Jennifer Neville
Departments of Computer Science and Statistics
Purdue University
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Research Interests

Artificial intelligence, machine learning, data mining, relational learning, social network analysis, link analysis, computational social science.

Education

Ph.D., University of Massachusetts Amherst, Computer Science, 2006

Dissertation: *Statistical Models and Analysis Techniques for Learning in Relational Data*
Advisor: David Jensen

M.S., University of Massachusetts Amherst, Computer Science, 2004

B.S. *summa cum laude*, University of Massachusetts Amherst, Computer Science, 2000

Professional Experience

2019–present:	*Professor*, Purdue University Joint appointment: Computer Science (75%) and Statistics (25%)
2014–present:	*Miller Family Chair*, Purdue University
2013–2019:	*Associate Professor*, Purdue University Joint appointment: Computer Science (75%) and Statistics (25%)
2013	*Visiting Scientist*, Simons Institute for Theoretical Computing, UC Berkeley
2006–2013:	*Assistant Professor*, Purdue University Joint appointment: Computer Science (75%) and Statistics (25%)
2000–2006:	*Research Assistant*, University of Massachusetts Amherst
2000–2000:	*Research Intern*, AT&T Shannon Laboratory

Awards and Honors

Keynote Address, 23^{rd} Pacific-Asia Conference on Knowledge Discovery and Data Mining, 2019

Invited Plenary Panelist: *Future of Artificial Intelligence*,
33^{rd} AAAI Conference on Artificial Intelligence, 2019

Program Committee Chair, 18^{th} SIAM International Conference on Data Mining, 2019

Distinguished Lecture, Virginia Tech University, Computer Science Department, 2019

Keynote Address, 28^{th} Keck Annual Research Conference, 2018

Invited Plenary Panelist: *Societal Impact of Data Science and Artificial Intelligence*,
ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2018

AAAI Executive Council, Elected Councilor, 2015-2018

Keynote Address, 27^{th} International Conference on Inductive Logic Programming, 2017

Keynote Address, 3^{rd} ACM International Conference on the Theory of Information Retrieval, 2017

Keynote Address, 6^{th} International Conference on Complex Networks and Their Applications, 2017

Invited Plenary Panelist *Is Deep Learning the New 42?*,
ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2016

Distinguished Lecture, Max Planck Institute of Informatics, 2016

Program Committee Chair, 9^{th} ACM International Conference on Web Search and Data Mining, 2016

Keynote Address, 2^{nd} European Network Intelligence Conference, 2015

Purdue College of Science Research Award, 2014

Keynote Address, 27^{th} International Conference of the Florida Artificial Intelligence Research Society, 2014

Purdue College of Science Graduate Mentoring Award, 2013

Outstanding Achievement by a Young Alum, School of CS, University of Massachusetts Amherst, 2013

NSF Career Award, 2012

Purdue College of Science Team Award, 2012

Purdue Seed for Success Award, 2011, 2012

Purdue College of Science Interdisciplinary Award, 2009, 2010

ICDM Best Research Paper Award Runner-Up, 2009

IEEE Intelligent Systems Top Ten to Watch, 2008

Microsoft New Faculty Fellowship Finalist, 2007

DARPA Computer Science Study Panel Member, 2007

Nominated for ACM Doctoral Dissertation Award, University of Massachusetts, 2006

KDD Cup First Place Open Task, 9^{th} ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2003

Young Investigator Award, DARPA IPTO Cognitive Systems Conference, 2003

AT&T Labs Graduate Fellowship, 2000–2006

National Science Foundation Graduate Research Fellowship, 2000–2003

National Physical Science Consortium Fellowship, 2000 *(declined)*

Bell Labs Graduate Research Fellowship, 2000 *(declined)*

Publications

Journal Articles

1. Scalable and exact sampling method for probabilistic generative graph models.
   S. Moreno, J. Pfeiffer III, and J. Neville.
   Data Mining and Knowledge Discovery, Volume 32, Issue 6, pp 1561-1596, 2018.

2. Designing Size Consistent Statistics for Accurate Anomaly Detection in Dynamic Networks.
   T. La Fond, J. Neville, and B. Gallagher.
   ACM Transactions on Knowledge Discovery from Data, 12:14, 2018.

3. Tied Kronecker Product Graph Models to Capture Variance in Network Populations.
   S. Moreno, J. Neville, and S. Kirshner
   ACM Transactions on Knowledge Discovery from Data, 12:3, 2018.

4. Graphlet Decomposition: Framework, Algorithms, and Applications.
   N. Ahmed, J. Neville, R. Rossi, N. Duffield, T. Willke

Knowledge and Information Systems, to appear.

5. Network Sampling: From Static to Streaming Graphs.
   N. Ahmed, J. Neville, and R. Kompella
   Transactions on Knowledge Discovery and Data Mining, Vol. 8, Issue 2, 2014.

6. Transforming Graph Data for Statistical Relational Learning.
   R. Rossi, L. McDowell, D. Aha and J. Neville
   Journal of Artificial Intelligence Research, Vol. 45, 363-441, 2012.

7. Correcting Evaluation Bias of Relational Classifiers with Network Cross Validation.
   J. Neville, B. Gallagher, T. Eliassi-Rad, and T. Wang
   Knowledge and Information Systems, 30-1, 31-55, 2012.

8. Gender demographics trends and changes in U.S. CS departments.
   D. Baumann, S. Hambrusch, and J. Neville.
   Communications of the ACM, 54:11, 38-42, 2011.

9. Guided Data Repair
   M. Yakout, A. Elmagarmid, J. Neville, M. Ouzzani, and I. Ilyas
   Proceedings of the VLDB Endowment, 4:5, 279-289, 2011.

10. Prediction models for long-term Internet prefix availability
    R. Khosla, S. Fahmy, Y. C. Hu, and J. Neville
    Computer Networks, 55:3, 873-889, 2010.

11. A Bias-Variance Decomposition for Collective Inference Models.
    J. Neville and D. Jensen.
    Machine Learning Journal, 73:1, 87-106, 2008.

12. Dependency Networks for Relational Data.
    J. Neville and D. Jensen.
    Journal of Machine Learning Research, 8(Mar):653–692, 2007.

13. Exploiting Relational Structure to Understand Publication Patterns in High-Energy Physics.
    A. McGovern, L. Friedland, M. Hay, B. Gallagher, A. Fast, J. Neville and D. Jensen.
    SIGKDD Explorations, Volume 5, Issue 2, pp. 165-172, 2003.

Conference Papers

14. Exploiting Interaction Links for Node Classification with Deep Graph Neural Networks
    H. Park and J. Neville
    Proceedings of the 28^{th} *International Joint Conference on Artificial Intelligence* (IJCAI), 8 pages, 2019.
    (Acceptance rate: 18%)

15. Learning How to Intervene in True News Diffusion to Combat Fake News Spread.
    M. Goindani and J. Neville.
    Proceedings of the 35^{th} *Conference on Uncertainty in Artificial Intelligence* (UAI), 10 pages, 2019.
    (Acceptance rate: 26%)

16. HATS: A Hierarchical Sequence-Attention Framework for Inductive Set-of-Sets Embeddings.
    C. Meng, J. Yang, B. Ribeiro, and J. Neville.
    Proceedings of the 25^{th} *ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), 10 pages, 2018. (Acceptance rate: 9%)

17. A Stein-Papangelou Goodness-of-Fit Test for Point Processes.
    J. Yang, V. Rao and J. Neville.
    Proceedings of the 23^{nd} *International Conference on Artificial Intelligence and Statistics (AISTAT)*, 10 pages, 2019. (Acceptance rate: 32%)

18. TransConv: Relationship Embedding in Social Networks.
Y. Lai, J. Neville, and D. Goldwasser.
Proceedings of the 33^{rd} *Conference on Artificial Intelligence* (AAAI), 9 pages, 2019.
(Acceptance rate: 16%)

19. Multi-level hypothesis testing for populations of heterogeneous networks
G. Gomes, J. Neville, and V. Rao.
Proceedings of the 18^{th} *IEEE International Conference on Data Mining* (ICDM), 6 pages, 2018.
(Acceptance rate: 20%)

20. The Indian Buffet Hawkes Process to Model Evolving Latent Influences.
X. Tan, V. Rao and J. Neville.
Proceedings of the 34^{th} *Conference on Uncertainty in Artificial Intelligence* (UAI), 10 pages, 2018.
(Acceptance rate: 31%)

