

TIM WENINGER, PH.D.

Last updated March 04, 2021

University of Notre Dame
353 Fitzpatrick Hall
Notre Dame, IN 46656

<http://www.cse.nd.edu/~tweninger/>
tweninge@nd.edu
+1-574-631-6770

EXPERIENCE

Frank M. Freimann Collegiate Associate Professor of Engineering	2020 – <i>present</i>
Associate Professor	2019 – 2020
Assistant Professor	2013 – 2019

University of Notre Dame
Department of Computer Science and Engineering
Center for Network and Data Science
Pulte Institute for Global Development
Technology Ethics Center

EDUCATION

Ph.D.	University of Illinois Urbana-Champaign, Computer Science	2013
	Title: <i>Discovering Roles and Types from Hierarchical Information Networks</i>	
	Committee: Jiawei Han (chair), Kevin C.C. Chang, Saurabh Sinha, Bing Liu	
M.S.	Kansas State University, Computer Science	2008
B.S.	Kansas State University, Information Systems	2007

HONORS AND AWARDS

CSE Outstanding Faculty Teaching Award	2018
Inaugural Member - ACM Future of Computing Program	2017
Army Research Lab Young Investigator Award	2017
National Science Foundation CAREER Award	2017
National Academies Keck Futures Fellow	2014
TED Editors Pick of the Month	2014
Paper Selected as "Best Of" ACM/IEEE ASONAM	2014
UIUC DCS Outstanding Graduate Service Award	2012
National Science Foundation Graduate Research Fellowship	2010
National Defense Science Engineering Graduate Fellowship	2009
UIUC DCS Graduate Fellowship	2009

PUBLICATIONS

(@ indicate supervised PhD Students. * indicate supervised undergraduate students.)

Journal Papers

J22 Yankoski, M., Scheirer, W. J., Weninger, T. "Meme Warfare: AI countermeasures to disinformation should focus on popular, not perfect, fakes." *Bulletin of the Atomic Scientists*. 77(3), May 2021 (IF=1.368)

- J21 @Thomas, P.B., *Riehm, D., Glenski, M., Weninger, T. “Behavior Change in Response to Subreddit Bans and External Events” *IEEE Trans. on Computational Social Sciences*. X(Y), March. 2021 (IF=3.29)
Thomas, Glenski and Weninger discussed the idea. Riehm and Thomas performed the experiments. Thomas and Weninger drafted the paper. All authors edited the final draft.
- J20 @Botzer, N., @Ding, Y., Weninger, T. “Reddit Entity Linking Dataset” *Information Processing and Management*. 58(3), Jan. 2021 (IF=4.787)
Mr. Botzer and Mr. Ding collected the data. Mr. Botzer primarily executed the experiments. We all edited the paper.
- J19 Scheirer, W. J., Weninger, T., Yankoski, M. “An AI early warning system to monitor online disinformation, stop violence, and protect elections” *Bulletin of the Atomic Scientists*. 76(2), March 2020 (IF=1.368)
All three authors contributed to the writing of this work.
- J18 @Krohn, R., Weninger, T. “Library Adoption in Public Software Repositories” *Journal of Big Data*. 6(36), May 2019 (IF=8.808)
Ms. Krohn collected data and performed most of the experiments. Ms. Krohn and I performed the experimental analysis and wrote the paper together.
- J17 @Glenski, M., Volkova, S., Weninger, T. “Propagation from Deceptive News Sources” *IEEE Trans. on Computational Social Sciences*. 5(4), December 2018 (IF=2.65)
Ms. Glenski and Ms. Volkova collected data and conceived of the experiment. Ms. Glenski and I performed the experimental analysis and wrote the paper.
- J16 Hungerman, D., Rinz, K., Weninger, T. and Yoon, C. “Political Campaigns and Church Contributions” *Journal of Economic Behavior & Organization*. 155, November 2018 (IF=1.323)
Mr. Hungerman and I co-developed the data collection system. Mr. Rinz, Mr. Yoon and Mr. Hungerman performed the economics analysis. We all edited the paper.
- J15 @Glenski, M., Stoddard, G., Resnick, P., Weninger, T. “GuessTheKarma: A Game to Assess Social Rating Systems”, *Proc. of ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*, 2018 (IF=conference is transitioning to journal; 25% acceptance rate)
Mr. Stoddard and Ms. Glenski developed and executed the experiment concept with the guidance of Mr. Resnick and myself. Ms. Glenski, Mr. Resnick, and I wrote and edited the paper.
- BC1 Hungerman, D., Rinz, K., Weninger, T. and Yoon, C. “Religious Leadership, Religious Language, and Religious Giving: A Study of Church Bulletins” *Handbook chapter for Advances in the Economics of Religion*, Palgrave, 2018. (book chapter in press)
Mr. Hungerman and I co-developed the data collection system. Mr. Rinz, Mr. Yoon and Mr. Hungerman performed the economics analysis. We all edited the chapter.
- J14 @Aguinaga, S., Chiang, D., Weninger, T. “Hyperedge Replacement Graph Grammars for Exact Graph Generation” *IEEE Trans. on Pattern Analysis and Machine Intelligence* (published online for early access via 10.1109/TPAMI.2018.2810877) (IF=11.383)
Mr. Chiang and I co-created the algorithm. Mr. Aguinaga performed the experiments. The authors contributed equally to the writing.
- J13 Zhao, Z., Yang, Q., Lu, H., Weninger, T., Cai, D., He, X., Zhuang, Y. “Community-based Movie Recommendation via Multimodal Network Learning” *IEEE Trans. on Multimedia*, 20(2), 2018. (IF=3.977)
This project was conceived and performed primarily by the authors at Zhejiang University. I helped craft the narrative and write the paper.
- J12 @Glenski, T., @Pennycuff, C., Weninger, T. “Consumers and Curators: Browsing and Voting Patterns on Reddit” *IEEE Trans. on Computational Social Sciences*, 4(4), 2017. (IF=2.65)
I conceived of the project. Pennycuff and Glenski wrote the data collection software. Glenski performed the data analysis. Glenski and I co-wrote the paper.
- J11 @Shi, B., Yang, L., Weninger, T. “Forward Backward Similarity Search in Knowledge Networks” *Knowledge-Based Systems*, 119(1), 2017. (IF=3.325)
Shi and Yang conceived of the project and wrote 75% of the paper. I advised on the experiments and wrote 25% of the paper.

