

H. HALIL KILICOGLU

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EDUCATION

- 2012 PhD, Computer Science, Concordia University, Montreal, QC
 Dissertation title: *Embedding Predications*
- 2000 MS, Computer Science, George Washington University, Washington, DC
- 1997 BS, Computer Engineering, Istanbul Technical University, Istanbul, Turkey

RESEARCH/TEACHING POSITIONS

- 2019-Present Associate Professor
 University of Illinois at Urbana-Champaign
 School of Information Sciences, Champaign, IL
- Affiliate
 Center for Health Informatics (2020-Present)
 National Center for Supercomputing Applications (2021-Present)
 Personalized Nutrition Initiative (2021-Present)
 Division of Nutritional Sciences (2023-Present)
- 2012–2019 Research Scientist
 Lister Hill National Center for Biomedical Communications
 U.S. National Library of Medicine
 National Institutes of Health, Bethesda, MD
 Projects: Semantic Knowledge Representation (SKR), Consumer Health
 Information and Question Answering (CHIQA)
- 2007-2012 Research Assistant
 Department of Computer Science and Software Engineering
 Concordia University, Montreal, QC
 Computational Linguistics Lab (CLaC)
- 2007-2012 NLP Researcher
 Lister Hill National Center for Biomedical Communications
 U.S. National Library of Medicine, Bethesda, MD
 Project: Semantic Knowledge Representation (SKR)
- 1999-2000 Teaching Assistant
 Department of Computer Science

OTHER EMPLOYMENT

- 2002-2007 Senior Software Engineer
Aquilent, Inc., Laurel, MD
Lister Hill National Center for Biomedical Communications
U.S. National Library of Medicine
National Institutes of Health, Bethesda, MD
Project: Semantic Knowledge Representation (SKR)
- 2000-2002 Senior Software Engineer
Aquilent, Inc., Laurel, MD
Projects: NLM Small-Scale Vocabulary Testing, NASA Agency BRIO Pilot Program
- 1999-2000 Database Administrator
Department of Computer Science
George Washington University, Washington, DC
- 1997-1998 Software Engineer
Sistek Yazilim (Sistek Software), Istanbul, Turkey

PUBLICATIONS

Book Chapters

1. **(2024)** Rui Zhang, Andrej Kastrin, Dimitar Hristovski, Marcelo Fiszman, and **Halil Kilicoglu**. NLP Applications—Biomedical Literature. In Hua Xu, Dina Demner-Fushman (eds), *Natural Language Processing in Biomedicine: A Practical Guide*. 2024, pages 351-395. Springer, Cham. doi: 10.1007/978-3-031-55865-8_13.

Peer-Reviewed Journal Articles

2. **(2024)** Maria Janina Sarol, Gibong Hong, Evan Guerra, and **Halil Kilicoglu**. Integrating Deep Learning Architectures for Enhanced Biomedical Relation Extraction: a Pipeline Approach. *Database (Oxford)*. 2024 (accepted).
3. **(2024)** Sarah Mullin, Robert McDougal, Kei-Hoi Cheung, **Halil Kilicoglu**, Amanda Beck, and Caroline J Zeiss. Chemical Entity Normalization for Successful Translational Development of Alzheimer's Disease and Dementia Therapeutics. *Journal of Biomedical Semantics*. 2024 (accepted).
4. **(2024)** Maria Janina Sarol, Shufan Ming, Shruthan Radhakrishna, Jodi Schneider, and **Halil Kilicoglu**. Assessing Citation Integrity in Biomedical Publications: Corpus Annotation and NLP Models. *Bioinformatics*. 2024;bt420. doi: 10.1093/bioinformatics/bt420.