21. Exploring Student Check-In Behavior for Improved Point-of-Interest Prediction.
M. Hang, I. Pytlarz, and J. Neville.
Proceedings of the 24^{th} *ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), 10 pages, 2018. (Acceptance rate: 22%)

22. Goodness-of-fit Testing for Discrete Distributions via Stein Discrepancy.
J. Yang, Q. Liu, V. Rao and J. Neville.
Proceedings of the 35^{th} *International Conference on Machine Learning* (ICML), 9 pages, 2018.
(Acceptance rate: 25%)

23. Nested CRP with Hawkes-Gaussian Processes.
X. Tan, V. Rao and J. Neville.
Proceedings of the 22^{nd} *International Conference on Artificial Intelligence and Statistics (AISTAT)*, 10 pages, 2018. (Acceptance rate: 33%)

24. Subgraph Pattern Neural Networks for High-Order Graph Evolution Prediction.
C. Meng, C. Mouli, B. Ribeiro, and J. Neville.
Proceedings of the 32^{nd} *Conference on Artificial Intelligence* (AAAI), 9 pages, 2018.
(Acceptance rate: 24%)

25. Decoupling Homophily and Reciprocity with Latent Space Network Models
J. Yang, V. Rao and J. Neville
Proceedings of the 33^{rd} *Conference on Uncertainty in Artificial Intelligence* (UAI), 10 pages, 2017.
(Acceptance rate: 31%)

26. Unified Representation and Lifted Sampling for Generative Models of Social Networks
P. Robles, S. Moreno, and J. Neville
Proceedings of the 26^{th} *International Joint Conference on Artificial Intelligence* (IJCAI), 8 pages, 2017.
(Acceptance rate: 25%)

27. Should We Be Confident in Peer Effects Estimated From Partial Crawls of Social Networks?
J. Yang, B. Ribeiro and J. Neville
Proceedings of the 11^{th} *International AAAI Conference on Weblogs and Social Media* (ICWSM), 4 pages, 2017.
(Acceptance rate: 19%)

28. Deep Collective Inference
J. Moore and J. Neville
Proceedings of the 31^{st} *Conference on Artificial Intelligence* (AAAI), 9 pages, 2017.
(Acceptance rate: 21%)

29. Sampling of Attributed Networks from Hierarchical Generative Models
P. Robles, S. Moreno, and J. Neville

Proceedings of the 22^{nd} *ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), 10 pages, 2016. (Acceptance rate: 9%)

30. Efficient Graphlet Counting for Large Networks
N. Ahmed, J. Neville, R. Rossi, and N. Duffield.
Proceedings of the 15^{th} *IEEE International Conference on Data Mining* (ICDM), 10 pages, 2015. (Acceptance rate: 8%)

31. Overcoming relational learning biases to accurately predict preferences in large scale networks
J. Pfeiffer III, J. Neville, and P. Bennett
Proceedings of the 24^{th} *International World Wide Web Conference* (WWW), 11 pages, 2015. (Acceptance rate: 14%)

32. Incorporating Assortativity and Degree Dependence into Scalable Network Models
S. Mussmann, J. Moore, J. Pfeiffer III, and J. Neville
Proceedings of the 29^{th} *Conference on Artificial Intelligence* (AAAI), 9 pages, 2015. (Acceptance rate: 12%)

33. Composite Likelihood Data Augmentation for Within-Network Statistical Relational Learning
J. Pfeiffer III, J. Neville, and P. Bennett
Proceedings of the 14^{th} *IEEE International Conference on Data Mining* (ICDM), 10 pages, 2014. (Acceptance rate: 10%)

34. A Scalable Method for Accurate Sampling from Kronecker Models
S. Moreno, J. Pfeiffer III, and J. Neville
Proceedings of the 14^{th} *IEEE International Conference on Data Mining* (ICDM), 10 pages, 2014. (Acceptance rate: 10%)

35. Active Exploration in Networks: Using Probabilistic Relationships for Learning and Inference
J. Pfeiffer III, J. Neville, and P. Bennett
Proceedings of the 23^{rd} *ACM International Conference on Information and Knowledge Management* (CIKM), 10 pages, 2014. (Acceptance rate: 21%)

36. Graph Sample and Hold: A Framework for Big-Graph Analytics
N. Ahmed, N. Duffield, J. Neville, and R. Kompella
Proceedings of the 20^{th} *ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), 10 pages, 2014. (Acceptance rate: 15%)

37. Attributed Graph Models: Modeling network structure with correlated attributes
J. Pfeiffer III, S. Moreno, T. La Fond, J. Neville, and B. Gallagher
Proceedings of the 23^{rd} *International World Wide Web Conference* (WWW), 11 pages, 2014 (Acceptance rate: 13%)

38. Network Hypothesis Testing Using Mixed Kronecker Product Graph Models
S. Moreno and J. Neville
Proceedings of the 13^{th} *IEEE International Conference on Data Mining* (ICDM), 6 pages, 2013. (Acceptance rate: 19%)

39. Learning Mixed Kronecker Product Graph Models with Simulated Method of Moments
S. Moreno, J. Neville and S. Kirshner
Proceedings of the 19^{th} *ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), 9 pages, 2013. (Acceptance rate: 17%)

40. Collective Inference for Network Data with Copula Latent Markov Networks
R. Xiang and J. Neville
Proceedings of the 6^{th} *ACM International Conference on Web Search and Data Mining* (WSDM), 10 pages, 2013. (Acceptance rate: 19%)

41. Modeling Dynamic Behavior in Large Evolving Graphs
R. Rossi, B. Gallagher, J. Neville and K. Henderson
Proceedings of the 6^{th} *ACM International Conference on Web Search and Data Mining* (WSDM), 10 pages, 2013. (Acceptance rate: 19%)

42. An Analysis of How Ensembles of Collective Classifiers Improve Predictions in Graphs
H. Eldardiry and J. Neville
Proceedings of the 21^{st} *ACM International Conference on Information and Knowledge Management* (CIKM), 10 pages, 2012. (Acceptance rate: 13%)

43. Fast Generation of Large Scale Social Networks While Incorporating Transitive Closures
J. Pfeiffer III, T. La Fond, S. Moreno, and J. Neville
Proceedings of the 4^{th} *ASE/IEEE International Conference on Social Computing* (SocialCom), 12 pages, 2012. (Acceptance rate (full paper): 10%)

44. The Impact of Communication Structure and Interpersonal Dependencies on Distributed Teams
T. La Fond, D. Roberts, J. Neville, J. Tyler, and S. Connaughton
Proceedings of the 4^{th} *ASE/IEEE International Conference on Social Computing* (SocialCom), 8 pages, 2012. (Acceptance rate (short paper): 17%)

45. Network Sampling Designs for Relational Classification
N. Ahmed, J. Neville, and R. Kompella
Proceedings of the 6^{th} *International AAAI Conference on Weblogs and Social Media* (ICWSM), 4 pages, 2012. (Acceptance rate (short paper): 26%)

46. Time-Evolving Relational Classification and Ensemble Methods
R. Rossi and J. Neville
Proceedings of the 16^{th} *Pacific-Asia Conference on Knowledge Discovery and Data Mining* (PAKDD), 12 pages, 2012. (Acceptance rate: 36%)

47. Structured Comparative Analysis of Systems Logs to Diagnose Performance Problems
K. Nagaraj, C. Killian, and J. Neville.
Proceedings of the 9^{th} *USENIX Symposium on Networked Systems Design and Implementation* (NSDI), 2012. (Acceptance rate: 18%)

48. Understanding Propagation Error and Its Effect on Collective Classification
R. Xiang and J. Neville
Proceedings of the 11^{th} *IEEE International Conference on Data Mining*, 10 pages, 2011. (Acceptance rate (full paper): 12%)

49. Correcting Bias in Statistical Tests for Network Classifier Evaluation
T. Wang, J. Neville, B. Gallagher, and T. Eliassi-Rad
Proceedings of the 21^{st} *European Conference on Machine Learning*, 16 pages, 2011, (Acceptance rate: 20%)

50. Relational Active Learning for Joint Collective Classification Models
A. Kuwadekar and J. Neville
Proceedings of the 28^{th} *International Conference on Machine Learning*, 8 pages, 2011. (Acceptance rate: 25%)

51. Across-Model Collective Ensemble Classification
H. Eldardiry and J. Neville
Proceedings of the 25^{th} *Conference on Artificial Intelligence*, 7 pages, 2011. (Acceptance rate: 25%)

52. Methods to Determine Node Centrality and Clustering in Graphs with Uncertain Structure
J. Pfeiffer III and J. Neville
Proceedings of the 5^{th} *International AAAI Conference on Weblogs and Social Media*, 4 pages, 2011.