- J10 @Pennycuff, C., Weninger, T. “Striations in PageRank-Ordered Matrices” *Social Network Analysis and Mining*, 6(1), 1-17, 2017. (IF=[new journal])
Mr. Pennycuff discovered the striations phenomena and wrote 50% of the paper. I conceived of the project, performed most of the experiments and and wrote 50% of the text.
- J9 @Glenski, M., Weninger, T. “Rating Effects on Social News Posts and Comments” *ACM Transactions on Intelligent Systems and Technology*, 8(6), 78, 2017. (IF=3.19)
Ms. Glenski performed the experiments and data analysis and wrote 25% of the paper. I conceived of the project, and wrote the majority of the text.
- J8 @Shi, B., Weninger, T. “Discriminative Predicate Path Mining for Fact Checking in Knowledge Graphs” *Knowledge-Based Systems*. 2016. (IF=3.325)
Mr. Shi conceived of the idea. Mr Shi designed and completed the experiments. Mr Shi wrote 25% of the paper, I wrote the remainder.
- J7 @Shi, B., Weninger, T. “Scalable Models for Computing Hierarchies in Information Networks” *Knowledge and Information Systems*, January, 2016. (IF=2.64)
Mr. Shi implemented a scalable version of a conference paper from 2010. I conceived of the idea, Mr Shi designed and completed the experiments. Mr Shi wrote 25% of the paper, I wrote the remainder.
- J6 Weninger, T., *Palacios, R., Crescenzi, V., Gottron, T., Merialdo, P. “Web Content Extraction – a Meta-Analysis of its Past and Thoughts on its Future” *ACM SIGKDD Explorations*, 7(2):6 (IF=[Unknown])
I organized this paper with the top subject matter experts. I wrote most of the article; Mr. Palacios, an REU student, performed the experiments and the others contributed discussion, opinions, source code and some text.
- J5 @McCune, R.R., Weninger, T., Madey, G. “Thinking Like a Vertex: a Survey of Vertex-Centric Frameworks for Distributed Graph Processing” *ACM Computing Surveys*, 48(2):25, November 2015. (IF=4.04)
Mr. McCune is co-advised by myself and Mr. Madey. I conceived of the idea to write a survey paper on this subject. Mr. McCune wrote 80% of the paper, I contributed 15% of the paper and Mr. Madey contributed 5%.
- J4 Weninger, T. “An Exploration of Submissions and Discussions in Social News - Mining Collective Intelligence of Reddit” *Social Network Analysis and Mining*. 4:173, 2014. (IF=[new journal])
I conceived the idea, designed the study, and wrote the paper.
- J3 Weninger, T., *Johnston, T.J., Han. J. “The Parallel Path Framework for Entity Discovery on the Web.” *ACM Transactions on the Web (TWeb)*, 7(3):16, 2013. (IF=1.595)
I conceived the idea, designed the study, performed 50% of the experiments with the help of an undergraduate student, Mr. Johnston, and wrote the paper.
- J2 Huang, J., Sun, H., Liu, Y., Song, Q., Weninger, T. “Towards Online Multiresolution Community Detection in Large-Scale Networks.” *PLoS ONE* 6(8): e23829, 2011 (IF=4.092)
Mr Huang conceived of the idea in consultation with myself. His colleagues Mr. Sun, Mr. Liu and Mr. Song implemented the system and completed the experiments. I helped edit the paper.
- J1 Weninger, T., Fumarola, F., Barber, R., Han, J., Malerba, D. “Unexpected Results in List Extraction on the Web.” *SIGKDD Explorations*. 12:2, ACM, 2010. (IF=[Unknown])
I conceived of the idea, and designed the study in consultation with Dr. Malerba and Dr Han. Dr. Fumarola and Mr. Barber executed the experiments. I wrote the paper.

Conference Papers

- C56 @Ding, Y., @Botzer, N, Weninger, T. “HetSeq: Distributed GPU Training on Heterogeneous Infrastructure” in *Proc. of Association for the Advancement of Artificial Intelligence (AAAI) Innovative Application of Artificial Intelligence*, Feb 2021.
- C55 @Hibshman, J., @Gonzalez, D, @Sikdar, S., Weninger, T, Scheirer, W.J. “Joint Subgraph-to-Subgraph Transitions - Generalizing Triadic Closure for Powerful and Interpretable Graph Modeling.” in *Proc. of the International Conference on Web Search and Data Mining (WSDM)*, March 2021.

