryan A. Rossi**, Nesreen K. Ahmed, Eunyee Koh, and Sungchul Kim, *Dynamic Node Embeddings from Edge Streams*, IEEE Transactions on Emerging Topics in Computational Intelligence, 1–15, 2020.

[J14] John Boaz Lee, **Ryan A. Rossi**, Sungchul Kim, Nesreen K. Ahmed, and Eunyee Koh, *Attention Models in Graphs: A Survey*, Transactions on Knowledge Discovery from Data (TKDD), 1–19, 2019.

[J13] **Ryan A. Rossi** and Nesreen K. Ahmed, *Complex networks are structurally distinguishable by domain*, Social Network Analysis and Mining (SNAM), Vol. 9, No. 1, 51 pages, 2020.

[J12] **Ryan A. Rossi**, Rong Zhou, and Nesreen K. Ahmed, *Deep Inductive Graph Representation Learning*, IEEE Transactions on Knowledge and Data Engineering (TKDE), 1–14, 2018.

[J11] **Ryan A. Rossi**, Rong Zhou, and Nesreen K. Ahmed, *Estimation of Graphlet Counts in Massive Networks*, IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 14 pages, 2018.

[J10] **Ryan A. Rossi**, Nesreen K. Ahmed, and Rong Zhou, *Interactive Visual Graph Mining and Learning*, ACM Transactions on Intelligent Systems and Technology (TIST), 1–24, 2017.

[J9] **Ryan A. Rossi** and Rong Zhou, *GraphZIP: A Clique-based Sparse Graph Compression Method*, Journal of Big Data, 2018.

[J8] Nesreen K. Ahmed, Jennifer Neville, **Ryan A. Rossi**, Nick Duffield, Theodore L. Willke, *Graphlet Decomposition: Framework, Algorithms, and Applications*, Knowledge and Information Systems (KAIS), 689–722, 2016 *Invited paper to KAIS Journal Special Issue (ICDM Best papers)*.

[J7] **Ryan Rossi**, *Relational Time Series Learning*, Knowledge Engineering Review (KER), Cambridge University Press, 1–15, 2018.

[J6] **Ryan Rossi** and Rong Zhou, *Parallel Collective Factorization for Modeling Large Heterogeneous Networks*, Social Network Analysis and Mining (SNAM), 2016.

[J5] **Ryan Rossi**, David F. Gleich, and Assefaw H. Gebremedhin, *Parallel Maximum Clique Algorithms with Applications to Network Analysis*, SIAM Journal on Scientific Computing (SISC), 37(5), C589–C616 (28 pages), 2015.

[J4] **Ryan Rossi** and Nesreen K. Ahmed, *Role Discovery in Networks*, IEEE Transactions on Knowledge and Data Engineering (TKDE), 1112–1131, 2014.

[J3] **Ryan Rossi** and Nesreen K. Ahmed, *Coloring Large Complex Networks*, Social Network Analysis and Mining (SNAM), Vol. 4, No. 1-228, 37 pages, 2014.

[J2] David F. Gleich, **Ryan A. Rossi**, *A Dynamical System for PageRank with Time-Dependent Teleportation*, Internet Mathematics, 188–217, 2014.

[J1] **Ryan Rossi**, Luke McDowell, David Aha, and Jennifer Neville, *Transforming Graph Representations for Statistical Relational Learning*, Journal of Artificial Intelligence Research (JAIR), pages 363–441, 2012. *Invited for presentation at IJCAI 2013 journal track.

Other Peer-reviewed Publications

[C106] Shashank Goel, Hritik Bansal, Sumit Bhatia, **Ryan A. Rossi**, Vishwa Vinay, and Aditya Grover, *CyCLIP: Cyclic Contrastive Language-Image Pretraining*, Advances in Neural Information Processing Systems (NeurIPS), 2022.

[C105] Sejoon Oh, Sungchul Kim, **Ryan A. Rossi**, and Srijan Kumar, *Influence-guided Data Augmentation for Neural Tensor Completion*, Proceedings of the 30th ACM International Conference on Information & Knowledge Management (CIKM), 2021.

[C104] **Ryan A. Rossi**, Anup Rao, Sungchul Kim, Eunyee Koh, Nesreen K. Ahmed and Gang Wu, *From Closing Triangles to Higher-Order Motif Closures for Better Unsupervised Online Link Prediction*, Proceedings of the 30th ACM International Conference on Information & Knowledge Management (CIKM), 2021.

[C103] Yue Zhao, **Ryan A. Rossi**, and Leman Akoglu, *Automatic Unsupervised Outlier Model Selection*, Advances in Neural Information Processing Systems (NeurIPS), 2021.

[C102] Saed Rezayi, Nedim Lipka, Vishwa Vinay, **Ryan A. Rossi**, Franck Dernoncourt, Tracy H. King and Sheng Li, *A Framework for Knowledge-Derived Query Suggestions*, IEEE BigData, 2021.

[C101]   Aravind Reddy, **Ryan A. Rossi**, Zhao Song, Anup Rao, Tung Mai, Nedim Lipka, Gang Wu, Eunyee Koh, Nesreen Ahmed, *One-Pass Algorithms for MAP Inference of Nonsymmetric Determinantal Point Processes*, Proceedings of the 39th International Conference on Machine Learning (ICML), 2022.

[C100]   Gaurav Verma, Vishwa Vinay, **Ryan A. Rossi**, Srijan Kumar, *Robustness of Fusion-based Multimodal Classifiers to Cross-Modal Content Dilutions*, EMNLP, 2022.

[C99]   Namyong Park, **Ryan A. Rossi**, Eunyee Koh, Iftikhar Ahamath Burhanuddin, Sungchul Kim, Fan Du, Nesreen Ahmed, Christos Faloutsos, *CGC: Contrastive Graph Clustering for Community Detection and Tracking*, Proceedings of the ACM Web Conference (WWW), 2022.

[C98]   Mustafa Abdallah, **Ryan A. Rossi**, Kanak Mahadik, Sungchul Kim, Handong Zhao, Saurabh Bagchi, *AutoForecast: Automatic Time-Series Forecasting Model Selection*, Proceedings of the 31st ACM International Conference on Information & Knowledge Management (CIKM), 2022.

[C97]   Duc Hoang, Haotao Wang, Handong Zhao, **Ryan A. Rossi**, Sungchul Kim, Kanak Mahadik, Zhangyang Wang, *AutoMARS: Searching to Compress Multi-Modality Recommendation Systems*, Proceedings of the 31st ACM International Conference on Information & Knowledge Management (CIKM), 2022.