53. Relational Learning with One Network: An Asymptotic Analysis
R. Xiang, J. Neville
Proceedings of the 14^{th} *International Conference on Artificial Intelligence and Statistics (AISTAT)*, 11 pages, 2011. (Oral presentation, acceptance rate: 8%)

54. ERACER: A Database Approach for Statistical Inference and Data Cleaning
C. Mayfield, J. Neville, and S. Prabhakar
Proceedings of the 2010 *ACM SIGMOD Conference*, 12 pages, 2010. (Acceptance rate: 19%)

55. Predicting Prex Availability in the Internet
R. Khosla, S. Fahmy, C. Hu, and J. Neville
Proceedings of the 29^{th} *IEEE Conference on Computer Communications (INFOCOM) Mini-Conference*, 5 pages, 2010. (Acceptance rate: 24%)

56. Randomization tests for distinguishing social influence and homophily effects
T. LaFond and J. Neville
Proceedings of the 19^{th} *International World Wide Web Conference (WWW)*, 10 pages, 2010. (Acceptance rate: 14%)

57. Modeling Relationship Strength in Online Social Networks
R. Xiang, J. Neville, and M. Rogati
Proceedings of the 19^{th} *International World Wide Web Conference (WWW)*, 10 pages, 2010. (Acceptance rate: 14%)

58. Tied Kronecker Product Graph Models to Capture Variance in Network Populations
S. Moreno, S. Kirshner, J. Neville and S.V.N. Vishwanathan
Proceedings of the 48th Annual Allerton Conference on Communications, Control and Computing, 8 pages, 2010.

59. Using Transactional Information to Predict Link Strength in Online Social Networks
I. Kahanda and J. Neville
Proceedings of the the 3^{rd} *Int'l AAAI Conference on Weblogs and Social Media.* 8 pages 2009.

60. Evaluating Statistical Tests for Within-Network Classifiers of Relational Data.
J. Neville, B. Gallagher, and T. Eliassi-Rad. **Best Paper Award Runner-Up**
Proceedings of the 9^{th} *IEEE International Conference on Data Mining*, 10 pages, 2009. (Acceptance rate (full paper): 9%)

61. Temporal-Relational Classifiers for Prediction in Evolving Domains.
U. Sharan and J. Neville
Proceedings of the 8^{th} *IEEE International Conference on Data Mining*, 10 pages, 2008. (Acceptance rate (full paper): 10%)

62. A Shrinkage Approach for Modeling Non-Stationary Relational Autocorrelation.
P. Angin and J. Neville
Proceedings of the 8^{th} *IEEE International Conference on Data Mining*, 6 pages, 2008. (Acceptance rate (short paper): 20%)

63. Pseudolikelihood EM for Within-Network Relational Learning.
R. Xiang and J. Neville
Proceedings of the 8^{th} *IEEE International Conference on Data Mining*, 6 pages, 2008. (Acceptance rate (short paper): 20%)

64. Database support for probabilistic attributes and tuples.
S. Singh, C. Mayfield, R. Shah, S. Prabhakar, S. Hambrusch, J. Neville, R. Cheng.
The 24^{th} *International Conference on Data Engineering*, 9 pages, 2008. (Acceptance rate: 19%)

65. Bias/Variance Analysis for Relational Domains.
J. Neville and D. Jensen.
The 17^{th} International Conference on Inductive Logic Programming, *Lecture Notes in Artificial Intelligence 4894*, pages 27-28, 2007. (Acceptance rate: 34%)

66. Leveraging Relational Autocorrelation with Latent Group Models.
J. Neville and D. Jensen.
Proceedings of the 5^{th} *IEEE International Conference on Data Mining*, pages 322-329, 2005. (Acceptance rate: 11%)

67. Using Relational Knowledge Discovery to Prevent Securities Fraud.
J. Neville, O. Simsek, D. Jensen, J. Komoroske, K. Palmer and H. Goldberg.
Proceedings of the 11^{th} *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, pages 449-458, 2005. (Acceptance rate: 19%)

68. Dependency Networks for Relational Data.
J. Neville and D. Jensen.
Proceedings of the 4^{th} *IEEE International Conference on Data Mining*, pages 170-177, 2004. (Acceptance rate: 9%)

69. Why Collective Inference Improves Relational Classification.
D. Jensen, J. Neville and B. Gallagher.
Proceedings of the 10^{th} *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, pages 593-598, 2004. (Acceptance rate: 25%)

70. Simple Estimators for Relational Bayesian Classifiers.
J. Neville, D. Jensen and B. Gallagher.
Proceedings of the 3^{rd} *IEEE International Conference on Data Mining*, pages 609-612, 2003. (Acceptance rate: 23%)

71. Learning Relational Probability Trees.
J. Neville, D. Jensen, L. Friedland and M. Hay.
Proceedings of the 9^{th} *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, pages 625-630, 2003. (Acceptance rate: 27%)

72. Avoiding Bias When Aggregating Relational Data with Degree Disparity.
D. Jensen, J. Neville and M. Hay.
Proceedings of the 20^{th} *International Conference on Machine Learning*, pages 274-281, 2003. (Acceptance rate: 32%)

73. Autocorrelation and Linkage Cause Bias in Evaluation of Relational Learners.
D. Jensen and J. Neville.
Proceedings of the 12^{th} *International Conference on Inductive Logic Programming*, pages 101-116, 2002. (Acceptance rate: 54%)

74. Linkage and Autocorrelation Cause Feature Selection Bias in Relational Learning.
D. Jensen and J. Neville.
Proceedings of the 19^{th} *International Conference on Machine Learning*, pages 259-266, 2002. (Acceptance rate: 33%)

Referred Workshop Papers

75. Joint Embedding Models for Textual and Social Analysis
C. Li, Y. Lai, D. Goldwasser, and J. Neville
Proceedings of the 1^{st} *Workshop on Deep Structured Prediction*, (ICML), 5 pages, 2017.

76. Stochastic Gradient Descent for Relational Logistic Regression via Partial Network Crawls
J. Yang, B. Ribeiro and J. Neville
Proceedings of the 7^{th} *International Workshop on Statistical Relational AI*, UAI, 7 pages, 2017.

77. Deep Dynamic Relational Classifiers: Exploiting Dynamic Neighborhoods in Complex Networks
H. Park, J. Moore, and J. Neville
Proceedings of the Mining Actionable Insights from Social Networks Workshop, WSDM, 7 pages, 2017.

78. Online Spike-and-slab Inference with Stochastic Expectation Propagation
S. Zhe, K. Lee, K. Zhang, and J. Neville
Proceedings of the 2016 Workshop on Advances in Approximate Bayesian Inference, NIPS, 2016.

79. Generating Local Explanations of Network Anomalies via Score Decomposition
T. La Fond, J. Neville, and B. Gallagher
Proceedings of the ODD 4.0: Outlier Definition, Detection, and Description on Demand, KDD, 6 pages, 2016.

80. Investigating the Impact of Graph Structure and Attribute Correlation on Collective Classification Performance
G. Zeno and J. Neville
Proceedings of the 13^{th} *Workshop on Mining and Learning with Graphs*, KDD, 8 pages, 2016.

81. Combining Gradient Boosting Machines with Collective Inference to Predict Continuous Values
I. Alodah and J. Neville
Proceedings of the 6^{th} *International Workshop on Statistical Relational AI*, IJCAI, 7 pages, 2016.

82. Better Together: Combining Language and Social Interactions into a Shared Representation
Y. Lai, C. Li, D. Goldwasser, and J. Neville
Proceedings of the TextGraphs 2016, (NAACL), 5 pages, 2016.

83. Analyzing the Transferability of Collective Inference Models Across Networks
R. Niu, S. Moreno and J. Neville
Proceedings of the International Workshop on Information Analysis and Data Mining Over Social Network, (ICDM), 9 pages, 2015.

84. Using Bayesian Network Representations for Effective Sampling from Generative Network Models
P. Robles, S. Moreno, and J. Neville
Proceedings of the 5^{th} *International Workshop on Statistical Relational AI, UAI*, 6 pages, 2015.