- C54 Theisen, W., Brogan, J., @Thomas, P., Moreira, D., *Phoa, P., Weninger, T., Scheirer, W.J. “Automatic Discovery of Political Meme Genres with Diverse Appearances.” in *Proc. of the International AAAI Conference on Web and Social Media (ICWSM)*, January 2021.
- C53 Zeng, Q., Yu, W., Yu, M., Jiang, M., Weninger, T. “TriTrain: Automatic Pre-fine Tuning between Pre-training and Fine-tune Training for SciNER.” in *Proc. of Findings in Empirical Methods in Natural Language Processing (Findings in EMNLP)*, November 2020.
- C52 @Thomas, P., Weninger, T. “Deploying a Media Literacy Intervention – a Case Study in Indonesia” in *Proc. of International Conference for Truth and Trust Online*, October 2020.
- C51 @Shi, B., Yang, J., Weninger, T., How, J., and He, Q. “Representation Learning in Heterogeneous Professional Social Networks with Ambiguous Social Connections” in *Prof. of International Conference on Big Data (BigData)*, December 2019.
- C50 @Hibshman, J., @Sikdar S. and Weninger T. “Towards Interpretable Graph Modeling with Vertex Replacement Grammars” in *Prof. of International Conference on Big Data (BigData)*, December 2019.
- C49 @Krohn, R. and Weninger T. “Modeling Online Comment Threads from their Start” in *Prof. of International Conference on Big Data (BigData)*, December 2019.
- C48 @Ding, Y., Wang, D., Weninger, T., and Jiang, M. “Preserving Composition and Crystal Structures of Chemical Compounds in Atomic Embedding” in *Prof. of International Conference on Big Data (BigData)* (Poster), December 2019.
- C47 @Satyaki, S., @Hibshman, J., Weninger. T “Modeling graphs with Vertex Replacement Grammars” in *Proc. of International Conference on Data Mining (ICDM)*, Burlington, VT, November 2019. (9.08% acceptance rate)
- C46 @Satyaki, S., @Hibshman, J., Weninger. T “Modeling graphs with Vertex Replacement Grammars” in *Proc. of International Conference on Network Science (NetSci)*, Burlington, VT, May 2019. (Poster)
- W10 @Satyaki, S., @Hibshman, J., Weninger. T “Modeling graphs with Vertex Replacement Grammars” in *SIAM Workshop on Network Science*, May 2019. (Extended Abstract)
- C45 @Bilo Thomas, P., @Krohn, R., Weninger. T. “Dynamics of Team Library Adoptions: An Exploration of GitHub Commit Logs” in *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, September 2019. (14% acceptance rate)
- C44 Blythe, J., Bollenbacher, J., Huang, D. Hui, P.M., Krohn, R., Pacheco, D., Muric, G., Sapienza, A., Tregubov, A., Ahn, Y.Y., Flammini, A., Lerman, K., Menczer, F., Weninger, T., Ferrara, E. “Massive Multi-Agent Data-Driven Simulations of the GitHub Ecosystem.” in *International Conference on Practical Applications of Agents, Multi-Agent Systems (PAAMS)*, 2019.
- C43 @Glenski, M., Volkova, S., Weninger, T. “How Humans versus Bots React to Deceptive and Trusted News Sources: A Case Study of Active Users” in *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, September 2018. (16% acceptance rate)
- C42 @Glenski, M., Volkova, S., Weninger, T. “How Humans versus Bots React to Deceptive and Trusted News Sources: A Case Study of Active Users” in *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, September 2018. (16% acceptance rate)
- W9 *Wang, X., @Aguinaga, S., Weninger, T., Chiang, D. “Growing Better Graphs With Latent-Variable Probabilistic Graph Grammars” in *ACM International Conference on Knowledge Discovery in Data Mining (SIGKDD) Workshop on Mining and Learning with Graphs (MLG)*, London, United Kingdom, August, 2018.

- C41 @Glenski, C., Volkova, S., Wenginger, T. “Identifying and Understanding User Reactions to Deceptive and Trusted Social News Sources” in *Proc. of Association of Computational Linguistics (ACL)*, Melbourne, August 2018 (23% acceptance rate).
- C40 @Pennycuff, C., @Sikdar, S., *Vajiac, C., Chiang, D., Wenginger, T. “Synchronous Hyperedge Replacement Graph Grammars” in *Proc. of International Conference on Graph Transformation (ICGT)*, Toulouse, France. 2018.
- C39 @Shi, B., Wenginger, T. “Visualizing the Flow of Discourse with a Concept Ontology” in *Proc. of Conference on the World Wide Web (WWW)*, Lyon, France. 2018. (poster track, 35% acceptance rate)
- C38 @Shi, B., Wenginger, T. “Open-World Knowledge Graph Completion” in *Proc. of Association for the Advancement of Artificial Intelligence (AAAI)*, New Orleans, LA, February, 2018. (25% acceptance rate)
- C37 @Glenski, M., Wenginger, T. “Predicting User-Interactions on Reddit” in *IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, Sydney, August, 2017. (17% acceptance rate)
- W8 @Pennycuff, C., @Aguinaga, S., Wenginger, T. “A Temporal Tree Decomposition for Generating Temporal Graphs” *ACM International Conference on Knowledge Discovery in Data Mining (SIGKDD) Workshop on Mining and Learning with Graphs (MLG)*, Halifax, Nova Scotia, August, 2017.
- C36 @Pennycuff, C., Wenginger, T. “Complex Striations in Adjacency Matrices” in *Proc. of International Conference for Network Science (NetSci17)*, Indianapolis, IN, June 21-23, 2017. (Poster)
- C35 @Shi, B., Wenginger, T. “ProjE: Embedding Projection for Knowledge Graph Completion” in *Proc. of Association for the Advancement of Artificial Intelligence*, San Francisco, CA, Feb. 2017. (24.6% acceptance rate)
- C34 @Aguinaga, S., *Palacios, R., Chiang, D., Wenginger, T. “Growing Graphs with Hyperedge Replacement Graph Grammars” in *Proc. of International Conference on Information and Knowledge Management (CIKM)*, Indianapolis, IN, Oct. 2016. (12% acceptance rate)
- W7 @Aguinaga, S., Wenginger, T. “The Infinity Mirror Test for Analyzing the Robustness of Graph Generators” in *ACM International Conference on Knowledge Discovery in Data Mining (SIGKDD) Workshop on Mining and Learning with Graphs (MLG)*, San Francisco, CA, August 2016.
- C33 Osborne, G., Wenginger, T. “Ozy: A General Orchestration Container” in *Proc. of International Conference on Web Services (ICWS)*, San Francisco, CA, Jun. 2016. (26% acceptance rate)
- C32 @Shi, B., Wenginger, T. “Fact Checking in Heterogeneous Information Networks” in *Proc. of International Conference on the World Wide Web (WWW)*, Montreal, CA, Mar. 2016. (16% acceptance rate)
- C31 @Aguinaga, S., *Nambiar, A., *Liu, Z., Wenginger, T. “Concept Hierarchies and Human Navigation” in *Proc. of IEEE International Conference BigData (BigData)*, Santa Clara, CA, Oct. 2015. (17% acceptance rate)
- W6 @Pennycuff, C., Wenginger, T. “Forward Backward Similarity Search in Information Networks”, in *Proc. of ACM International Conference on Knowledge Discovery in Data Mining (SIGKDD) Workshop on High Performance Graph Mining*, Sydney, Australia, Aug. 10, 2015.
- C30 @Glenski, M., *Johnston, T.J., Wenginger, T. “Random Voting Effects in Social-Digital Spaces A case study of Reddit Post Submissions” in *Proc of ACM International Conference on Hypertext and Social Media (HT)*, METU, Cyprus, Sept 1-4, 2015. (37% acceptance rate)