5. **(2024)** Shufan Ming, Rui Zhang, and **Halil Kilicoglu**. Enhancing the coverage of SemRep using a relation classification approach. *Journal of Biomedical Informatics*. 2024; 155:104658. doi: 10.1016/j.jbi.2024.104658.
6. **(2024)** Mengfei Lan, Mandy Cheng, Linh Hoang, Gerben ter Riet, and **Halil Kilicoglu**. Automatic categorization of self-acknowledged limitations in randomized controlled trial publications. *Journal of Biomedical Informatics*, 2024; 104628. doi: 10.1016/j.jbi.2024.104628.
7. **(2024)** Yongkang Xiao, Yu Hou, Huixue Zhou, Gayo Diallo, Marcelo Fiszman, **Halil Kilicoglu**, William G Mantyh, Rui Zhang. Repurposing Drugs and Non-pharmacological Interventions for Alzheimer's Diseases through Link Prediction on Biomedical Literature. *Scientific Reports*, 2024; 14(1):8693. Ddi:10.1038/s41598-024-58604-8.
8. **(2024)** Huixue Zhou, Robin Austin, Sheng-Chieh Lu, Greg Marc Silverman, Yuqi Zhou, **Halil Kilicoglu**, Hua Xu, and Rui Zhang. Complementary and Integrative Health Information in the literature: its lexicon and named entity recognition. *Journal of the American Medical Informatics Association*, 2024; 31(2): 426-434. doi: 10.1093/jamia/ocad216.
9. **(2024)** **Halil Kilicoglu**, Faezeh Ensan, Bridget McInnes, and Lucy Lu Wang. Semantics-enabled biomedical literature analytics. *Journal of Biomedical Informatics*, 2024; 104588. doi: 10.1016/j.jbi.2024.104588.
10. **(2024)** Colby J Vorland, Andrew W Brown, **Halil Kilicoglu**, Xiangji Ying, Evan Mayo-Wilson. Publication of Results of Registered Trials With Published Study Protocols, 2011-2022. *JAMA Network Open*. 2024;7(1):e2350688. doi:10.1001/jamanetworkopen.2023.50688.
11. **(2023)** **Halil Kilicoglu**, Lan Jiang, Linh Hoang, Evan Mayo-Wilson, Christiaan H Vinkers, Willem M Otte. Methodology reporting improved over time in 176,469 randomized controlled trials. *Journal of Clinical Epidemiology*. 162:19-28, 2023. doi: 10.1016/j.jclinepi.2023.08.004.
12. **(2023)** Sanya B Taneja, Tiffany J Callahan, Mary F Paine, Sandra L Kane-Gill, **Halil Kilicoglu**, Marcin P Joachimiak, Richard D Boyce. Developing a Knowledge Graph for Pharmacokinetic Natural Product-Drug Interactions. *Journal of Biomedical Informatics*. 2023;140:104341. doi: doi.org/10.1016/j.jbi.2023.104341.
13. **(2023)** Shuang Wang, **Halil Kilicoglu**, Jian Du. A comment-driven evidence appraisal approach to promoting research findings into practice when only uncertain evidence is available. *Health Research Policy and Systems*. 21 (1): 25, 2023. doi: 10.1186/s12961-023-00969-9.
14. **(2022)** Dalton Schutte, Jake Vasilakes, Anu Bompelli, Yuqi Zhou, Marcelo Fiszman, Hua Xu, **Halil Kilicoglu**, Jeffrey R Bishop, Terrence Adam, Rui Zhang. Discovering novel drug-supplement interactions using SuppKG generated from the biomedical literature. *Journal of Biomedical Informatics*. 131:104120, 2022. doi: 10.1016/j.jbi.2022.104120.
15. **(2022)** Robert Schulz, Adrian Barnett, René Bernard, Nicholas JL Brown, Jennifer A Byrne, Peter Eckmann, Małgorzata A Gazda, **Halil Kilicoglu**, Eric M Prager, Maia Salholz-Hillel, Gerben ter Riet, Timothy Vines, Colby J Vorland, Han Zhuang, Anita Bandrowski, and Tracey L Weissgerber. Is the future of peer review automated?. *BMC Research Notes*, 15(1):1-5, 2022. doi: 10.1186/s13104-022-06080-6.
16. **(2021)** **Halil Kilicoglu**, Graciela Rosemblat, Linh Hoang, Sahil Wadhwa, Zeshan Peng, Mario Malički, Jodi Schneider, and Gerben ter Riet. Toward Assessing Clinical Trial Publications for Reporting Transparency. *Journal of Biomedical Informatics*, 116: 103717, 2021. doi: 10.1016/j.jbi.2021.103717.