[C96]   Chenhan Yuan, **Ryan A. Rossi**, Andrew Katz, Hoda Eldardiry, *Clustering-based Unsupervised Generative Relation Extraction*, IEEE BigData, 2022.

[C95]   Chang Xiao, **Ryan A. Rossi**, Eunyee Koh, *iMarker: Instant and True-to-scale AR with Invisible Markers*, Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology (UIST), 2022.

[C94]   Weixin Jiang, Gang Wu, Vishy Swaminathan, Stefano Petrangeli, Haoliang Wang, **Ryan A. Rossi**, Nedim Lipka, *Task-Oriented Near-Lossless Burst Compression*, IEEE International Symposium on Multimedia (ISM), 2022.

[C93]   Hongjie Chen, **Ryan A. Rossi**, Kanak Mahadik, Hoda Eldardiry, *Context Integrated Relational Spatio-Temporal Resource Forecasting*, IEEE International Conference on Big Data (IEEE BigData), 2022.

[C92]   Can Qin, Sungchul Kim, Handong Zhao, Tong Yu, **Ryan A. Rossi**, Yun Fu, *External Knowledge Infusion for Tabular Pre-training Models with Dual-adapters*, Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2022.

[C91]   Sejoon Oh, Ankur Bhardwaj, Jongseok Han, Sungchul Kim, **Ryan A. Rossi**, Srijan Kumar, *Implicit Session Contexts for Next-Item Recommendations*, Proceedings of the 31st ACM International Conference on Information & Knowledge Management, 2022.

[C90]   Swapneel Mehta, Somdeb Sarkhel, Xiang Chen, Saayan Mitra, Viswanathan Swaminathan, **Ryan A. Rossi**, Ali Aminian, Han Guo, Kshitiz Garg, *Open-Domain Trending Hashtag Recommendation for Videos*, IEEE International Symposium on Multimedia (ISM), 2022.

[C89]   Abhraneel Sarma, Shunan Guo, Jane Hoffswell, **Ryan A. Rossi**, Fan Du, Eunyee Koh, Matthew Kay, *Evaluating the Use of Uncertainty Visualisations for Imputations of Data Missing At Random in Scatterplots*, IEEE VIS, 2022.

[C88]   Bingjie Xu, Shunan Guo, Eunyee Koh, Jane Hoffswell, **Ryan A. Rossi**, Fan Du, *ARShopping: In-Store Shopping Decision Support Through Augmented Reality and Immersive Visualization*, IEEE VIS, 2022.

[C87]   Beleicia Bullock, Shunan Guo, Eunyee Koh, **Ryan A. Rossi**, Fan Du, Jane Hoffswell, *Let's Get Personal: Exploring the Design of Personalized Visualizations*, IEEE VIS, 2022.

[C86]   Fayokemi Ojo, **Ryan A. Rossi**, Jane Hoffswell, Shunan Guo, Fan Du, Sungchul Kim, Chang Xiao, Eunyee Koh, *VisGNN: Personalized Visualization Recommendation via Graph Neural Networks*, Proceedings of the ACM Web Conference (WWW), 2022.

[C85] Hyeok Kim, **Ryan A. Rossi**, Fan Du, Eunyee Koh, Shunan Guo, Jessica Hullman, Jane Hoffswell, *Cicero: A Declarative Grammar for Responsive Visualization*, ACM Human Factors in Computing Systems (CHI), 2022.

[C84] Zihao Zhou, Xingyi Yang, **Ryan A. Rossi**, Handong Zhao, Rose Yu, *Neural Point Process for Learning Spatiotemporal Event Dynamics*, Learning for Dynamics and Control Conference (L4DC), 2022.

[C83] Zhuohao Zhang, Sana Malik, Shunan Guo, Jane Hoffswell, **Ryan A. Rossi**, Fan Du, and Eunyee Koh, *Understanding Business Analysts' Needs for Data Report Authoring*, EuroVis Workshop on Visual Analytics (EuroVA), 2022.

[C82] Zhuohao Zhang, Sana Malik, Shunan Guo, Jane Hoffswell, **Ryan A. Rossi**, Fan Du, and Eunyee Koh, *CODAS: Integrating Business Analytics and Report Authoring*, EuroVis Workshop on Visual Analytics (EuroVA), 2022.

[C81] Zening Qu, Fan Du, **Ryan A. Rossi**, and Bill Howe, *Aunt Lily Can Say Her Visualizations: Directing Analysis, Design, and Storytelling in Natural Language*, NL VIZ: Workshop on Exploring Opportunities and Challenges for Natural Language Techniques to Support Visual Analysis, 2021.

[C80] Di Jin, Sungchul Kim, **Ryan A. Rossi**, and Danai Koutra, *On Generalizing Static Node Embedding to Dynamic Settings*, The Fifteenth International Conference on Web Search and Data Mining (WSDM), 2022.

[C79] Galen Weld, Peter West, Maria Glenski, David Arbour, **Ryan A. Rossi**, and Tim Althoff, *Adjusting for Confounders with Text: Challenges and an Empirical Evaluation Framework for Causal Inference*, AAAI Conference on Web and Social Media (ICWSM), 2022.

[C78] Hyeok Kim, **Ryan A. Rossi**, Abhraneel Sarma, Dominik Moritz, and Jessica Hullman, *An Automated Approach to Reasoning About Task-Oriented Insights in Responsive Visualization*, IEEE VIS, 2021.

[C77] Enayat Ullah, Tung Mai, Anup Rao, **Ryan A. Rossi**, and Raman Arora, *Machine unlearning via algorithmic stability*, Conference on Learning Theory (COLT), 2021.

[C76] Xin Qian, **Ryan A. Rossi**, Fan Du, Sungchul Kim, Eunyee Koh, Sana Malik, Tak Yeon Lee, Joel Chan, *Learning to Recommend Visualizations from Data*, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2021.

[C75] Hongjie Chen, **Ryan A. Rossi**, Kanak Mahadik, Sungchul Kim, Hoda Eldardiry, *Graph Deep Factor Model for Cloud Utilization Forecasting*, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2021.

[C74] Gromit Yeuk-Yin Chan, Tung Mai, Anup Rao, **Ryan A. Rossi**, Fan Du, Cláudio T. Silva, Juliana Freire, *Interactive Audience Expansion On Large Scale Online Visitor Data*, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2021.