85. Assortativity in Chung Lu Random Graph Models
S. Mussmann, J. Moore, J. Pfeiffer III, and J. Neville
Proceedings of the 8th SNA-KDD Workshop, KDD, 8 pages, 2014.

86. Anomaly Detection in Networks with Changing Trends
T. La Fond, J. Neville, and B. Gallagher
Proceedings of the Outlier Detection & Description under Data Diversity Workshop, KDD, 10 pages, 2014.

87. Block Kronecker Product Graph Models
S. Moreno, P. Robles, and J. Neville
Proceedings of the 11^{th} *Workshop on Mining and Learning with Graphs, KDD*, 6 pages, 2013.

88. Combining Active Sampling with Parameter Estimation and Prediction in Single Networks
J. Pfeiffer III, J. Neville, and P. Bennett
Proceedings of the Structured Learning: Inferring Graphs from Structured and Unstructured Inputs Workshop, ICML, 6 pages, 2013.

89. Space-Efficient Sampling from Social Activity Streams
N. Ahmed, J. Neville, and R. Kompella
Space-Efficient Sampling from Social Activity Streams. *Proceedings of the* 1^{st} *International Workshop on Big Data, Streams and Heterogeneous Source Mining, KDD*, 8 pages, 2012.

90. Using Latent Communication Styles to Predict Individual Characteristics
J. Bates, J. Neville, and J. Tyler
Proceedings of the 3^{rd} *Workshop on Social Media Analytics, KDD*, 8 pages, 2012.

91. Active Sampling of Networks
J. Pfeiffer III, J. Neville, and P. Bennett
Proceedings of the 10^{th} *Workshop on Mining and Learning with Graphs, ICML*, 8 pages, 2012.

92. On the Mismatch Between Learning and Inference for Single Network Domains
R. Xiang and J. Neville
Proceedings of the *Workshop on Inferning: Interactions between Inference and Learning, ICML*, 6 pages, 2012.

93. Role-Dynamics: Fast Mining of Large Dynamic Networks
R. Rossi, Brian Gallagher, J. Neville, and Keith Henderson
Proceedings of the 1^{st} *International Workshop on Large Scale Network Analysis, WWW*, 9 pages, 2012.

94. Understanding Propagation Error and Its Effect on Collective Classification
R. Xiang and J. Neville
Proceedings of the 9th Workshop on Mining and Learning with Graphs, KDD, 8 pages, 2011.

95. Modeling the Variance of Network Populations with Mixed Kronecker Product Graph Models
S. Moreno and J. Neville and S. Kirshner and S.V.N. Vishwanathan. **Most Promising Paper Award**
Proceedings of the Workshop on Analyzing Networks and Learning with Graphs, NIPS, 8 pages, 2010.

96. Reconsidering the Foundations of Network Sampling
N. Ahmed, J. Neville, and R. Kompella
Proceedings of the 2nd Workshop on Information in Networks, 5 pages, 2010.

97. Time-Based Sampling of Social Network Activity Graphs
N. Ahmed, F. Berchmans, J. Neville, and R. Kompella
Proceedings of the 8th Workshop on Mining and Learning with Graphs, KDD, 8 pages, 2010.

98. Multi-Network Fusion for Collective Inference
H. Eldardiry and J. Neville
Proceedings of the 8th Workshop on Mining and Learning with Graphs, KDD, 8 pages, 2010.

99. Probabilistic Paths and Centrality in Time
J. Pfeiffer III and J. Neville
Proceedings of the 4th SNA-KDD Workshop, KDD, 8 pages, 2010.

100. Combining Semi-supervised Learning and Relational Resampling for Active Learning in Network Domains
A. Kuwadekar and J. Neville. **Best Paper Award**
Proceedings of the Budgeted Learning Workshop, ICML, 8 pages, 2010.

101. Modeling the Evolution of Discussion Topics and Communication to Improve Relational Classification
R. Rossi and J. Neville
Proceedings of the 1st Workshop on Social Media Analytics, KDD, 8 pages, 2010.

102. GDR: A System for Guided Data Repair
M. Yakout, A. Elmagarmid, J. Neville, M. Ouzzani
Demonstration in the 2010 *ACM SIGMOD Conference* (SIGMOD), 3 pages, 2010.

103. Ranking for Data Repairs
M. Yakout, A. Elmagarmid, and J. Neville
Proceedings of the 4^{th} *International Workshop on Ranking in Databases, ICDE*, 6 pages, 2010.

104. Modeling Relationship Strength in Online Social Networks.
R. Xiang and J. Neville
Proceedings of the Workshop on Analyzing Networks and Learning with Graphs, NIPS, 8 pages, 2009.

105. An Investigation of the Distributional Characteristics of Generative Graph Models.
S. Moreno and J. Neville.
Proceedings of the the 1^{st} *Workshop on Information in Networks*, 5 pages, 2009.

106. A Shrinkage Approach for Modeling Non-Stationary Relational Autocorrelation.
P. Angin and J. Neville.
Proceedings of the 2^{nd} *Social Network Analysis Workshop, KDD*, 6 pages, 2008.

107. A Resampling Technique for Relational Data Graphs.
H. Eldardiry and J. Neville.
Proceedings of the 2^{nd} *Social Network Analysis Workshop, KDD*, 6 pages, 2008.

108. Pseudolikelihood EM for Within-Network Relational Learning.
R. Xiang and J. Neville
Proceedings of the 2^{nd} *Social Network Analysis Workshop, KDD*, 8 pages, 2008.

109. Exploiting Time-Varying Relationships in Statistical Relational Models.
U. Sharan and J. Neville.
Proceedings of the 1^{st} *Social Network Analysis KDD Workshop, KDD*, 7 pages, 2007.

110. Bias/Variance Analysis for Network Data.
J. Neville and D. Jensen.
Proceedings of the Workshop on Statistical Relational Learning, ICML, 8 pages, 2006.

111. Structure Learning for Statistical Relational Models.
J. Neville.
Proceedings of the 20^{th} *National Conference on Artificial Intelligence (Doctoral Consortium)*, pages 1656-1657, 2005.

112. Autocorrelation and Relational Learning: Challenges and Opportunities.
J. Neville, O. Simsek and D. Jensen.
Proceedings of the Workshop on Statistical Relational Learning, ICML, 8 pages, 2004.

113. Collective Classification with Relational Dependency Networks. J. Neville and D. Jensen.
Proceedings of the 2^{nd} *Multi-Relational Data Mining Workshop, KDD*, pages 77-91, 2003.

114. Statistical Relational Learning: Four Claims and a Survey.
J. Neville, M. Rattigan and D. Jensen.
Proceedings of the Workshop on Learning Statistical Models from Relational Data, IJCAI, 5 pages, 2003.

115. Clustering Relational Data Using Attribute and Link Information.
J. Neville, M. Adler and D. Jensen.
Proceedings of the Text Mining and Link Analysis Workshop, IJCAI, 6 pages, 2003.

116. Schemas and Models.
D. Jensen and J. Neville.
Proceedings of the Multi-Relational Data Mining Workshop, KDD, 15 pages, 2002.

117. Supporting Relational Knowledge Discovery: Lessons in Architecture and Algorithm Design.
J. Neville and D. Jensen.
Proceedings of the Data Mining Lessons Learned Workshop, ICML, pages 57-64, 2002.

118. Correlation and Sampling in Relational Data Mining.
D. Jensen and J. Neville.
Proceedings of the 33^{rd} Symposium on the Interface of Computing Science and Statistics, 14 pages, 2001.

119. Iterative Classification in Relational Data.
J. Neville and D. Jensen.
Proceedings of the Workshop on Learning Statistical Models from Relational Data, AAAI, pages 42-49, 2000.

Book Chapters

120. Relational Dependency Networks.
J. Neville and D. Jensen.
Introduction to Statistical Relational Learning, L. Getoor and B. Taskar, editors, pages 239-268, 2007.

Invited Papers

121. Data Mining in Social Networks.
D. Jensen and J. Neville.
National Academy of Sciences Symposium on Dynamic Social Network Analysis, 13 pages, 2002.

Technical Reports

122. Identifying User Survival Types via Clustering of Censored Social Network Data.
C. Mouli, A. Naik, B. Ribeiro, and J. Neville.
ArXiv e-prints, 1703.03401, 2017.

