

Research Interests

data science, data mining, graph analysis (e.g., social networks), natural language processing, machine learning

Education

Ph.D. in Computer Science (University of Illinois at Chicago)

Thesis: Sampling and Inference in Complex Networks

Advisor: Tanya Berger-Wolf

M.S. in Computer Science (DePaul University)

B.S. in Psychology (University of Illinois at Urbana-Champaign)

Employment

- 2011-Present **Research Staff Member**
Institute for Defense Analyses – Alexandria, VA USA
- 2007-2011 **Researcher**
University of Illinois at Chicago
(Includes research assistantship, fellowship tenure, thesis research, and other research projects.)
- 2002-2007 **Co-Owner**
MTR Imports, Inc. – Darien, IL USA
- 2003-2005 **Research and Development Lead**
R&D Division, Hostway Corporation – Chicago, IL USA
- 2002-2003 **Senior Software Engineer**
Embossed Graphics, Inc. – Aurora, IL USA
- 2000-2001 **Member of Technical Staff**
Tellabs, Inc. – Naperville, IL USA

Publications

- **A.S. Maiya**. A Framework for Comparing Groups of Documents. *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing (EMNLP '15)*. Lisbon, Portugal. September 2015.
- **A.S. Maiya**, D. Visser, and A. Wan. Mining Measured Information from Text. *Proceedings of the 38th International ACM SIGIR conference on research and development in Information Retrieval (SIGIR '15)*. Santiago, Chile. August 2015.
- **A.S. Maiya** and R.M. Rolfe. Topic Similarity Networks: Visual Analytics for Large Document Sets. *Proceedings of the 2014 IEEE International Conference on Big Data (IEEE BigData '14)*. Washington, D.C. October 2014.
- **A.S. Maiya**, J.P. Thompson, F. Loaiza-Lemos, and R.M. Rolfe. Exploratory Analysis of Highly Heterogeneous Document Collections. *Proceedings of the 19th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '13)*. Chicago, IL. August 2013.
- **A.S. Maiya** and T.Y. Berger-Wolf. Expansion and Decentralized Search in Complex Networks. *Journal of Knowledge and Information Systems (KAIS)*. First published online January 2013.
- **A.S. Maiya**, F. Loaiza-Lemos, and R.M. Rolfe. Supervised Learning in the Wild: Text Classification for Critical Technologies. *Proceedings of the IEEE Military Communications Conference (MILCOM '12)*. Orlando, FL. October 2012.
- **A.S. Maiya** and T.Y. Berger-Wolf. Benefits of Bias: Towards Better Characterization of Network Sampling. *Proceedings of the 17th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '11)*. San Diego, CA. August 2011.

- M.C. Crofoot, D.I. Rubenstein, **A.S. Maiya**, and T.Y. Berger-Wolf. Aggression, Grooming, and Group-level Cooperation in White-faced Capuchins (*Cebus capucinus*): Insights from Social Networks. *American Journal of Primatology*. First published online May 2011.
- **A.S. Maiya** and T.Y. Berger-Wolf. Expansion and Search in Networks. *Proceedings of the 19th ACM International Conference on Information and Knowledge Management (CIKM '10)*. Toronto, Canada. October 2010.
- **A.S. Maiya** and T.Y. Berger-Wolf. Online Sampling of High Centrality Individuals in Social Networks. *Proceedings of the 14th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD '10)*. Hyderabad, India. June 2010.
- **A.S. Maiya** and T.Y. Berger-Wolf. Sampling Community Structure. *Proceedings of the 19th ACM International Conference on the World Wide Web (WWW '10)*. Raleigh, NC. April 2010.
- **A.S. Maiya** and T.Y. Berger-Wolf. Inferring the Maximum Likelihood Hierarchy in Social Networks. *Proceedings of the 12th IEEE International Conference on Computational Science and Engineering (CSE '09)*. Vancouver, Canada. August 2009.
- M. Lahiri, **A.S. Maiya**, R. Sulo, Habiba, and T.Y. Berger-Wolf. The Impact of Structural Changes on Predictions of Diffusion in Networks. *ICDM '08 Workshop on Analysis of Dynamic Networks*. Pisa, Italy. December 2008.