- C29 Weninger, T. “Complex Striations in Adjacency Matrices” in *Proc. of International Conference for Network Science (NetSci15)*, Zaragoza, Spain, June 3-5, 2015. (Poster)
- W4 @Shi, B., Weninger, T. “Mining Interesting Meta-Paths from Complex Heterogeneous Information Networks” in *Proc of IEEE International Conference on Data Mining Workshop on Designing a Market of Data (ICDM MoDAT14)*, Shenzhen, China, December 14-17, 2014.
- C28 McBurney, P.W., Liu, C., McMillan, C., Weninger, T. “Improving Topic Model Source Code Summarization.” in *Proc. of International Conference on Program Comprehension (ICPC)*, Hyderabad, India, June 2-3 2014.
- W3 Weninger, T., @Pennycuff, C. “On Typed-Paths in Multi-Typed Information Networks.” in *Proc. of the 2013 Workshop on Information Networks (WIN)*. October 2013, New York City, NY.
- C27 Weninger, T., Zhu, X.A., Han, J. “An Exploration of Discussion Threads in Social News Sites: A Case Study of the Reddit Community.” in *Proc. of the 2013 IEEE/ACM International Conference on Social Networks Analysis and Mining (ASONAM)*, August 2013, Niagara Falls, Canada (13% acceptance rate)
- C26 Weninger, T., Han, J. “Information Network Analysis and Extraction on the World Wide Web.” in *Proc. of 2013 International Conference on the World Wide Web (WWW)*, Rio de Janeiro, Brazil, May 2013. *Tutorial Paper*.
- C25 Tao, F., Yu, X., Lei, K.H., Brova, G., Cheng, X., Han, J., Kanade, R., Sun, Y., Wang, C., Wang, L., Weninger, T. “Research-Insight: Providing Insight on Research by Publication Network Analysis.” in *Proc. of the International Conference on Management of data (SIGMOD)*, New York, NY. *Demo Paper* (36.8% acceptance rate)
- C24 Weninger, T., Han, J. “Exploring Structure and Content on the Web: Extraction and Integration of the Semi-Structured Web.” in *Proc. of 2012 International Conference on Web Search and Data Mining (WSDM)*, Rome, Italy, Feb. 2013. *Tutorial Paper*.
- C23 Weninger, T., Bisk, Y., Han, J. “Document-Topic Hierarchies from Document Graphs.” in *Proc. of 2012 International Conference on Information and Knowledge Management (CIKM)*, Maui, Hawaii, Oct. 2012. (13.4% acceptance ratio)
- C22 Weninger, T., Zhai, C.X., Han, J. “Building Enriched Web Page Representations Using Link Paths.” in *Proc. 2012 ACM Conference on Hypertext and Social Media (HT)*. Milwaukee, WI, June 2012. (27.5% acceptance rate)
- C21 Barsky, M., Kim, S., Weninger, T., Han, J. “Mining Flipping Correlations from Transactional Databases.” in *Proc. 2012 International Conference on Very Large Data Bases (VLDB)* 5(4):370-381, 2011. (18.1% acceptance rate)
- C20 Kim, S., Kim, H., Weninger, T., Han, J., Kim, H.D. “Authorship Classification: A Discriminative Syntactic Tree Mining Approach.” in *Proc. of 2011 International ACM SIGIR Conference on Research & Development in Information Retrieval (SIGIR)*, Beijing, China, Jul. 2011. (19.9% acceptance rate)
- C19 Weninger, T., Danilevsky, M., Fumarola, F., Hailpern, J., Han, J., Johnston, T.J., Kallumadi, S., Kim, H., Li, Z., McCloskey, D., Sun, Y., TeGrotenhuis, N.E., Wang, C., Yu, X. “WinaCS: Construction and Analysis of Web-Based Computer Science Information Networks” in *Proc. of International Conference on Modelling of Data (SIGMOD)*, Athens, Greece, June. 2011. *Demo Paper*. (35% acceptance rate)
- C18 Fumarola, F., Weninger, T., Barber, R., Malerba, D., Han, J. “Extracting General Lists from Web Documents: A Hybrid Approach” in *Proc. of International Conference on Industrial, Eng. and Other Applications of Applied Intel. Sys. (IEA/AIE)*, Syracuse, New York, USA, Mar. 2011. (28.3% acceptance rate)