123. Learning the Latent State Space of Time-Varying Graphs.
N. Ahmed, C. Cole, and J. Neville.
ArXiv e-prints, 1403.3707, 2014.

124. Network Sampling via Edge-based Node Selection with Graph Induction.
N. Ahmed, J. Neville, R. Kompella.
Purdue University, CSD TR 11-0016, 2011.

125. Spectral Clustering with Links and Attributes.
J. Neville, M. Adler and D. Jensen.
University of Massachusetts Amherst, Technical Report 04-42, 2004.

126. Randomization Tests for Relational Learning.
D. Jensen, J. Neville and M. Rattigan.
University of Massachusetts Amherst, Technical Report 03-05, 2003.

Invited Presentations

Analyzing Behavioral Traces to Improve Student Outcomes (**invited speaker**), Microsoft Faculty Summit, Microsoft Research, Bellevue, Washington, 2019.

Towards Relational AI: The good, the bad, and the ugly of learning over networks (**invited keynote**), IEEE Data Science Workshop, Minneapolis, Minnesota, 2019.

Towards Relational AI: The good, the bad, and the ugly of learning over networks (**invited keynote**), MLSE Data Science Forum, Georgia Tech Institute for Data Engineering and Science, 2019.

Deep Learning for Relational Networks (**invited keynote**), IUPUI Data Science Summit, IUPUI, Indianapolis, Indiana, 2019.

Towards Relational AI: The good, the bad, and the ugly of learning over networks (**invited keynote**), Pacific-Asia Conference on Knowledge Discovery and Data Mining, Macau, China, 2019.

Towards Relational AI: The good, the bad, and the ugly of learning over networks (**distinguished lecture**), Virginia Tech University, Computer Science Department, 2019.

Essential machine learning hacks that everyone should know about (**invited keynote**), *Women in Data Science*, Purdue, West Lafayette, Indiana, 2019.

Statistical methods for prediction and anomaly detection in dynamic networks, *Microsoft Research*, Redmond, WA, 2018.

Deep Learning for Relational Networks (**invited keynote**), 5^{th} *International Workshop on High Performance Big Graph Data Management, Analysis, and Mining*, IEEE BigData 2018.

Deep Learning for Relational Networks (**invited speaker**), Purdue Workshop on Deep Learning, West Lafayette, Indiana, 2018.

Machine learning for network data (**invited panelist**), 4^{th} *Annual Financial Stability Conference*, Department of the Treasury, Washington DC, 2018.

Using machine learning to exploit complex data in biomedical domains (**invited keynote**), Keck Annual Conference, Houston, TX, 2018.

Mining social network interactions to understand and predict user behavior (**invited speaker**), 6^{th} *Purdue Symposium on Psychological Sciences*–Big Data for Psychological Sciences, West Lafayette, Indiana, 2018.

Network Machine Learning (**invited speaker**), *Women in Data Science*, Purdue, West Lafayette, Indiana, 2018.

Learning from single networks—the impact of network structure on relational learning (**invited keynote**), 27^{th} *International Conference on Inductive Logic Programming*, France, 2017.

Learning in networks: How to exploit relationships to improve predictions (**invited keynote**), 3^{rd} *ACM International Conference on the Theory of Information Retrieval*, Netherlands, 2017.

The impact of network structure on relational machine learning (**invited keynote**), 6^{th} *International Conference on Complex Networks and Their Applications*, France, 2017.

Learning in networks: How to exploit relationships to improve predictions, *Ecole Polytechnique Federale de Lausanne* (EPFL), Computer Science Department, 2017.

Exploiting User Relationships to Accurately Predict Preferences in Large Scale Networks (**invited speaker**), *First Data Institute Conference*, San Francisco, CA, 2017.

Semi-supervised learning for node classification in networks (**invited speaker**), *Workshop on Machine Learning in Network Science*, NetSci, Indianapolis, IN, 2017.

Lifted and Constrained Sampling of Attributed Graphs with Generative Network Models (**invited speaker**), *Workshop on Statistical Inference of Network Models*, NetSci, Indianapolis, IN, 2017.

Learning in networks: How to exploit relationships to improve predictions (**invited speaker**), *Workshop on Diversity in AI*, AAAI, San Francisco, CA, 2017.

AI-Easy vs AI-Hard (**invited speaker**), Dawn or Doom Syposium, Purdue University, West Lafayette, IN, 2016.

Statistical methods for modeling network distributions (**invited keynote talk**), *Workshop on Mining and Learning from Graphs*, KDD, San Francisco, CA, 2016.

Statistical methods for modeling network distributions, *MIT Lincoln Laboratory*, Boston, MA, 2016.

AI-Easy vs AI-Hard: Machine learning and its impact on the development of AI systems (**invited speaker**), Purdue Student Pugwash Midwest Regional Conference, West Lafayette, IN, 2016.

Network machine learning: How to exploit relationships to improve node-level predictions (**invited speaker**), Institute of Science and Technology Austria, Young Scientist Symposium, Klosterneuburg, Austria, 2016.

Statistical methods for modeling network distributions (**invited speaker**), Mathematical Biosciences Institute Workshop on Generalized Network Structures and Dynamics, Columbus, Ohio, 2016.

Learning in networks: How to exploit relationships to improve predictions (**distinguished lecture**), Max Planck Institute for Informatics, Saarbrucken, Germany, 2016.

Exploiting User Relationships to Accurately Predict Preferences in Large Scale Networks (**invited speaker**), Netflix Workshop on Personalization, Recommendations, and Search, Los Gatos, CA, 2016.

Learning How to Transfer Collective Classification Models Across Networks (**invited speaker**), Santa Fe Institute Workshop: Inference on Networks, Santa Fe, New Mexico, 2015.

Collective Classification in Large-Scale Networks (**invited tutorial**), *Data Science and Advanced Analytics* (DSAA-15), Paris, France, 2015.

Sampling Attributed Networks From Generative Graph Models (**invited speaker**) Workshop on Information in Networks (WIN), New York, NY, 2015.

Network machine learning: How to use friends to your advantage algorithmically, 2^{nd} European Network Intelligence Conference (**invited keynote**), Karlskrona, Sweden, 2016.

Machine learning methods for accurate estimation and prediction in partially-labeled complex networks, Skytree, San Jose, CA, 2015.

Network Sampling: Methods and Applications (**tutorial**), with Mohammad Al Hasan and Nesreen Ahmed, *SIAM International Conference on Data Mining* (SDM-15), Vancouver, Canada, 2015.

An introduction to big data: Opportunities for CS/AG collaborations, Purdue Big Data in Agriculture Seminar Series, West Lafayette, IN, 2015.

Predicting user behavior in networks: The impact of structure on machine learning methods, Indiana University, Bloomington, IN, 2014.

Predicting user behavior in networks: The impact of structure on machine learning methods. Data, Society, and Inference Seminar, *Stanford University*, Palo Alto, CA, 2014.

Predictive modeling for online social networks: Machine learning methods for networks (**invited speaker**), Westwood Colloquium , Purdue University, , West Lafayette, IN, 2014.

Are we too smart for our own good? How large-scale machine learning systems can vastly exceed human level decision-making abilities (**invited speaker**), Dawn or Doom: The New Technology Explosion, Purdue University, West Lafayette, IN, 2014.

How to Exploit Network Properties to Improve Learning in Relational Domains, IBM Thomas J Watson Research Center, Yorktown Heights, NY, 2014.

Prediction in complex networks: The impact of structure on learning and inference (**invited keynote**), 27th International Conference of the Florida Artificial Intelligence Research Society, Pensacola, FL, 2014.

How to learn from a single network to support classification and hypothesis testing in graphs, iCeNSA Seminar, *Notre Dame*, Notre Dame, IN, 2014.

Strengthening Computer Science, with Sunil Prabhakar,
Purdue President's Council, Mollenkopf/Keyes Weekend, Naples, FL, 2014.

Network Sampling: Methods and Applications (**tutorial**), with Mohammad Al Hasan and Nesreen Ahmed,
International Conference on Data Mining (ICDM-13), Dallas, TX, 2013.

Prediction in complex networks: The impact of structure on learning and inference (**invited keynote**),
Women in Machine Learning Workshop, NIPS 2013, Lake Tahoe, CA, 2013.

Supporting hypothesis testing over graphs (**invited speaker**),
Workshop on the Frontiers of network analysis: Methods, models, and applications, NIPS 2013, Lake Tahoe, CA, 2013.