[C73] Yikun Xian, Handong Zhao, Tak Yeon Lee, Sungchul Kim, **Ryan A. Rossi**, Zuohui Fu, Gerard de Melo, S. Muthukrishnan, *EXACTA: Explainable Column Annotation*, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2021.

[C72] Mohammad Mehrabi, Adel Javanmard, **Ryan A. Rossi**, Anup Rao and Tung Mai, *Fundamental Tradeoffs in Distributionally Adversarial Training*, International Conference on Machine Learning (ICML), 2021.

[C71] Mojtaba Sahraee-Ardakan, Tung Mai, Anup Rao, **Ryan A. Rossi**, Sundeep Rangan and Alyson Fletcher, *Asymptotics of Ridge Regression in Convolutional Models*, International Conference on Machine Learning (ICML), 2021.

[C70] Jun Yan, Mrigank Raman, Aaron Chan, Tianyu Zhang, **Ryan A. Rossi**, Handong Zhao, Sungchul Kim, Nedim Lipka and Xiang Ren, *Learning Contextualized Knowledge Structures for Commonsense Reasoning*, ACL, 2021.

[C69] Mrigank Raman, Hansen Wang, PeiFeng Wang, Siddhant Agarwal, Sungchul Kim, **Ryan A. Rossi**, Handong Zhao, Nedim Lipka, Xiang Ren, *Learning to Deceive Knowledge Graph Augmented Models via Targeted Perturbation*, International Conference on Learning Representations (ICLR), 2021, Vienna, Austria.

[C68] Jiong Zhu, **Ryan A. Rossi**, Anup Rao, Tung Mai, Nedim Lipka and Danai Koutra, *Graph Neural Networks with Heterophily*, AAAI, 2021.

[C67] Enayat Ullah, Tung Mai, Anup Rao, **Ryan A. Rossi**, and Raman Arora, *Machine unlearning via algorithmic stability*, Symposium on Foundations of Responsible Computing (FORC).

[C66] Hongchang Gao, Gang Wu, **Ryan A. Rossi**, *Provable Distributed Stochastic Gradient Descent with Delayed Updates*, SDM, 2021.

[C65] Xin Qian, Eunyee Koh, Fan Du, Sungchul Kim, Joel Chan, **Ryan A. Rossi**, Sana Malik and Tak Yeon Lee, *Generating Accurate Caption Units for Figure Captioning*, WWW, 2021.

[C64] Saed Rezayi, Handong Zhao, Sungchul Kim, **Ryan A. Rossi**, Nedim Lipka, Sheng Li, *Edge: Enriching Knowledge Graph Embeddings with External Text*, NAACL, 2021.

[C63] Jun Yan, Mrigank Raman, Tianyu Zhang, **Ryan A. Rossi**, Handong Zhao, Sungchul Kim, Nedim Lipka, Xiang Ren, *Learning Contextualized Knowledge Structures for Commonsense Reasoning*, NeurIPS KR2ML Workshop, 2021.

[C62] Nesreen Ahmed, Richard Alo, Catherine Amelink, Young Yun Baek, Aashish Chudhary, Kristy Collins, Albert Esterline, Edward Fox, Geoffrey Fox, Aric Hagberg, Ron Kenyon, Chris Kuhlman, Jure Leskovec, Dustin Machi, Madhav Marathe, Nataragan Meghanathan, Yasuo Miyasaki, Judy Qiu, Naren Ramakrishnan, S. S. Ravi, **Ryan A. Rossi**, Roc Sosic and Gregor von Laszewski, *net.science: A Cyberinfrastructure for Sustained Innovation in Network Science and Engineering*, Gateways, 2020.

[C61] Youngsuk Park, **Ryan A. Rossi**, Zheng Wen, Gang Wu and Handong Zhao, *Structured Policy Iteration for Linear Quadratic Regulator*, International Conference on Machine Learning (ICML), 2020, Vienna, Austria.

[C60] Aldo Carranza, **Ryan A. Rossi**, Anup Rao and Eunyee Koh, *Higher-order Clustering in Complex Heterogeneous Networks*, KDD, 2020, San Diego, California USA.

[C59] **Ryan A. Rossi**, Nesreen K. Ahmed, Eunyee Koh, Sungchul Kim, Anup Rao, Yasin Abbasi-Yadkori, *A Structural Graph Representation Learning Framework*, Proceedings of the ACM International Conference on Web Search and Data Mining (WSDM), 2020, Houston, Texas USA.

[C58] Gromit Yeuk-Yin Chan, Fan Du, **Ryan A. Rossi**, Anup Rao, Eunyee Koh, Cláudio T. Silva, Juliana Freire, *Real-Time Clustering for Large Sparse Online Visitor Data*, Proceedings of The Web Conference (WWW), 2020, Taipei, Taiwan.

[C57] **Ryan A. Rossi**, Anup Rao, Tung Mai, Nesreen K Ahmed, *Fast and Accurate Estimation of Typed Graphlets*, Proceedings of The Web Conference (WWW), 2020, Taipei, Taiwan.

[C56] **Ryan A. Rossi**, Anup Rao, Sungchul Kim, Eunyee Koh, Nesreen K Ahmed, *From Closing Triangles to Closing Higher-Order Motifs*, Proceedings of The Web Conference (WWW), 2020, Taipei, Taiwan.

[C55] **Ryan A. Rossi**, Nesreen K. Ahmed, Eunyee Koh, Sungchul Kim, *Fast Hierarchical Graph Clustering in Linear-Time*, Proceedings of The Web Conference (WWW), 2020, Taipei, Taiwan.

[C54] John Boaz Lee, **Ryan A. Rossi**, Xiangnan Kong, Sungchul Kim, Eunyee Koh and Anup Rao, *Graph Convolutional Networks with Motif-based Attention*, Proceedings of the 28th ACM International Conference on Information and Knowledge Management (CIKM), 2019, Beijing, China.

[C53] Alireza Farhadi, MohammadTaghi Hajiaghayi, Tung Mai, Anup Rao, and **Ryan A. Rossi**, *Approximate Maximum Matching in Random Streams*, Proceedings of the Thirty-First Annual ACM-SIAM Symposium on Discrete Algorithms (SODA), 2020.

[C52] **Ryan A. Rossi**, Somdeb Sarkhel, Nesreen K. Ahmed, *Inferring Individual Level Causal Models from Graph-based Relational Time Series*, AAAI StarAI, 2020, New York, New York USA.

[C51] Tung Mai, Anup Rao, Matt Kapilevich, **Ryan A. Rossi**, Yasin Abbasi-Yadkori, and Ritwik Sinha, *On Densification for Minwise Hashing*, UAI, 2019, Tel Aviv, Israel.