- C17 Weninger, T., Fumarola, F., Barber, R., Lin, C.X., Han, J., Malerba D. “Growing Parallel Paths for Entity-Page Discovery” in *Proc. of International World Wide Web Conference (WWW)*, Hyderabad, India, Mar. 2011. (16.9% acceptance rate)
- C16 Fumarola, F., Weninger, T., Barber, R., Malerba, D., Han, J. “HyLiEn: A Hybrid Approach to General List Extraction on the Web” in *Proc. of International World Wide Web Conference (WWW)*, Hyderabad, India, Mar. 2011. (16.9% acceptance rate)
- C15 Weninger, T., Fumarola, F., Han, J., Malerba, D. “Mapping Web Pages to Database Records via Link Paths” in *Proc. 2010 ACM International Conference on Information and Knowledge Management (CIKM)*, Toronto, Canada, Oct. 2010. (17.9% acceptance rate)
- C14 Kim, H., Kim, S., Weninger, T., Han, J., Abdelzaher, T. “NDPMine: Efficiently Mining Discriminative Numerical Features for Pattern-Based Classification” in *Proc. on Principles and Practice of Knowledge Discovery in Databases (PKDD)*, Barcelona, Spain, Sept. 2010. (16.1% acceptance rate)
- C13 Weninger, T., Ramachandran, S., Greene, D., Hart, J., Kancherlapalli, A., Hsu, W.H., Han, J. “Speech-Assisted Radiology System for Retrieval, Reporting and Annotation” in *Proc of ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (KDD)*, Washington DC, Jul. 2010. *Demo Paper*
- W2 Kim, S., Kim, H., Weninger, T., Han, J. “Authorship Classification: A Syntactic Tree Mining Approach” in *Proc. of SIGKDD workshop on Useful Patterns (UP’10)*, Washington DC, Jul. 2010.
- C12 Yin, Z., Gupta, M., Weninger, T., Han, J. “A Unified Framework for Link Recommendation Using Random Walks” in *Proc. of International Conference on Advances in Soc. Net. Analysis and Mining (ASONAM)*, Odense, Denmark, Aug. 2010. (16% acceptance rate)
- C11 Weninger, T., Hsu, W.H., Han, J. “CETR - Content Extraction via Tag Ratios” in *Proc. of International World Wide Web Conference (WWW)*, Raleigh, NC, Apr. 2010. (14% acceptance rate)
- C10 Yin, Z., Gupta, M., Weninger, T., Han, J. “LINKREC: A Unified Framework for Link Recommendation with User Attributes and Graph Structure” *Proc. of International World Wide Web Conference (WWW)*, Raleigh, NC, Apr. 2010.
- C9 Lin, C.X., Zhao, B., Weninger, T., Han, J., Liu, B. “Entity Relation Discovery from WebTables and Links” *Proc. of International World Wide Web Conference (WWW)*, Raleigh, NC, Apr. 2010.
- C8 Weninger, T., Greene, D., Hart, J., Hsu, W.H., Ramachandran, S. “Speech-Assisted Radiology System for Retrieval, Reporting and Annotation” in *Proc. of IEEE Conf. on Computer-based Med. Sys. (CBMS)*, Albuquerque, NM, Aug. 2009.
- C7 Weninger, T., Hsu, W.H., Xia, J., Aljandal, W. “An Evolutionary Approach to Constructive Induction for Link Discovery” in *Proc. of International Genetic and Evolutionary Computation Conference (GECCO)*, Montreal, Canada, Jul. 2009. (25.8% acceptance rate)
- C6 Crow, J., Weninger, T. “Creating interactive and dynamic choice experiments” in *Proc of Conference of the Soc. of Judgment and Decision Making*, Chicago, Illinois. Nov. 2008.
- C5 Al-Jandal, W., Hsu, W.H., Bahirwani, V., Caragea, D., Weninger, T. “Validation-Based Normalization and Selection of Interestingness Measures for Association Rules” in *Proc. of International Conference on Artificial Neural Networks in Engineering (ANNIE)*. St. Louis, MO, Nov. 2008.
- C4 Hsu, W.H., Weninger, T., Paradesi, M.S.R. “Predicting Links and Link Change in Friends Networks Supervised Time Series Learning with Imbalanced Data”, in *Proc. of International Conference on Artificial Neural Networks in Engineering (ANNIE)*. St. Louis, MO, Nov. 2008.

- C3 Weninger, T., Hsu, W.H. “Web Content Extraction Through Histogram Clustering”, in *Proc. of International Conference on Artificial Neural Networks in Engineering (ANNIE)*. St. Louis, MO, Nov. 2008.
- W1 Weninger, T., Hsu, W.H. “Text Extraction from the Web via Text-To-Tag Ratio” in *Proc. of Workshop on Text Informational Retrieval at DEXA (TIR)*, Turin, Italy, Sept. 2008.
- C2 Hsu, W.H., Lancaster, J., Paradesi, M.S.R., Weninger, T. “Structural Link Analysis from User Profiles and Friends Networks: A Feature Construction Approach” in *Proc. of International Conference on Weblogs and Social Media (ICWSM)*, Boulder, CO, Mar. 2007. (20% acceptance rate)
- C1 Hsu, W.H., King, A., Paradesi, M.S.R., Pydimarri, T., Weninger, T. “Collaborative And Structural Recommendation Of Friends Using Weblog-Based Social Network Analysis” in *Proc of AAAI Conf. on Comp. App. to Analyzing Weblogs (AAAI-CAAW)*, Stanford, CA, Mar. 2006.

PUBLICATIONS UNDER REVIEW

Journal Papers

Conference Papers

GRANTS AND SPONSORED PROGRAMS

“Greater Internet Freedom”

September 1, 2020 - August 30, 2023

Funding Vehicle: USAID

Project Amount: \$15,000,000

Amount to Notre Dame: \$ 1,094,866

Role: Notre Dame P.I.

“DISCOVER: a Data-driven Integrated approach for Semantic inCONSistencies VERification”

October 1, 2020 - September 30, 2024

Funding Vehicle: DARPA

Project Amount: \$4,000,000

Amount to Notre Dame: \$701,843

Role: Co-P.I.

“Advancing Media Literacy for New Digital Arrivals in Developing Countries”

October 1, 2018 - September 30, 2022

Funding Vehicle: USAID

Amount: \$1,796,343

Role: Lead P.I.

“Deception Detection, Tracking and Factuality Assessment in Social and News Media LDRD Project”

December 1, 2018 - May 31, 2019

Funding Vehicle: US Dept. of Energy via Pacific Northwest National Laboratory

Amount: \$29,364

Role: Single P.I.

“Deception Detection, Tracking and Factuality Assessment in Social and News Media”

December 1, 2017 - May 31, 2018

Funding Vehicle: US Dept. of Energy via Pacific Northwest National Laboratory

Amount: \$27,600

Role: Single P.I.

“COSINE: Cognitive Online Simulation of Information Network Environments”

October 1, 2017 - Sept 30, 2021

Funding Vehicle: DARPA

Project Amount: \$4,950,000

Amount to Notre Dame: \$280,000

Role: Notre Dame P.I.

“Mining Conversation Trails for Effective Group Behavior”

July 15, 2017 - July 14, 2020

Funding Vehicle: Army Research Office

Amount to Notre Dame: \$372,037

Role: Single P.I.

“Principled Structure Discovery for Network Analysis”

July 1, 2017 - June 30, 2022

Funding Vehicle: National Science Foundation

Amount to Notre Dame: \$592,565

Role: Single P.I.

“Verba Volant, Scripta Manent: Automatic Manuscript Analysis for the Vatican Secret Archives”

June 1, 2017 - May 31, 2018

Funding Vehicle: Notre Dame Internal Funding

Amount: \$32,000

Role: Co-P.I. with ND Prof. Chiang and ND Prof. Scheirer

“Knowledge Hierarchies and Natural Navigation”

January 1, 2015 - July 31, 2016

Funding Vehicle: Templeton Foundation subcontract from University of Chicago

Project Amount: \$5,200,000

Amount to Notre Dame: \$58,000 (total from three grant amendments)

Role: Notre Dame P.I.