Prediction in complex networks: The impact of structure on learning and inference,
RAIN Seminar, *Stanford University*, Stanford, CA, 2013.

The impact of network structure on relational learning and inference,
Simons Institute, *University California Berkeley*, Berkeley, CA, 2013.

Purdue Moves: Growth in Computer Science, with Sunil Prabhakar,
President's Forum, Purdue University, November 2013.

How to learn from a single network to support classification and hypothesis testing in graphs,
SRI International, Menlo Park, CA, 2013.

How to learn from a single network to support classification and hypothesis testing in graphs,
Facebook, Menlo Park, CA, 2013.

Prediction in complex networks: The impact of structure on learning and inference,
PARC, Palo Alto, CA, 2013.

Prediction in complex networks: The impact of structure on learning and inference,
Neyman Seminar, *University of California Berkeley*, Berkeley, CA, 2013.

Machine learning methods for diagnosis, maintenance, and repair of data,
AMP Lab, *University California Berkeley*, Berkeley, CA, 2013.

Prediction in complex networks: The impact of structure on learning and inference,
Google, Mountain View, CA, 2013.

How to learn from a single network to support classification and hypothesis testing in graphs,
Sandia National Laboratory, Livermore, CA, 2013.

Network Sampling: Methods and Applications (**tutorial**), with Mohammad Al Hasan and Nesreen Ahmed,
International Conference on Knowledge Discovery and Data Mining (KDD-13), Chicago, IL, 2013.

Supporting Statistical Hypothesis Testing over Graphs, (**invited session**)
Statistical Inference for Networks, *2013 Joint Statistical Meetings* (JSM), Montreal, QC, Canada, 2013.

Supporting Statistical Hypothesis Testing over Graphs, (**invited speaker**)
International Conference on Network Science (NetSci), Copenhagen, Denmark, 2013.

Mining Social Network Activity to Understand and Predict User Behavior,
Smith College, Northampton, MA, 2013.

Prediction in complex networks: The impact of structure on learning and inference, (**invited speaker**)
Graph Exploitation Symposium, MIT Lincoln Laboratory, MA, 2013.

Prediction in complex networks: The impact of structure on learning and inference,
Statistics Department Colloquia, *Carnegie Melon University*, Pittsburgh, PA, 2013.

Active Exploration in Networks,
CSoI Big Data Workshop, Honolulu, HI, 2013.

Prediction in complex networks: The impact of structure on learning and inference,
Computer Science Colloquia, *University of Alberta*, Edmonton, AB, Canada, 2013.

Prediction in complex networks: The impact of structure on learning and inference,
Microsoft Research, Redmond, WA, 2012.

How to learn from a single network: Statistical relational learning for social network domains,
Computer Science Colloquia, *University of Maryland College Park*, College Park, MD, 2012.

Measurement and methodology for mining mobile, cloud-based, social systems, (**invited speaker**)
NSF Workshop on Social Networks and Mobility in the Cloud, Arlington, VA, 2012.

Prediction in complex networks: The impact of structure on learning and inference,
Computer Science Colloquia, *Ohio State University*, Columbus, OH, 2012.

How to learn from a single network: Statistical relational learning for social network domains,
Statistics Colloquia, *Columbia University*, New York, NY, 2012.

Prediction in complex networks: The impact of structure on learning and inference, (**invited speaker**)
Workshop on Information in Networks (WIN), New York, NY, 2012.

Mining Social Network Activity to Understand and Predict User Behavior (**invited speaker**),
Data Sciences Summer Institute, University of Illinois Urbana-Champaign, Urbana, IL, 2012.

How to learn from a single network: Relational learning for social networks, (**invited speaker**)
Workshop on Machine Learning: Theory and Computation, *Institute for Mathematics and Its Applications* (IMA), Minnesota, MN, 2012.

Supporting Statistical Hypothesis Testing Over Graphs, (**invited speaker**)
Workshop on Network Links: Connecting Social, Communication & Biological Network Analysis, *Institute for Mathematics and Its Applications* (IMA), Minnesota, MN, 2012.

How to learn from a single network: Statistical relational learning for social network domains,
Computer Science Colloquia, *Duke University*, Durham, NC, 2011.

How to learn from one sample? Statistical relational learning for single network domains,
AI Seminar, *University of Texas Austin*, Austin, TX, 2011.

Modeling online social networks to understand and predict user behavior,
IROM Seminar, *McCombs School of Business*, Austin, TX, 2011.

Understanding the Effects of Collective Classification on Learning and Inference (**invited keynote talk**),
Workshop on Collective Learning and Inference for Structured Data, ECML, Athens, Greece, 2011.

Mining Social Network Activity to Understand and Predict User Behavior (**invited keynote talk**),
Workshop on Enriching Information Retrieval, SIGIR, Beijing, China, 2011.

Modeling Complex Social Networks: Challenges and Opportunities for Statistical Learning and Inference,
(**invited speaker**), *Machine Learning Summer School*, Purdue, West Lafayette, IN, 2011.

Modeling Complex Social Networks: Challenges and Opportunities for Statistical Learning and Inference,
(**invited speaker**), *Science of Information Summer School*, Purdue, West Lafayette, IN, 2011.

Statistical Relational Learning in Single Network Domains,
PRiML Seminar, *University of Pennsylvania*, Philadelphia, PA, 2011.

Modeling and Mining Social Networks,
Fantastic Lectures in Computer Science Series, *Bryn Mawr College*, Bryn Mawr, PA, 2011.

Hypothesis testing methods for social network mining,
AI Seminar, *Information Sciences Institute*, Marina Del Ray, CA, 2010.

Hypothesis testing methods for social network mining,
Neyman Seminar, *University of California Berkeley*, Berkeley, CA, 2010.

Hypothesis testing methods for social network mining,
IS Research Seminar, *New York University Stern School of Business*, New York, NY, 2010.

Capturing the Natural Variability of Real Networks with Kronecker Product Graph Models,
Sandia National Laboratory, Livermore, CA, 2010.

Evaluation Strategies for Network Classification Models (**invited keynote talk**),
Workshop on Mining and Learning from Graphs, KDD, Washington, DC, 2010.

Evaluation Strategies for Network Classification Models,
University of Maryland College Park, College Park, MD, 2010.

Modeling Relationship Strength in Online Social Networks,
IUPUI, Indianapolis, IN, 2010.

Modeling Relationship Strength in Online Social Networks,
DAIS Seminar, *University of Illinois Urbana-Champaign*, Urbana, IL, 2010.

Predictive Modeling with Social Networks (**invited tutorial**), with Foster Provost,
International Conference on Weblogs and Social Media (ICWSM-09), San Jose, CA, 2009.

Social Network Mining (tutorial), with Foster Provost,
International Conference on Knowledge Discovery and Data Mining (KDD-08), Henderson, NV, 2008.

Social Network Mining (**invited tutorial**), with Foster Provost,
National Conference on Artificial Intelligence (AAAI-08), Chicago, IL, 2008.

Exploiting Temporal Variations in Relational Domains,
Lawrence Livermore National Laboratory, Livermore, CA, 2008.

Exploiting Temporal Variations in Relational Domains,
University of Maryland College Park, College Park, MD, 2008.

Statistical Models for Learning and Inference in Complex Relational Domains.
National Security Agency, Fort Meade, MD, 2007.

Leveraging Autocorrelation with Latent Group Models.
Auton Lab, School of Computer Science, *Carnegie Mellon University*, Pittsburgh, PA, 2005.

Leveraging Autocorrelation with Latent Group Models.
Dagstuhl Seminar on Probabilistic, Logical and Relational Learning: Towards a Synthesis. *Schloss Dagstuhl*, Wadern, Germany, 2005.

Knowledge Discovery with Relational Dependency Networks.
Weekly Computer Science Colloquium, *Williams College*, Williamstown, MA, 2004.

Dependency Networks for Relational Data.
The Boeing Company, Phantom Works, Mathematics & Computing Technology Unit, Seattle, WA, 2004.

Collective Classification with Relational Dependency Networks *(poster)*.
DARPA IPTO Cognitive Systems Conference, Washington, DC, 2003.

Knowledge Discovery in Networks.
Talent Advancement Program Seminar, Computer Science Department, University of Massachusetts, Amherst, MA, 2003.

Clustering Relational Data *(poster)*.
Grace Hopper Celebration of Women in Computing, Vancouver, BC, 2002.