Invited Talks

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| Oct. 2015 | <i>Text Mining in the Critical Infrastructure Domain</i> , The President's NSTAC Big Data Analytics Subcommittee, Department of Homeland Security, Arlington, VA |
| Mar. 2015 | <i>Mining Scientific and Technical Reports</i> , National Academy of Sciences, Washington, D.C. |
| Oct. 2014 | <i>From Extreme Data to Relevant Data: Content Discovery Using Automated Semantic Processing</i> , Symposium on Big Data for Defense, Intelligence, and Homeland Security, Washington D.C. |
| Oct. 2013 | <i>Data Science and the DoD: An Example of Knowledge Discovery from Text Data</i> , Enterprise Data Science Forum at RAND Corporation, Arlington, VA. |
| Sep. 2012 | <i>Text Analytics for DoD Data</i> , Defense Technical Information Center (DTIC), Fort Belvoir, VA. |
| Dec. 2010 | <i>Sampling and Structural Inference in Social Networks</i> , Institute for Defense Analyses (IDA), Alexandria, VA. |
| Dec. 2009 | <i>Social Network Analysis for Animal Behaviorists</i> , Princeton University, Department of Ecology and Evolutionary Biology, Princeton, NJ. |

Conference and Workshop Presentations

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| Oct. 2014 | Topic Similarity Networks, <i>IEEE BigData '14</i> , Washington, D.C. |
| Aug. 2013 | Exploratory Analysis of Highly Heterogeneous Document Collections, <i>KDD '13</i> , Chicago, IL. |
| Aug. 2011 | Benefits of Bias: Towards Better Characterization of Network Sampling, <i>KDD '11</i> , San Diego, CA. |
| Oct. 2010 | Expansion and Search in Networks, <i>CIKM '10</i> , Toronto, Canada. |
| Jun. 2010 | Online Sampling of High Centrality Individuals in Social Networks, <i>PAKDD '10</i> , Hyderabad, India. |
| Apr. 2010 | Sampling Community Structure, <i>WWW '10</i> , Raleigh, NC. |
| Aug. 2009 | Inferring the Maximum Likelihood Hierarchy in Social Networks, <i>SIN '09</i> , Vancouver, Canada. |
| Dec. 2008 | The Impact of Structural Changes on Predictions of Diffusion in Networks, <i>ICDM '08</i> , Pisa, Italy. |

Teaching Experience

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| 2008 | Discrete Mathematics and Data Structures (<i>teaching assistant, UIC</i>) |
| 2008 | Computer Algorithms (<i>guest lecturer, UIC</i>) |
| 2001 | Java for C++ Programmers (<i>co-instructor, Tellabs, Inc.</i>) |

Service

- Ad hoc Reviewer
Nature Communications, Nature Scientific Reports, Physica A, ACM Transactions on Knowledge Discovery from Data (TKDD), ACM Transactions on the Web (TWEB), Social Network Analysis and Mining (SNAM)
- Program Committee Member
KDD '16, ICDM '16, SDM '16, ECML PKDD '16, KDD '16 ODD Workshop, KDD '15, ICDM '15, SDM '15, ECML PKDD '15, KDD '15 ODD Workshop, KDD '14, ICDM '14, KDD '14 ODD Workshop, CIKM '13, SIGMOD '13 DyNetMM Workshop, CIKM '12, AAAI '12, KDD '12 SOMA Workshop, ICDM '11
- Panel Participation:
Panel on "Automated Content Understanding", National Archives and Records Administration (2013)
Panel on "Democratizing Machine Learning", DARPA/ISAT (2013)
Panel on "Advanced Computing Capabilities in U.S. National Labs", STPI (2012)
- Contributor to Wiley Encyclopedia of Operations Research and Management Science (2009)

Awards and Honors

2016	Winner, General Larry D. Welch Award for best external publication (IDA)
2013-2015	Finalist (3 years running), General Larry D. Welch Award for best external publication (IDA)
2012	Selected IDA Participant in Defense Science Studies Group or DSSG (IDA/DARPA)
2007-2008	NSF IGERT Fellowship (National Science Foundation)
2008	NSF Travel Grant (National Science Foundation)
2001	Key Contributor Award (Tellabs, Inc.)
2000	Graduation with Distinction (DePaul University)