[C50] Di Jin, **Ryan A. Rossi**, Eunyee Koh, Sungchul Kim, Anup Rao, and Danai Koutra, *Latent Network Summarization: Bridging Network Embedding and Summarization*, KDD, 2019, Anchorage, Alaska USA.

[C49] Di Jin, Mark Heimann, **Ryan A. Rossi**, and Danai Koutra, *node2bits: Compact Time- and Attribute-aware Node Representations for User Stitching*, ECML/PKDD, 2019, Würzburg, Germany.

[C48] Nesreen K. Ahmed, **Ryan A. Rossi**, John Boaz Lee, Theodore L. Willke, Rong Zhou, Xiangnan Kong, Hoda Eldardiry, *role2vec: Role-based Network Embeddings*, DLG KDD, 2019, Anchorage, Alaska USA.

[C47] Charles Chen, Ruiyi Zhang, Eunyee Koh, Sungchul Kim, Scott Cohen, **Ryan A. Rossi**, *FigCaps: Relational Reasoning in Figure Captioning*, IEEE Winter Conference on Applications of Computer Vision (WACV), 2020.

[C46] **Ryan A. Rossi**, Nesreen K. Ahmed, Aldo Carranza, David Arbour, Anup Rao, Sungchul Kim and Eunyee Koh, *Heterogeneous Graphlets*, MLG KDD, 2019, Anchorage, Alaska USA.

[C45] Charles Chen, Eunyee Koh, Sungchul Kim, **Ryan A. Rossi**, Scott Cohen, *Neural caption generation over figures*, UbiComp/ISWC, 2019.

[C44] Di Jin, **Ryan A. Rossi**, Danai Koutra, Eunyee Koh, Sungchul Kim and Anup Rao, *Latent Network Summarization*, MLG KDD, 2019, Anchorage, Alaska USA.

[C43] Youngsuk Park, Kanak Mahadik, **Ryan A. Rossi**, Gang Wu, Handong Zhao, *Linear Quadratic Regulator for Resource-Efficient Cloud Services*, ACM Symposium on Cloud Computing (SoCC'19), 2019.

[C42] Donghyun Kim, Sungchul Kim, Handong Zhao, **Ryan A. Rossi**, Sheng Li and Eunyee Koh, *Domain Switch-Aware Holistic Recurrent Neural Network for Modeling Multi-Domain User Behavior*, WSDM, 2019, Melbourne, Australia.

[C41] Giang Hoang Nguyen, John Boaz Lee, **Ryan A. Rossi**, Nesreen K. Ahmed, Eunyee Koh, and Sungchul Kim, *Dynamic Network Embeddings: From Random Walks to Temporal Random Walks*, BigData, 2018, Seattle, Washington.

[C40] John Boaz Lee, **Ryan A. Rossi**, Xiangnan Kong, *Graph Classification using Structural Attention*, KDD, 2018, London, UK.

[C39] **Ryan A. Rossi**, Rong Zhou, Nesreen K. Ahmed, and Hoda Eldardiry, *Relational Similarity Machines (RSM): A Similarity-based Learning Framework for Graphs*, BigData, 2018, Seattle, Washington.

[C38] Charles Chen, Sungchul Kim, Hung Bui, **Ryan A. Rossi**, Branislav Kveton, Eunyee Koh, and Razvan Bunescu, *Predictive Analysis by Leveraging Temporal User Behavior and User Embeddings*, CIKM, 2018, Turin, Italy.

[C37] **Ryan A. Rossi**, Nesreen K. Ahmed, and Eunyee Koh, *Higher-order Network Representation Learning*, WWW, 2018, Lyon, France.

[C36] **Ryan A. Rossi**, Rong Zhou, and Nesreen K. Ahmed, *Deep Inductive Network Representation Learning*, 3rd International Workshop on Learning Representations for Big Networks (WWW BigNet), 2018, Lyon, France.

[C35] Giang Hoang Nguyen, John Boaz Lee, **Ryan A. Rossi**, Nesreen K. Ahmed, Eunyee Koh, and Sungchul Kim, *Continuous-Time Dynamic Network Embeddings*, 3rd International Workshop on Learning Representations for Big Networks (WWW BigNet), 2018, Lyon, France.

[C34] **Ryan A. Rossi**, Nesreen K. Ahmed, Hoda Eldardiry, and Rong Zhou, *Similarity-based Multi-label Learning*, International Joint Conference on Neural Networks (IJCNN), 2018, Rio de Janeiro, Brazil.

[C33] Nesreen K. Ahmed, **Ryan A. Rossi**, Rong Zhou, John Boaz Lee, Xiangnan Kong, Theodore L. Willke, Hoda Eldardiry, *Learning Role-based Graph Embeddings*, StarAI IJCAI, 2018, Stockholm, Sweden.

[C32] Nesreen K. Ahmed, **Ryan A. Rossi**, Rong Zhou, John Boaz Lee, Xiangnan Kong, Theodore L. Willke, Hoda Eldardiry, *Representation Learning in Large Attributed Graphs*, WiML NIPS, 2017, Long Beach, CA USA.

[C31] James P. Canning, Emma E. Ingram, Sammantha Nowak-Wolff, Adriana M. Ortiz, Nesreen K. Ahmed, **Ryan A. Rossi**, Karl R. B. Schmitt, Sucheta Soundarajan, *Network Classification and Categorization*, International Conference on Complex Networks (CompleNet), 2018, Boston, MA USA.

[C30] Nesreen K. Ahmed, Nick Duffield, Theodore L. Willke, **Ryan A. Rossi**, *On Sampling from Massive Graph Streams*, VLDB, 1430–1441, 2017, Munich, Germany.

[C29] Nesreen K. Ahmed, **Ryan A. Rossi**, Theodore L. Willke, and Rong Zhou, *Edge Role Discovery via Higher-order Structures*, PAKDD, 2017, Jeju, Korea.

[C28] Nesreen K. Ahmed, **Ryan A. Rossi**, Theodore L. Willke, and Rong Zhou, *A Higher-order Latent Space Network Model*, Proceedings of the AAAI PAIR (Plan, Activity, and Intent Recognition) Workshop, 2017, San Francisco, CA USA.

[C27] **Ryan A. Rossi** and Rong Zhou, *Leveraging Multiple GPUs and CPUs for Graphlet Counting in Large Networks*, ACM International Conference on Information and Knowledge Management (CIKM), 2016, Indianapolis, IN USA.