Data Mining in Networks.
International Sunbelt Social Network Conference XXII, New Orleans, LA, 2002.

Sponsored Research[1]

Learning from Theorem Proving Search via Graph Representations

NSF/CISE/FMitF, co-Primary Investigator
$250,000 (33% of total), 08/01/19 - 07/31/22

I^2DS: Intelligent Interaction Defense System

DARPA/I2O, Primary Investigator
$744,302 (33% of total), 09/01/18 - 08/31/22

Robust Machine Learning

Integrative Data Science Institute Purdue, Primary Investigator
$264,989 (100% of total), 06/01/18 - 05/31/20

Transfer Learning Within & Across Networks for Collective Classification

NSF/CISE/IIS, Primary Investigator
$495,308 (100% of total), 07/01/16 - 06/30/19

Models, Algorithms, and Software for Spatial-Relational Networks

NSF/CISE/IIS, co-Primary Investigator
$300,000 (33% of total), 09/01/15 - 08/31/19

Frontiers of Science of Information

NSF/Science & Technology Center, Senior Personnel
approx. $200,000 (0.8% of total), 08/01/15 - 07/31/20

A Heterogeneous Inference Framework for 3D Modeling and Rendering of Sites

NSF/CISE/CVG, co-Primary Investigator
$297,782 (50% of total), 07/01/13 - 06/30/16

Parametric Statistical Models to Support Statistical Hypothesis Testing over Graphs

NSF/CISE/IIS, co-Primary Investigator
$245,920 (25% of total), 09/01/12 - 08/31/15

Career: Machine Learning Methods and Statistical Analysis Tools for Single Network Domains

NSF/CISE/IIS, Primary Investigator
Amount: $496,638 (100% of total), 01/01/12 - 12/31/16

Toward Intrusion Tolerant Clouds

DARPA/I2O, co-Primary Investigator (subcontract from Johns Hopkins)
$367,028 (9% of total), 11/01/11 - 10/31/15

Modeling Tools to Support Advanced Analysis of Multi-Source Network Data

[1]Reported amounts reflect Neville's share of multi-PI grants.

IARPA/KDD, co-Primary Investigator (subcontract from SAIC)
$563,950 (5% of total), 11/01/10 - 01/31/15

Sampling and Modeling Dynamic Streaming Networks

CISCO, co-Primary Investigator
$102,076 (50% of total), 02/07/11 - 02/07/99

Towards Better Modeling of Communication Activity Dynamics in Large-Scale Online Social Networks

NSF/CISE/NETSE, Primary Investigator
$248,226 (50% of total), 09/01/10 - 08/31/13

Emerging Frontiers of Science of Information

NSF/Science & Technology Center, Senior Personnel
approx. $200,000 (0.8% of total), 08/01/10 - 07/31/15

Algorithms for Sampling Similar Graphs Using Subgraph Signatures

NSF/CISE/IIS, co-Primary Investigator
$164,846 (33% of total), 09/01/09 - 08/31/11

Machine Learning Techniques to Model the Impact of Relational Communication on Distributed Team Effectiveness

NSF/SES/IOS, Primary Investigator
$205,311 (50% of total), 09/01/08 - 08/31/11

MAASCOM: Modeling, Analysis, and Algorithms for Stochastic Control of Multi-Scale Networks

ARO/MURI, co-Primary Investigator (subcontract from Ohio State)
$250,000 (5% of total), 5/29/08–10/28/08

Fusion and Analysis of Multi-Source Relational Data

DARPA/ISO, Primary Investigator
$499,877 (100% of total), 06/23/08–06/22/10

Learning Compositional Simulation Models

IARPA/Proactive Intelligence, co-Primary Investigator (subcontract from UMass)
$122,217 (33% of total), 04/01/07–02/09/09

Mining Transaction Streams to Infer Semantic Relations

Microsoft, Primary Investigator
$50,000 (100% of total), 06/01/07–06/01/99

Statistical Models and Algorithms to Improve Decision-Making in Relational Domains

DARPA/ISO, Primary Investigator
$100,000 (100% of total), 04/01/07–12/31/07

Service

Program committee chair

SIAM International Conference on Data Mining (SDM): 2019

ACM International Conference on Web Search and Data Mining (WSDM): 2016

Associate chair

Neural Information Processing Systems (NIPS), 2017-2019

International Joint Conference on Artificial Intelligence (IJCAI), Machine Learning Track: 2015, 2018

National Conference on Artificial Intelligence (AAAI), Machine Learning Track: 2013, 2019

Area chair

ACM International Conference on Knowledge Discovery and Data Mining (KDD): 2016-2019

ACM International Conference on on Web Search and Data Mining (WSDM): 2013, 2014, 2017

International Conference on Machine Learning (ICML): 2011, 2015, 2018-2019

International Conference on Uncertainty in Artificial Intelligence (UAI): 2019

International Joint Conference on Artificial Intelligence (IJCAI), 2016, 2017

National Conference on Artificial Intelligence (AAAI): 2014

Neural Information Processing Systems (NIPS): 2014

IEEE International Conference on Data Mining (ICDM): 2014, 2015

SIAM conference on Data Mining (SDM): 2013, 2014

Program committees

ACM International Conference on Knowledge Discovery and Data Mining (KDD): 2008-2012, 2014

European Conference on Machine Learning (ECML/PKDD): 2007, 2008, 2012

IEEE International Conference on Data Mining (ICDM): 2007, 2009-2012

International Conference on Artificial Intelligence and Statistics (AISTATS): 2009, 2011

International Conference on Inductive Logic Programming (ILP): 2007

International Conference on Machine Learning (ICML): 2006, 2008-2012

International Joint Conference on Artificial Intelligence (IJCAI): 2009

International World Wide Web Conference (WWW): 2011

National Conference on Artificial Intelligence (AAAI): 2006-2008, 2012

Neural Information Processing Systems (NIPS): 2012

SIAM Conference on Data Mining (SDM), 2006

Journal editorial boards

Journal of Artificial Intelligence Research, 2010-2013

Machine Learning Journal, 2011-present

Data Mining and Knowledge Discovery, 2014-present

Journal reviewing

Journal of Machine Learning Research

Machine Learning Journal

Transactions on Knowledge Discovery

Data Mining and Knowledge Discovery Journal

Proposal reviewing

NSF Expeditions Blue Ribbon Panel, 2015

NSF Information & Intelligent Systems Panel, 2005, 2008, 2010-2016

NSF Information & Intelligent Systems CAREER Panel, 2012, 2016

NASA Earth Science Technology Office Proposals, 2005

Conference/workshop organization

Workshop Co-chair:

Relational Representation Learning Workshop, NeurIPS: 2018

NII Shonan Meeting Seminar 113, Meta-Programming for Statistical Machine Learning: 2018
13^{th} Workshop on Mining and Learning with Graphs (MLG): 2017
Unifying Theory and Experiment for Large-Scale Networks, Simons Institute, UC Berkeley: 2014
4^{th} ACM SIGSPATIAL International Workshop on Location-Based Social Networks (LBSN): 2012
Statistical Issues with Modeling of Networks, 8th Int'l Purdue Symposium on Statistics: 2012
9^{th} Workshop on Mining and Learning with Graphs (MLG): 2011
Machine Learning Summer School, Purdue: 2011

Award Committee:

Doctoral Dissertation Award: Association for Computing Machinery (ACM): 2019
Best Papers, ACM Int'l Conf on Knowledge Discovery and Data Mining (KDD): 2015, 2019
Test-of-Time Papers, ACM Int'l Conf on Knowledge Discovery and Data Mining (KDD): 2018
Best Papers (Chair), ACM Int'l Conf on Knowledge Discovery and Data Mining (KDD): 2017
Dissertation Award: ACM Int'l Conf on Knowledge Discovery and Data Mining (KDD): 2011-2013

Diversity events:

Women in KDD Panel, ACM International Conference on Knowledge Discovery and Data Mining (KDD): 2017-2018
Working Group on Gender Diversity, ACM International Conference on Web Search and Data Mining (WSDM): 2013
Women in AI, International Conference on Artificial Intelligence (AAAI): 2016-2017, 2019

Tutorial Chair:

ACM International Conference on Knowledge Discovery and Data Mining (KDD): 2012, 2015
International Conference on Machine Learning (ICML): 2009, 2015

Panelist:

White House Office of Science and Technology Policy, Workshop on AI and Social Good, 2016

Treasurer:

International Machine Learning Society (IMLS): 2009-2013

Outreach

Session organizer: Fairness and Bias in Machine Learning, SciFoo'18, Google, 2018.