“Constructing a Dataset of Catholic Parish Bulletins”

June 1, 2015 - May 31, 2016

Funding Vehicle: Notre Dame FRSP

Amount: \$10,000

Role: Co-P.I. with ND Prof. Hungerman

“Knowledge and Social Network Analysis”

January 1, 2016 - December 31, 2016

Funding Vehicle: Notre Dame RGG

Amount: \$35,500

Role: Single P.I.

“Socio-Digital Influence Attack Models and Deterrence”

September 1, 2014 - August 31, 2017

Funding Vehicle: Air Force Office of Scientific Research

Amount to Notre Dame: \$349,378

Role: Single P.I.

INVITED TALKS

Heterogeneous Information Networks Workshop (Keynote) at KDD, Singapore, August 2021
USAID Center of Excellence on Democracy, Human Rights, and Governance, Virtual, June 2021
Concordia Live: Information Literacy & Misinformation in the Era of COVID-19, Virtual Townhall, June 2021
Social Natural Language Processing Workshop at NAACL, Virtual, June 2021
Heterogeneous Information Networks Workshop (Keynote) at KDD, Singapore, August 2021
Young Professionals in Foreign Policy Panel on Chinese Foreign Influence, Virtual, August 2020
USAID Center of Excellence on Democracy, Human Rights, and Governance, Virtual, May 2020
Workshop on Misinformation, National Academies of Science, Engineering, and Medicine, Washington DC, January 2020
Hesburgh Lecture at the Notre Dame Club of Washington DC, January 2020
BigGraphs Workshop (Keynote) at International Conference on Big Data, Los Angeles, CA, December 2019
University of Northern Illinois, DeKalb, IL, September 2019
Stanford Information Warfare Center, Stanford, CA, August 2019
Florida 20th Circuit Court (Expert Witness), Punta Gorda, FL, May 2019
Clemson University, Clemson, SC, April 2019
Hesburgh Lecture at the Notre Dame Club of Western Carolinas, April 2019
Getting the Story Straight at Elkhart Public Library, February 2019
Hesburgh Lecture at the Notre Dame Club of Pittsburgh, November 2018
Hesburgh Lecture at the Notre Dame Club of Cincinnati, October 2018
Credibility on the Web Workshop, New York City, October 2018
Computing Community Consortium Early Career Researcher Symposium, Washington DC, August 2018
King's College, London, June 2018
Computing Community Consortium Meeting on Addressing National Priorities and Societal Needs, Washington DC, October 2017
ACM SIGKDD Workshop on Broadening Participation in Data Mining, Halifax, Nova Scotia, Canada, August 2017
ACM SIGKDD Workshop on Data Driven Science, Halifax, Nova Scotia, Canada, August 2017
International Conference on Weblogs and Social Media Workshop on Digital Misinformation, Montreal, Quebec, Canada, June 2017
University of Oklahoma, Norman, Oklahoma, February 2017
IBM TJ Watson Laboratory, Yorktown Heights, New York, February 2017
Data Mining Meets Visual Analytics Workshop at International Conference on Knowledge Management, Indianapolis, IN, October 2016
University of Indiana, Bloomington, Indiana, October 2016
Wayne State University, Detroit, Michigan, October 2016
Midwest Big Data Challenges and Opportunities Workshop, Chicago, Illinois, September 2016
ACM SIGKDD Workshop on Broadening Participation in Data Mining, Halifax, San Francisco, August 2016
Roma Tre University, Rome, Italy, July 2016
University of Southern California, Los Angeles, CA, April 2016

Arizona State University, Tempe, AZ, February 2016
University of Chicago, Chicago, IL, November 2015
Greater Chicago Area System Research Workshop, Chicago, IL, April 2015
International Symposium on Occupational Exposure (Keynote), Ft. Lauderdale, FL, January 2015
Texas A&M University, College Station, TX, October 2013
National Science Foundation, Arlington, VA, February 2013
University of Texas, Austin, TX, March 2013
University of New Mexico, Albuquerque, NM, March 2013
University of Nebraska, Albuquerque, NM, March 2013
University of Kentucky, Lexington, Kentucky, February 2013
University of Maryland, College Park, MD, February 2013
Arizona State University, Tempe, AZ, January 2013
International Symposium on Occupational Exposure, Ft. Lauderdale, FL, January 2013
Nuclear, Plasma and Radiological and Engineering Seminar, Urbana, IL, January 2013.
University of Michigan, Department of Computer Science, Ann Arbor, MI, November 2012
Command Control and Interoperability Center for Advanced Data Analysis (CCICADA), Urbana, IL, March 2012
Universit degli Studi Roma Tre, Dipartimento di Informatica e Automazione, Rome, Italy, June 2011

NOTRE DAME INVITED PRESENTATIONS

Ten Years Hence, Mendoza College of Business, January 2019
Shamrock Series Panel, New York City, November 2018
ND Perspectives, University of Notre Dame Reunion Panel, June 2018
TEDxUND, University of Notre Dame, IN, January 2014

PHD STUDENTS GRADUATED

Robert Ryan McCune, *Graduated May 2016*, co-Advised with Greg Madey
Placement: Asst. Professor at Cal Poly
Salvador Aguinaga, *Graduated May 2018*,
Placement: Research Scientist at Kyndi
Corey Pennycuff, *Graduated May 2018*,
Placement: Teaching Professor at University of Notre Dame
Baoxu Shi, *Graduated May 2018*,
Placement: Research Scientist at LinkedIn
Maria Glenski, *Graduated May 2019*,
Placement: Research Scientist at Pacific Northwest National Laboratory

CURRENT POSTDOC SUPERVISION

Michael Yankoski, *Postdoctoral Research Assistant* (since December 2020)

CURRENT STUDENT SUPERVISION

Satyaki Sikdar, *Ph.D. Student* (since September 2017)

Rachel Krohn, *Ph.D. Student* (since September 2017)

Justus Hibshman, *Ph.D. Student* (since September 2018)

Pamela Bilo Thomas, *Ph.D. Student* (since September 2018)

Nicholas Botzer, *Ph.D. Student* (since January 2019)

Trenton Ford, *Ph.D. Student* (since Aug 2019)

Yifan Ding, *Ph.D. Student* (since Aug 2019)

Daniel Gonzalez, *Ph.D. Student* (since Dec 2019)

MEDIA COVERAGE

With modern media, press coverage sometimes spreads far and wide. There are often more outlets reporting than can be captured. This section therefore lists only a representative article (or two) of the total press coverage.