[C26] Nesreen K. Ahmed, **Ryan A. Rossi**, Theodore L. Willke, and Rong Zhou, *Estimation of Local Subgraph Counts*, Proceedings of the IEEE International Conference on Big Data, 2016, Washington D.C., USA.

[C25] **Ryan A. Rossi**, Rong Zhou, and Nesreen K. Ahmed, *Relational Similarity Machines*, Proceedings of the 12th International Workshop on Mining and Learning with Graphs (KDD MLG), Pages 8, 2016, San Francisco, CA USA.

[C24] Nesreen Ahmed, Theodore L. Willke, and **Ryan A. Rossi**, *Exact and Estimation of Local Edge-centric Graphlet Counts*, KDD BigMine, 2016, San Francisco, CA USA.

[C23] **Ryan A. Rossi** and Nesreen K. Ahmed, *An Interactive Data Repository with Visual Analytics*, SIGKDD Explorations, 2016.

[C22] **Ryan Rossi** and Rong Zhou, *Towards Interactive Relational Learning*, Twenty-Ninth Conference on Artificial Intelligence (AAAI), 2016, Phoenix, Arizona USA.

[C21] Nesreen K. Ahmed, Jennifer Neville, **Ryan A. Rossi**, Nick Duffield, *Efficient Graphlet Counting for Large Networks*, IEEE International Conference on Data Mining (ICDM), pages 10, 2015. *Invited to KAIS Journal Special Issue (ICDM Best papers)*, Atlantic City, NJ USA.

[C20] **Ryan A. Rossi** and Rong Zhou, *Scalable Relational Learning for Large Heterogeneous Networks*, IEEE International Conference on Data Science and Advanced Analytics (DSAA), 10 pages, 2015, Paris, France.

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Research Grants

2018-2023 NSF, *CINES: A Scalable Cyberinfrastructure for Sustained Innovation in Network Engineering and Science*, PIs: Madhav Marathe (VTech), Jure Leskovec (Stanford), Geoffrey Fox (IU), Total: **$4,000,000**

2017 Xerox Research: DocuShare.
A Deep Similarity-based Graph Model for Learning Relevant Tags from Unstructured Data.
PI: *Ryan Rossi*, Co-PI: Hoda Eldardiry. Awarded **$450,000** total

2016-2018 XIG Explore Research: Self Machine Learning Program.
Relational Deep Learning.
PI: *Ryan Rossi*. **$300,000** awarded over 3 years, **$900,000** total
Deep learning in graphs including inductive network representation learning, graph embeddings, and learning representations from attributed graphs

2017 Xerox Research: Horizon 3 Research Program.
Intelligent Workflow Automation using AI Planning, Learning, and Conversation Agents.
PI: Rong Zhou, Co-PI: *Ryan Rossi*. Awarded **$720,000** total

2016 NVIDIA Hardware Research Gift.
Deep Graph Learning using Higher-order Functions based on Network Motifs.
PI: *Ryan Rossi*.

2015-2017 Xerox Foundation: University Research Collaboration.
Learning from an Expert in Noisy, Structured Domains: Adapting to Healthcare Problems.
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Selected Talks

2018 BigData, *Dynamic Network Embeddings: From Random Walks to Temporal Random Walks*, Seattle, Washington.

2018 BigData, *Relational Similarity Machines (RSM): A Similarity-based Learning Framework for Graphs*, Seattle, Washington.

2018 WWW, *Higher-Order Network Representation Learning*, Lyon, France.

2018 WWW BigNet, *Deep Inductive Network Representation Learning*, Lyon, France.

2017 Adobe Research, *Machine Learning in Large Graphs*, San Jose, CA.

2016 DARPA, *HiperGraph: High-Performance Graph Analytics*, Washington, DC.

2016 CIKM, *Leveraging Multiple GPUs and CPUs for Graphlet Counting in Large Networks*, Indianapolis, Indiana.

2016 AAAI, *Towards Interactive Relational Learning*, Phoenix, Arizona.

2015 DSAA, *Parallel Collective Factorization*, Paris, France.

2015 XIG Conference, *Deep Learning on the GPU*, Webster, NY.

2015 FIU SCIS Invited Lecture Series, *Modeling and Mining Dynamic Attributed Networks*, Miami, FL.

2015 NJIT CS Colloquium, *Relational Machine Learning for Dynamic Networks*, Newark, NJ.

2015 Air Force Institute of Technology (AFIT) ECE Seminar, *Modeling and Mining Dynamic Attributed Networks*, Dayton, OH.

2015 Sandia National Lab, *Modeling and Mining Dynamic Networks*.

2015 WFU CS Colloquium, *Relational Time-series Learning for Improving Mining and Prediction Tasks*, Wake Forest, NC.

2015 WPI CS Colloquium, *Modeling and Mining Dynamic Attributed Networks*, Worcester, MA.

2015 The Network Data Repository with Interactive Graph Analytics and Visualization, *Twenty-Ninth Conference on Artificial Intelligence (AAAI)*, Austin, TX.

2014 Poster Symposium @ PARC, *Parallel Collective Factorization for Predictive and Descriptive Modeling of Large Heterogeneous Networks*.

2013 Purdue CS 50th Anniversary Celebration, *Find Cliques Fast with our Parallel Max-Clique Algorithms for Billion Edge Graphs*, West Lafayette, IN.

2013 Palo Alto Research Center, *Parallel Collective Matrix Factorization Framework for Real-time Recommendations in Big Data*.

2012 Pacific-Asia Conference on Knowledge Discovery and Data Mining, *Temporal-Relational Ensemble Methods*, Kuala Lumpur, Malaysia.

2012 9th Workshop on Algorithms and Models for the Web Graph, *Dynamic PageRank using Evolving Teleportation*, Halifax, Nova Scotia, Canada.

2012 Lawrence Livermore National Laboratory, *Dynamic PageRank using Evolving Teleportation*, Livermore, CA.

2010 16th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Social Media Analytics, *Modeling the Evolution of Discussion Topics and Communication to Improve Relational Classification*, Washington, DC.

2011 ISCR Annual Symposium held at Lawrence Livermore National Laboratory, *Modeling Temporal Behavior in Large Networks*, Livermore, CA.

2009 Jet Propulsion Laboratory, *A Scalable Image Processing Framework for Gigapixel Mars and Other Celestial Body Images*, Pasadena, CA.

2008 University of Massachusetts Amherst, *Discovering Causal Inferences within a Collaborative Peer Production System (Poster)*, Amherst, MA.