A few things about machine learning, Anvil Software Stir lecture, West Lafayette, Indiana, 2017.

Machine Learning Over Social Networks, Iridescent Learning, Ask the Experts Lecture and Interview, 2017.
`https://www.youtube.com/watch?v=UOvtr6LOrzU&t=78s`
`https://www.youtube.com/watch?v=iKUXaagu0-I&t=45s`

AI-easy vs. AI-hard?, Purdue Dawn or Doom Symposium, 2016.
`https://www.c-span.org/video/?415869-2/jennifer-neville-discusses-artificial-intelligence`

Machine learning and its impact on the development of AI systems, Purdue Student Pugwash Midwest Regional Conference, 2016.

Panelist: Techpoint Indianapolis, Dawn or Doom Panel, 2015.

An introduction to big data: Opportunities for CS/AG collaborations, Purdue Big Data in Agriculture Seminar, 2015.

Are we too smart for our own good?, Purdue Dawn or Doom Symposium, 2014.
`https://www.youtube.com/watch?v=GpltbAljmbg`

Strengthening Computer Science, with Sunil Prabhakar, *Purdue President's Council*, Naples, FL, 2014.

Professional societies

Association for the Advancement of Artificial Intelligence (AAAI)

Association for Computing Machinery (ACM)

ACM Special Interest Group on Knowledge Discovery and Data Mining (SIGKDD)

Institute of Electrical and Electronics Engineers (IEEE)

International Machine Learning Society (IMLS)

Sigma Xi

Teaching/Students

Course Development

Development of graduate data mining course, with Chris Clifton (2007)

Development of undergraduate artificial intelligence course (2008)

Development of joint MS program for CS/Stat, with Sergey Kirshner (2009-10)

Development of undergrad machine learning course for Machine Intelligence track (2011)

Development of undergrad major in Data Science, with Susanne Hambrusch (2016-2018)

Teaching

Introduction to Data Science, Undergraduate Course, DS — Spring 2018, Fall 2018

Data Engineering I, Graduate Module, DS — Spring 2019

Foundations of Decision Making, Graduate Module, DS — Spring 2019

Web Information Search and Management, Undergraduate Course, CS — Fall 2016

Data Mining and Machine Learning, Undergraduate Course, CS — Spring 2012, 2013, 2014, Fall 2015

Data Structures and Algorithms, Undergraduate Course, CS — Spring 2011

Data Mining, Graduate Course, CS/STAT (cross-listed) — Fall 2010, Spring 2009, Fall 2007, Fall 2012, Spring 2015, Spring 2017

Artificial Intelligence, Undergraduate Course, CS — Fall 2008, Fall 2019

Statistical Network Analysis, Graduate Seminar, STAT/CS (cross-listed) — Spring 2008, Spring 2010, Spring 2016

Introduction to Statistical Relational Learning, Graduate Seminar, CS — Spring 2007

Current Graduate Students

Ahmed Elbagoury (CS), Pre-quals

Mahak Goindani (CS), Post-quals

Guilherme Gomes (Statistics), Post-quals

Mengyue Hang (CS), Post-quals

Yi-Yu (Ellen) Lai (CS), Passed prelim

Ying-Chun (Jean) Lin (CS), Pre-quals

Changping (Jason) Meng (CS), Passed prelim

Hogun Park (CS), Passed prelim

Giselle Zeno (CS), Post-quals

Current Undergraduate Students

Aditya Naik

Zach Birenbaum

Graduated Students

Jiasen Yang
Degree: PhD, June 2019
Thesis: Statistical Learning and Model Criticism for Networks and Point Processes
Current location: Two Sigma

Xi Tan
Degree: PhD, May 2018
Thesis: Bayesian Nonparamterics to Model Content, User, and Latent Structure in Hawkes Processes
Current location: Quantitative Associate, Goldman Sachs

Caleb Belth
Degree: BSc, May 2018
Research project: Embedding influence graphs
Current location: PhD Program, CS, University of Michigan

Shandian Zhe
Degree: PhD, Nov 2017
Thesis: Scalable Bayesian Nonparametrics and Sparse Learning for Hidden Relationships Discovery
Current location: Assistant Professor, University of Utah, Computer Science Dept

Pablo Robles Granda
Degree: PhD, Oct 2017
Thesis: Generating Attribute Networks: Modeling, Learning, and Sampling
Current location: Research Assistant Professor, Notre Dame University, Computer Science Dept

Gouthami Kamalnath
Degree: BSc, May 2017
Current location: Software Engineer, Microsoft

Shubhika Barjatya
Degree: BSc (Statistics), May 2017
Current location: Data Scientist, Wayfair

Benjamin Staiger
Degree: BSc, May 2017
Research project: Classifying Relationships Based on Time Series Data
Current location: Software Engineer, Citadel

Sait Celebi
Degree: MSc, May 2017
Current location: Software Engineer, Google

Iman Alodah
Degree: MSc, Dec 2016
Research project: Boosting for Collective Regression
Current location: TBD

John Moore
Degree: MSc, Dec 2016
Thesis: Deep Collective Inference
Current location: Microsoft

Timothy La Fond
Degree: PhD, July 2016
Thesis: Controlling for Confounding Network Properties in Hypothesis Testing and Anomaly Detection
Current location: Lawrence Livermore National Laboratories

Ransen Niu
Degree: BSc, May 2016
Research project: Transfer learning in networks Current location: PhD Program, CS, Cornell University

Nesreen Ahmed
Degree: PhD, July 2015
Thesis: Scaling Up Network Analysis and Mining: Statistical Sampling, Estimation, and Pattern Discovery
Current location: Research Scientist, Technicolor Research

Stephen Mussmann
Degree: BSc, May 2015
Research project: Assortativity in statistical models of graphs
Current location: PhD Program, CS, Stanford University

Joseph Pfeiffer III
Degree: PhD, May 2015
Thesis: Overcoming Uncertainty for Within-Network Relational Machine Learning
Current location: Applied Researcher, Microsoft

Sebastian Moreno
Degree: PhD, August 2014
Thesis: Network Hypothesis Testing for Relational Data
Current location: Faculty, Universidad Adolfo Ibanez, Chile

Seong Lee
Degree: BSc, May 2014
Research project: Sentiment Analysis of Facebook Messages

Suvidha Kancharla
Degree: MSc, May 2014
Current location: Software Engineer, Microsoft

Karthik Nagaraj
Degree: PhD, October 2013
Thesis: Enabling Richer Insight Into Runtime Execution of Systems

Current location: Software Engineer, Google

Dan Coroian
Degree: BSc, May 2013
Research project: An Application of SARSA Learning to Klondike Solitaire Current location: PhD Program, Computer Science, Duke University

Brian Donovan
Degree: BSc, May 2013
Research project: Using Facebook Text to Predict Social Characteristics Current location: PhD Program, Civil Engineering, UIUC

Christopher Cole
Degree: BSc, May 2013
Research project: Analysis of Dynamic Email Graphs Current location: Software Engineer, Amazon

Daniel Roberts
Degree: BSc, May 2013
Research project: The Impact of Interpersonal Dependencies on Distributed Teams Current location: Software Engineer, EMC Isilon

Rongjing Xiang
Degree: PhD, August 2012
Thesis: Statistical Relational Learning for Single Network Domains
Current location: Software Engineer, Google

Jordan Bates
Degree: BSc, May 2012
Research project: Style vs. topic analysis of political speeches in congress Current location: PhD Program, Applied Math and Life and Social Sciences, Arizona State University

Hoda Eldardiry
Degree: PhD, February 2012
Thesis: Ensemble Classification Techniques for Relational Domains
Current location: Manager, Machine Learning Group, Palo Alto Research Center (PARC)

Chris Mayfield (co-advised with Sunil Prabhakar)
Degree: PhD, Aug 2011
Thesis: Statistical Inference and Data Cleaning in Relational Database Systems
Current location: Associate Professor, James Madison University

Ankit Kuwadekar
Degree: BSc, May 2010
Research project: Active Learning for Relational Domains
Current location: Software Engineer, Amazon

Umang Sharan
Degree: MSc, May 2008
Thesis: Temporal-Relational Classifiers for Prediction in Evolving Domains
Current location: Software Engineer, YouTube (Google)