All IN NPR (Summer 2021)

Radio Broadcast (1 hour talk show)

Social Media Business Model and Algorithms (Spring 2021)

<https://abc6onyourside.com/news/nation-world/the-business-model-is-addiction-senators-question-social-media-algorithms>

Why Section 230 is under fire (Winter 2020)

<https://www.csmonitor.com/USA/Politics/2020/1203/Why-the-26-words-that-created-the-internet-are-under-fire>

Social media sites under scrutiny as they struggle with election misinformation (Fall 2020)

<https://abc6onyourside.com/news/nation-world/social-media-sites-under-scrutiny-as-they-struggle-with-election-misinformation>

Experts Fear Facebook Could be Used to Sow Post Election Chaos (Fall 2020)

<https://abc6onyourside.com/news/nation-world/despite-new-policies-experts-fear-facebook-could-be-used-to-sow-post-election-chaos>

<https://wjla.com/news/beyond-the-podium/despite-new-policies-experts-fear-facebook-could-be-used-to-sow-post-election-chaos>

Fear causing bad information to flood social media (Summer 2020)

<https://www.wndu.com/content/news/Fear-causing-bad-information-to-flood-social-media-571028061.html>

Fact-checking Trump, Twitter enters uncharted waters (Summer 2020)

<https://www.politifact.com/article/2020/may/28/fact-checking-trump-twitter-enters-uncharted-water/>

Familiar Shapes (Spring 2020)
<https://www.familiarshapesthemovie.com/>
This is a documentary film that is slated for release in Spring 2020

Host of Problems with Facebook Deepfake Ban, Expert Says – Communications of the ACM Magazine (Fall 2019)
<https://cacm.acm.org/opinion/articles/242052-host-of-problems-with-facebook-deepfake-ban-expert-says/>

Twitter’s political ad policy is a small step in the fight against disinformation – CNN Opinion Article (Fall 2019)
<https://www.cnn.com/2019/11/15/perspectives/twitter-political-ad-policy>

Bitcoin Rally is not the Same (Summer 2019) <https://www.bloomberg.com/news/articles/2019-06-26/bitcoin-s-rally-feels-like-2017-but-it-s-not-quite-the-same>

Getting the Story Straight (Spring 2019) *Radio interviews with Pamela Bilo Thomas on local radio WTRC, WVPE, WAOR*

Anger on Social Media (Fall 2018)
<http://csmonitor.com/USA/Politics/2018/1207/Outrage-nation-Can-America-overcome-its-addiction-to-anger>

How Fake News Spreads (Fall 2018)
<https://wsbt.com/news/local/researchers-at-notre-dame-are-looking-into-how-fake-news-spreads>

Spread of Lies (Spring 2018)
<https://mashable.com/2018/03/08/twitter-users-retweet-fake-news-study/#b0Jt18NcMmqn>

Social Media Rating Manipulation (Spring 2017)
<https://www.inverse.com/article/27532-twitter-reddit-facebook-social-media-voting-fake-news>
<https://phys.org/news/2017-01-social-media-votes.html>

Community in Focus (Winter 2017)
<https://www.overleaf.com/blog/620-community-in-focus-professor-tim-weninger-on-how-we-consume-and-curate-information>

Content Browsing and Voting (Winter 2017)
https://motherboard.vice.com/en_us/article/vbz49j/new-study-finds-that-most-redditers-dont-actually-read-the-articles-they-vote-on
This article was “trending” on a few social media platforms
<http://www.foxnews.com/tech/2017/12/01/redditers-don-t-read-what-vote-on-according-to-new-study.html>
<https://www.pcmag.com/news/357711/study-reddit-users-tend-to-vote-without-reading>

Social Voting Systems (Fall 2017)
<https://www.sciencenewsforstudents.org/article/power>

Popularity for Sale (Winter 2016)
<https://www.forbes.com/sites/jaymcgregor/2016/12/14/how-we-bought-reddit-for-200/>

PROFESSIONAL ACTIVITIES

Writer/Consultant

Crash Course Artificial Intelligence

YouTube series on AI with 10 million subscribers and millions of views.

https://www.youtube.com/watch?v=a0_lo_GDcFw

Associate Editor

Data Mining and Knowledge Discovery (2019–)

IEEE Transactions on Knowledge and Data Engineering (2019–)

Nature Scientific Reports (2017–2020)

Organizing Committee

Vice-Chair, (2019) IEEE BigData Conference (BigData)

Best Paper Awards Co-Chair, (2019) SIAM Data Mining Conference (SDM)

Co-Chair, (2018, 2019) Workshop on Mining and Learning with Graphs at SIGKDD Conference on Knowledge Discovery in Databases (SIGKDD)

Poster Chair, (2018) International Conference on Data Mining (ICDM)

Travel Chair, (2017) International Conference on Information and Knowledge Management (CIKM)

Co-Chair, (2017) Workshop on Heterogeneous Information Networks at ACM International Conference on Web Search and Data Mining (WSDM)

Workshop Chair, (2016) International Conference on Social Informatics (SocInfo)

Senior Program Committee

2021 ACM International Conference on Knowledge Management (CIKM)

2021 SIGKDD Conference on Knowledge Discovery in Databases (KDD)

2021 SIAM Data Mining Conference (SDM)

2021 AAAI International Conference Web and Social Media (ICWSM)

2021 ACM India Joint International Conference on Data Science & Management of Data (CODS-COMAD)

2020 SIGKDD Conference on Knowledge Discovery in Databases (KDD)

2020 AAAI International Conference Web and Social Media (ICWSM)

2020 SIAM Data Mining Conference (SDM)

2019 SIAM Data Mining Conference (SDM)

2018 International Conference on the World Wide Web (WWW)

2017 SIGKDD Conference on Knowledge Discovery in Databases (KDD)

2017 ACM Conference on Information and Knowledge Management (CIKM)

Program Committee

2021 ACM International Conference on Information Retrieval (SIGIR)

IEEE International Conference on Data Mining (ICDM)