2007 IEEE International Conf, on Bioinformatics and Life Sciences Computing, *Crick's Hypothesis Revisited: The Existence of a Universal Coding Frame*, Niagara Falls, Canada.

2007 Moscow State University in Russia, *Crick's Hypothesis Revisited: The Existence of a Universal Coding Frame (Invited)*, Moscow, Russia.

2007 Bioinformatics 3rd Annual Research Symposium, *Crick's Hypothesis Revisited: The Existence of a Universal Coding Frame*, Clemson University.

2007 ACM Consortium for Computing Sciences in Colleges, *Presented a workshop: Computing and the Mysteries of Life: Bioinformatics (Invited)*.

2007 Computer Security Conference, *Secure Web Programming Metrics and COSECMO*.

2006 Celebration of Inquiry: Guiding our Changing World, *Crick's Hypothesis Revisited: The Existence of a Universal Coding Frame*, Coastal Carolina University.

2006 Science Success Seminar for Freshmen, *Undergraduate Research: What, Why and How? (Invited)*, Coastal Carolina University.

2006 SoTL Conference: On the Subject, *Bioinformatics Action Labs*.

2008 Computer Security Conference, *Signature Based Intrusion Detection using Latent Semantic Analysis*.

2008 Computer Security Conference, *Detecting Spam Sites by Ranking Links*.

Honors and Awards

2020	Elevation to IEEE Senior Member.
2017	Research Impact Award (PARC).
2016	PARC Research Award (Nominated by peers).
2012–2014	National Science Foundation (NSF) Graduate Fellow (GRFP).
2009–2012	Department of Defense: National Defense Science & Engineering PhD (NDSEG) Fellow.
2014–2015	Bilsland Dissertation Fellowship Awarded to Outstanding Ph.D. candidates.
2009	Purdue University Fredrick N. Andrews Doctoral Fellow.
2012	WAW Travel Award.
2011	NASA Invention Award (Monetary) for NPO-47898 (Polyphony: Workflow Orchestration Framework for High Performance and Parallel Computing).
2011–2012	LLNL Scholar (Cyber Defenders).
2010	Naval Research Laboratory (NREIP) Fellow: Center for Applied Research in Artificial Intelligence, Office of Naval Research (DoN).
Summer 2009	NASA USRP Fellow, Jet Propulsion Laboratory, California Institute of Technology.
2009	National Aeronautics and Space Administration SC Space Grant.
Spring 2009	NASA USRP Fellow, Jet Propulsion Laboratory, California Institute of Technology.
2008	REU NSF Fellowship Award, University of Massachusetts at Amherst.
2009–2014	Science, Mathematics And Research for Transformation (SMART) Fellow (declined).
2009–2014	Duke University Doctoral Fellow (declined).
2005–2009	Full merit scholarship, Coastal Carolina University.
2009	President's Award (Graduating with 4.0 GPA).
–	Erdős Number 3, Rossi-Duffield-Alon-Erdős.
2008	Outstanding Graduating Senior, College of Natural and Applied Sciences (CCU).
2007	Research Fellow, New Mexico Institute of Technology.
2007	Selected by University to Represent the College of Sciences at Moscow State University Conference (CCU).
2007	College of Natural and Applied Sciences Ambassador for Commencement (CCU).
2006–2007	Awarded Scholarship of Teaching and Learning Grant for Action Labs.
2006	Student Excellence in Research Award, Coastal Carolina University.
2005–2011	Inducted in Upsilon Pi Epsilon (CS) at Purdue and CCU, Pi Mu Epsilon (Math), Omicron Delta Kappa (Leadership), Phi Eta Sigma (Top freshmen).
2005–2009	Supported by NSF Grant ATM-0521002 (Jean-Louis Lassez & Var Limpasuvan).
2005–2009	President's List.
2003–2004	Obtained 11 Software Engineering and Information Technology Certifications at age 16-17: Microsoft Certified Solution Developer (MCSD), MCAD, CIW-A, CCNA, Linux+, Project+, i-Net+, Server+, Security+, Network+, A+, and MCP.

Teaching

Spring 2008	**Lecturer**, *Search Engine Theory, CS 465*, Coastal Carolina University.

Fall 2008	**Lecturer**, *Bioinformatics, BINF 101*, Coastal Carolina University.
Spring 2007	**Lecturer**, *Numerical Methods, MATH 360*, Coastal Carolina University.
Spring 2007	**Teaching Assistant**, *Bioinformatics, BINF 101*, Coastal Carolina University.
Fall 2007	**Lecturer**, *Algorithms in Bioinformatics, CS 460*, Coastal Carolina University.
Fall 2007	**Teaching Assistant**, *Bioinformatics, BINF 101*, Coastal Carolina University.
Spring 2007	**Teaching Assistant**, *Algorithm Design II, CS 150*, Coastal Carolina University.
Spring 2006	**Teaching Assistant**, *Algorithm Design I, CS 140*, Coastal Carolina University.
2006–2008	As a teaching assistant I gave lectures, developed: homework, labs, and programs, held office hours, maintained course website. I also graded the homework, labs and projects.

Students Supervised

2020-2022	**Namyong Park**, *CMU*, Facebook Research.
2020-2022	**Sudhanshu Chanpuriya**, *UMass Amherst*, Ph.D. Student.
2020-2022	**Hyeok Kim**, *Northwestern*, Ph.D. Student.
2021-2022	**Arpit Narechania**, *Georgia Tech*, Ph.D. Student.
2021-2022	**Mustafa Abdallah**, *Purdue University*, Assistant Professor at IUPUI.
2021-2022	**Gaurav Verma**, *Georgia Tech*, Ph.D. Student.
2021-2022	**Mohammad Mehrabi**, *USC*, Assistant Professor at IUPUI.
2022	**Shravika Mittal**, *Georgia Tech*, Ph.D. Student.
2022	**April Chen**, *Harvard University*, Ph.D. Student.
2022	**Shashank Goel**, *UCLA*, Ph.D. Student.
2022	**Xinyu Shi**, *Univ. of Waterloo*, Ph.D. Student.
2022	**Tingyao Hsu**, *Penn. State*, Ph.D. Student.
2022	**Yuhang Yao**, *CMU*, Ph.D. Student.
2022	**Ziqi Zhou**, *Univ. of Waterloo*, Ph.D. Student.
2022	**Carol (Xinyi) Zheng**, *CMU*, Ph.D. Student.
2022	**Shanyun Gao**, *Purdue University*, Ph.D. Student.
2022	**Rashmi Ranjan Bhuyan**, *USC*, Ph.D. Student.
2022	**Luke Snyder**, *University of Washington*, Ph.D. Student.
2022	**Guande Wu**, *NYU*, Ph.D. Student.
2022	**Ryan Aponte**, *CMU*, Ph.D. Student.
2022	**Chen Chen**, *UMD*, Ph.D. Student.
2022	**Hritik Bansal**, *UCLA*, Ph.D. Student.
2022	**Huayi Wang**, *Georgia Tech*, Ph.D. Student.
2022	**Alex Tang**, *Northwestern*, Ph.D. Student.
2022	**Jean-Peic Chou**, *Stanford University*, Ph.D. Student.
2022	**Melanie Bancilhon**, *Washington University in St. Louis*, Ph.D. Student.
2022	**Jianna Audrey So**, *Stanford University*, Ph.D. Student.