2020 International Conference on Computational Social Science (IC2S2)

ACM International Conference on Knowledge Management (CIKM)

International Conference on Web Search and Data Mining (WSDM)

2019 AAAI Conference on Artificial Intelligence (AAAI)

International World Wide Web Conference (WWW)

International Conference on Computational Social Science (IC2S2)

- 2019* AAAI Conference on Artificial Intelligence (AAAI)
 International World Wide Web Conference (WWW)
 Processing Information Ethically Workshop (PIE)
 SIGKDD Conference on Knowledge Discovery in Databases (KDD)
 IEEE International Conference on Data Mining (ICDM)
 International Conference on Web Search and Data Mining (WSDM)
 International Conference on Web Information Systems Engineering (WISE)
- 2018* AAAI Conference on Artificial Intelligence (AAAI)
 International Conference on Web Search and Data Mining (WSDM)
 SIAM Network Science
 SIGKDD Conference on Knowledge Discovery in Databases (KDD)
 International World Wide Web Conference (WWW)
- 2017* AAAI Conference on Artificial Intelligence (AAAI)
 International Conference on Weblogs and Social Media (ICWSM)
 DEXA Text Information Retrieval Workshop (TIR)
 International Conference on Social Informatics (SocInfo)
 ACM International Conference on Knowledge Management (CIKM)
 International World Wide Web Conference (WWW)
- 2016* AAAI Conference on Artificial Intelligence (AAAI)
 International World Wide Web Conference (WWW)
 SIGKDD Conference on Knowledge Discovery in Databases (KDD)
 International Conference on Social Informatics (SocInfo)
 International Joint Conference on Artificial Intelligence (IJCAI)
- 2015* International World Wide Web Conference (WWW)
 SIGKDD Conference on Knowledge Discovery in Databases (KDD)
 Neural Information Processing Systems (NIPS)
 SIAM Conference on Data Mining (SDM)
 IEEE International Conference on Data Mining (ICDM)
 IEEE International Conference on Machine Learning (ICML)
 International Joint Conference on Artificial Intelligence (IJCAI)
 IEEE International Conference on Big Data Science and Engineering (BigDataSE)
 ACM International Conference on Knowledge Management (CIKM)
 DEXA Text Information Retrieval Workshop (TIR)
- 2014* International Conference on Advanced Data Mining and Applications (ADMA)
 AAAI Conference on Artificial Intelligence (AAAI)
 International World Wide Web Conference (WWW)
 SIGKDD Conference on Knowledge Discovery in Databases (KDD)
 IEEE International Conference on Data Mining (ICDM)
 IEEE International Conference on Machine Learning
 SIAM International Data Mining Conference (SDM)
 DEXA Text Information Retrieval Workshop (TIR)
 Asian Pacific Web Conference (APWeb)
 International Organization for Information Integration and Web-based Applications & Services Conference (iiWAS)
 International Conference on Social Informatics (SocInfo)
- 2013* International Conference on Advanced Data Mining and Applications (ADMA)

DEXA Text Information Retrieval Workshop (TIR)
ACM International Conference on Knowledge Management (CIKM)

2012 DEXA Text Information Retrieval Workshop (TIR)

2011 DEXA Text Information Retrieval Workshop (TIR)

Journal Reviewer

2021 Artificial Intelligence Review

Data Mining and Knowledge Discovery (DAMI)
Transactions on Computational Social Systems
IEEE Transactions on Knowledge and Data Engineering (TKDE)
ACM Transactions on Knowledge Discovery in Databases (TKDD)

2020 Science Advances

Information Sciences
Data Mining and Knowledge Discovery (DAMI)
Physical Review X (PRX)
Transactions on Computational Social Systems
World Wide Web Journal
IEEE Transactions on Knowledge and Data Engineering (TKDE)
Information Systems

2019 Transactions on Information Systems (TOIS)

Transactions on Interactive Intelligent Systems (TIIS)
Information Systems
Nature Scientific Reports
Knowledge and Information Systems (KAIS)
IEEE Transactions on Knowledge and Data Engineering (TKDE)

2018 Nature Scientific Reports

Knowledge and Information Systems (KAIS)
IEEE Transactions on Knowledge and Data Engineering (TKDE)
ACM Journal of Data and Information Quality (JDIQ)
ACM Transactions on the Web (TWeb)

2017 Nature Scientific Reports

Knowledge and Information Systems (KAIS)
IEEE Transactions on Knowledge and Data Engineering (TKDE)
ACM Transactions on the Web (TWeb)

2016 Knowledge Based Systems

IEEE/ACM Transactions on Computational Biology and Bioinformatics
Data Mining and Knowledge Discovery (DAMI)
ACM Transactions on the Web (TWeb)
ACM/IEEE Transactions on Computational Biology and Bioinformatics (TCBB)
ACM Transactions on Knowledge Discovery in Databases (TKDD)
IEEE Transactions on Network Science and Engineering (TNSE)
IEEE Transactions on Knowledge and Data Engineering (TKDE)

2015 Knowledge and Information Systems (KAIS)

ACM Transactions on the Web (TWeb)

IEEE Transactions on Knowledge and Data Engineering (TKDE)
Information Fusion
Social Networks Analysis and Mining

2014 Journal of the American Society for Information Science and Technology (JASIST)
Data Mining and Knowledge Discovery (DAMI)
Neurocomputing
Knowledge and Information Systems (KAIS)
ACM Transactions on the Web (TWeb)
ACM Transactions on Knowledge Discovery and Data Mining (TKDD)
ACM Transactions on Intelligent Systems and Technology (TIST)

2013 IEEE Transactions on Knowledge and Data Engineering (TKDE)
ACM Transaction on Information Systems (TOIS)
Digital Multimedia Broadcasting (IJDMB)
Knowledge and Information Systems (KAIS)
ACM Transactions on the Web (TWeb)