2022	**Jaeho Bang**, *Georgia Tech*, Ph.D. Student.
2022	**Dario Garigliotti**, *Aalborg University*, Ph.D. Student.
2022	**Princess Sampson**, *University of Pennsylvania*, Ph.D. Student.
2022	**Enyu Cai**, *Purdue University*, Ph.D. Student.
2022	**Dongliang Guo**, *University of Virginia*, Ph.D. Student.
2022	**Songwen Hu**, *Shanghai Jiao Tong University*, Ph.D. Student.
2021	**Gaurav Gupta**, *Rice University*, Ph.D. Student.
2021	**Yang Li**, *UNC*, Ph.D. Student.
2021	**Nathan Ng**, *UMass Amherst*, Ph.D. Student.
2021	**Bingjie (Jenny) Xu**, *Northwestern*, Ph.D. Student.
2021	**Beleicia Bullock**, *Stanford University*, Ph.D. Student.
2021	**Md Main Uddin Rony**, *UMD*, Ph.D. Student.
2021	**Fayokemi Ojo**, *John Hopkins University*, Ph.D. Student.
2021	**Can Qin**, *Northeastern*, Ph.D. Student.
2021	**Shivam Srivastava**, *UMass Amherst*, Ph.D. Student.
2021	**Abhraneel Sarma**, *Northwestern*, Ph.D. Student.
2021	**Weixin Jiang**, *Northwestern*, Ph.D. Student.
2021	**Duc Hoang**, *University of Texas at Austin*, Ph.D. Student.
2021	**Benjamin Coleman**, *Rice University*, Ph.D. Student.
2021	**Pattara Sukprasert**, *Northwestern*, Ph.D. Student.
2020	**Jiong Zhu**, *University of Michigan*, Ph.D. Student.
2019-2021	**Xin Qian**, *University of Maryland*, Ph.D. Student.
2020	**Yue Zhao**, *CMU*, Ph.D. Student.
2020-2021	**Sejoon Oh**, *Georgia Tech*, Ph.D. Student.
2020	**Mojtaba Sahraee-Ardakan**, *USC*, Ph.D. Student.
2020	**Enayat Ullah**, *John Hopkins University*, Ph.D. Student.
2019-2020	**Jun Yan**, *USC*, Ph.D. Student.
2020	**Shenyu Xu**, *Georgia Tech*, Ph.D. Student.
2020	**Zening Qu**, *University of Washington*, Ph.D. Student.
2020	**Ihudiya Finda Ogbonnaya-Ogburu**, *University of Michigan*, Ph.D. Student.
2020	**Zhuohao Zhang**, *University of Illinois at Urbana-Champaign*, Ph.D. Student.
2020	**Galen Weld**, *University of Washington*, Ph.D. Student.
2020-2021	**Chenhan Yuan**, *Virginia Tech*, Ph.D. Student.
2020	**Camille Harris**, *Georgia Tech*, Ph.D. Student.
2020	**Mrigank Raman**, *USC*, Ph.D. Student.
2020	**Zihao Zhou**, *UCSD*, Ph.D. Student.
2019-2022	**Alireza Farhadi**, *University of Maryland (UMD)*, Ph.D. Candidate.
2019-2022	**Hongjie Chen**, *Virginia Tech*, Ph.D. Candidate.

2019	**Youngsuk Park**, *Stanford University*, Ph.D. Candidate.
2019	**Yikun Xian**, *Rutgers University*, Ph.D. Candidate.
2019-2020	**Saed Rezayi**, *University of Georgia (UGA)*, Ph.D. Candidate.
2019-2020	**Gromit Yeuk-Yin Chan**, *New York University (NYU)*, Ph.D. Candidate.
2019	**Kirankumar Shiragur**, *Stanford University*, Ph.D. Candidate.
2019	**Hongchang Gao**, *University of Pittsburgh*, Ph.D. Candidate.
2019	**He Jia**, *Georgia Institute of Technology*, Ph.D. Candidate.
2018-2021	**Di Jin**, *University of Michigan*, Ph.D. Candidate, Research led to a paper entitled "Deep Graph Attention Models" published at KDD. Patent application filed on the research. Serving on his Ph.D. committee .
2018-2019	**Mark Heimann**, *University of Michigan*, Ph.D. Candidate.
2018	**Aldo Carranza**, *Stanford University*, Ph.D. Student.
2018	**Zahra Shakeri**, *Rutgers University*, Ph.D. Candidate.
2018	**Donghyun Kim**, *POSTECH*, Graduated @ Oath/Yahoo Research.
2018-2019	**Jianjun Luo**, *Worcester Polytechnic Institute (WPI)*, Ph.D. Candidate.
2018-2019	**Charles Chen**, *Ohio State University*, Ph.D. Candidate.
2018	**Tung Mai**, *Georgia Institute of Technology*, Ph.D. Candidate.
2017	**Jungho Park**, *Seoul National University*, Ph.D Candidate, Filed 3 patent applications related to anomaly detection in large multi-variate time series.
2017-2021	**John Boaz Lee**, *Worcester Polytechnic Institute (WPI)*, Ph.D. Candidate, Research led to a paper entitled "Deep Graph Attention Models" published at KDD. Patent application filed on the research. Served on his Ph.D. committee "Deep Learning on Graph-structured Data". Successfully defended and now at Facebook Research. .
2017-2018	**Giang Hoang Nguyen**, *Worcester Polytechnic Institute (WPI)*, Masters Student.

Ph.D. Committees

2021–present	**George Panagopoulos**, *École Polytechnique*, Ph.D. Candidate, Dissertation: "Learning Influence Representations: Methods and Applications" .
2020–present	**Hongjie Chen**, *Virginia Tech*, Ph.D. Candidate.
2018–2021	**Di Jin**, *University of Michigan*, Ph.D. Candidate, Dissertation: "Network Summarization and Embedding" .
2016-2020	**John Boaz Lee**, *Worcester Polytechnic Institute (WPI)*, Ph.D. Candidate, Dissertation: "Deep Learning on Graph-structured Data" .

Research Software & Codes

2015–present	**Parameterized Graphlet Decomposition Library** (PGD), **http://graphlets.org**, *A fast parallel high-performance parameterized graphlet decomposition library for massive networks.* **http://github.com/nkahmed/pgd.git** .

2013–present	**Network Repository** (**NR**), http://networkrepository.com, *The first **interactive data repository** that integrates visualization with state-of-the-art statistical methods and analytic techniques to support discovery and exploration of data in real-time. NR is the largest network data repository (5000+ donations, 30+ collections, and growing.).*
2014–present	**GraphVIS**, http://graphvis.com, *Interactive visual graph mining and machine learning on the web. Visualize and explore network data easily. The most powerful visual analytics platform for network data. GraphVIS is the result of years of research in relational machine learning and graph mining. A free demo version is available at http://networkrepository.com/graphvis.*
2013	**Parallel Maximum Clique (PMC) Library**, *A parallel high performance library for solving the maximum clique problem for dense graphs as well as large sparse networks*, Download: http://www.maxcliques.com.
2013–present	**MLVis,** http://mlvis.com, *MLVis is an* interactive data repository *that makes it easy to find, explore, and understand (ML) data. It provides researchers with open, persistent, robust, and accessible data along with web-based visual analytic tools to easily understand, explore, and compare data.*
2012	**Dynamic PageRank**, A package for modeling the importance and influence of nodes in dynamic networks with external interest/attributes. Download: http://www.ryanrossi.com/dynamic_pagerank.

Professional Service & Leadership

Invited SPC/PC Member/Organizer:

2022-2023	Co-Organized the V2LApp Workshop, held jointly at EACL/ACL/EMNLP
2021-2023	Associate Editor for Frontiers in Big Data (Machine Learning and Artificial Intelligence)
2020-2023	International Conference on Learning Representations (ICLR)
2019-2023	Neural Information Processing Systems (NeurIPS)
2019-2023	International Conference on Machine Learning (ICML)
2019-2022	European Conference on Machine Learning (ECML/PKDD)
2018-2023	SIAM International Conference on Data Mining (SDM)
2016-2023	International Joint Conferences on Artificial Intelligence (IJCAI)
2016-2023	World Wide Web Conference (WWW)
2015-2023	AAAI Conference on Artificial Intelligence
2019-2023	International Conference on Information and Knowledge Management (CIKM)
2021-2022	IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)
2021-2022	SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)
2019-2021	International Conference on Artificial Neural Networks (ICANN)
2019-2021	ACM CHI Conference on Human Factors in Computing Systems
2016-2021	IEEE Big Data
2019	NetSci-X
2018	3rd International Workshop on Learning Representations for Big Networks (WWW BigNet)
2018	IJCAI-ECAI SocInf+MAISoN Workshop
2016-2020	BigGraphs Workshop at IEEE BigData

2016	ICDM SoMeRis Workshop

Journal Reviewing

2018-	Review Editor, Machine Learning and Artificial Intelligence, Frontiers in Big Data
2012-20	Transactions on Knowledge and Data Engineering (TKDE)
2015-20	Artificial Intelligence
2019-20	Journal of Machine Learning Research
2012-13, 2017-20	Data Mining and Knowledge Discovery (DMKD)
2018-20	Theoretical Computer Science (TSC)
2019-20	Information Systems
2019-20	Network Science
2020	IEEE Transactions on Intelligent Transportation Systems
2020	ACM Computing Surveys
2020	Journal of Statistical Mechanics: Theory and Experiment (JSTAT)
2020	IEEE Transactions on Network Science and Engineering
2019-20	IEEE Intelligent Systems
2018-19	ACM Transactions on Intelligent Systems and Technology (TIST)
2018-19	Social Network Analysis and Mining
2019	Information Processing and Management
2019	Applied Network Science
2019	Future Internet
2015-2017	Internet Mathematics
2015-2019	Knowledge and Information Systems (KAIS)
2016-2020	IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
2018	IEEE Internet of Things Journal
2018	IEEE Transactions on Emerging Topics in Computational Intelligence
2013-2014	The Annals of Applied Statistics
2016	Physica A: Statistical Mechanics and its Applications
2016-2017	ACM Transactions on Information Systems (TOIS)
2015-2018	Journal of Big Data
2016	Optimization Methods and Software

Proposal Reviewing

2019	Natural Sciences and Engineering Research Council of Canada (NSERC)
2018	Swiss National Science Foundation (SNSF)
2017	NSF Information & Intelligent Systems Panel

Other Service

2005–Present	AAAI, IEEE, ACM, and SIAM Member.

2004–Present	Microsoft Certified Member, Cisco Certified Member, CompTIA Member, Certified Internet Webmaster Member
2009–2015	Machine Learning @ Purdue.
2009–2015	Indiana Center for Database Systems (ICDS).
2009–2012	Network Learning and Discovery Laboratory, *Purdue*.
2008–2009	President, Upsilon Pi Epsilon, National Computer Science Honor Society (CCU)
2007–2008	Vice President, Upsilon Pi Epsilon, National Computer Science Honor Society (CCU)
2007–2008	President, ACM Student Chapter & Numbers and Bytes (CCU)
2008	Volunteer Mentor for Middle School Students.

Computer Skills

Certifications	Microsoft Certified Solution Developer (MCSD), Microsoft Certified Applications Developer (MCAD), CIW-A, CCNA, Linux+, Project+, i-Net+, Server+, Security+, Network+, A+, MCP

OS	Linux/Unix, Mac OSX, Windows, DOS	**Scientific**	Matlab, Julia, Maple, R, Scilab
Programming	C/C++, Python, Java, C#, Ruby, PHP, Javascript, JQuery, Ajax, ASP, SQL, Haskell, CoQ (Interative Prover), 80x86 Assem.	**Media**	HTML, Photoshop, Flash, VTK, 3D Max, Radiant, 3D Worldcraft
Distributed Computing	Hadoop/MapReduce, MPI, OpenMP, Spark, Accumulo, Amazon Elastic Cloud (EC2)	**Tools/Typo.**	Eclipse, Spyder, MS Visual Studio, Git/SVN/CVS, LaTeX, MS Office