17. (2021) Tracey Weissgerber, Nico Riedel, **Halil Kilicoglu**, Cyril Labbé, Peter Eckmann, Gerben ter Riet, Jennifer Byrne, Guillaume Cabanac, Amanda Capes-Davis, Bertrand Favier, Shyam Saladi, Peter Grabitz, Alexandra Bannach-Brown, Robert Schulz, Sarah McCann, Rene Bernard, and Anita Bandrowski. Automated screening of COVID-19 preprints: Can we help authors to improve transparency & reproducibility? *Nature Medicine*, 27(1):6-7, 2021. doi: 10.1038/s41591-020-01203-7.
18. (2021) Tung Tran, Ramakanth Kavuluru, and **Halil Kilicoglu**. Attention-Gated Graph Convolutions for Extracting Drug Interaction Information from Drug Labels. *ACM Transactions on Computing for Healthcare*, 2(2):1-9, 2021. doi: 10.1145/3423209.
19. (2021) Rui Zhang, Dimitar Hristovski, Dalton Schutte, Andrej Kastrin, Marcelo Fiszman, and **Halil Kilicoglu**. Drug Repurposing for COVID-19 via Knowledge Graph Completion. *Journal of Biomedical Informatics*, 115:103696, 2021. doi: 10.1016/j.jbi.2021.103696.
20. (2020) **Halil Kilicoglu**, Graciela Rosemblat, Marcelo Fiszman, and Dongwook Shin. Broad-coverage biomedical relation extraction with SemRep. *BMC Bioinformatics*, 21:188. doi: 10.1186/s12859-020-3517-7.
21. (2019) Caroline J. Zeiss, Dongwook Shin, Brent Vander Wyk, Amanda P. Beck, Natalie Zatz, Charles A. Sneiderman, and **Halil Kilicoglu**. Menagerie: A text-mining tool to support animal-human translation in neurodegeneration research. *PLoS ONE*, 14(12):e0226176. doi: 10.1371/journal.pone.0226176.
22. (2019) Graciela Rosemblat, Marcelo Fiszman, Dongwook Shin, and **Halil Kilicoglu**. Toward A Characterization of Apparent Contradictions in Biomedical Literature Using Context Analysis. *Journal of Biomedical Informatics*, 98:103275. doi: 10.1016/j.jbi.2019.103275. **Best Paper Selection, IMIA Yearbook of Medical Informatics, Section 10: Natural Language Processing**
23. (2019) Kerem Keserlioglu, **Halil Kilicoglu**, and Gerben ter Riet. Impact of peer review on discussion of study limitations and strength of claims in randomized trial reports: a before and after study. *Research Integrity and Peer Review*, 4(19):1-8. doi: 10.1186/s41073-019-0078-2.
24. (2019) **Halil Kilicoglu**, Zeshan Peng, Shabnam Tafreshi, Tung Tran, Graciela Rosemblat, and Jodi Schneider. Confirm or Refute?: A Comparative Study on Citation Sentiment Classification in Clinical Research Publications. *Journal of Biomedical Informatics*, 91:103123. doi: 10.1016/j.jbi.2019.103123.
25. (2018) Thomas C. Rindflesch, Catherine L. Blake, Michael J. Cairelli, Marcelo Fiszman, Caroline J. Zeiss, and **Halil Kilicoglu**. Investigating the role of interleukin-1 beta and glutamate in inflammatory bowel disease and epilepsy using discovery browsing. *Journal of Biomedical Semantics*, 9:25, doi: 10.1186/s13326-018-0192-y.
26. (2018) Lou Ann Scarton, Liqin Wang, **Halil Kilicoglu**, Margaret Jahries, and Guilherme del Fiol. Expanding vocabularies for complementary and alternative medicine therapies. *International Journal of Medical Informatics*, 121:64-74. doi: 10.1016/j.ijmedinf.2018.11.009
27. (2018) **Halil Kilicoglu**, Graciela Rosemblat, Mario Malički, and Gerben ter Riet. Automatic recognition of self-acknowledged limitations in clinical research literature. *JAMIA*, 25(7): 855-861. doi: 10.1093/jamia/ocy038.
28. (2018) **Halil Kilicoglu**, Asma Ben Abacha, Yassine Mrabet, Sonya E. Shooshan, Laritza Rodriguez, Kate Masterton, and Dina Demner-Fushman. Semantic annotation of consumer health questions. *BMC Bioinformatics*, 19:34. doi: 10.1186/s12859-018-2045-1.

29. (2018) **Halil Kilicoglu**. Biomedical text mining for research rigor and integrity: tasks, challenges, directions. *Briefings in Bioinformatics*, bbsx057. doi: 10.1093/bib/bbx057.
30. (2017) **Halil Kilicoglu**, Graciela Rosemblat, and Thomas C. Rindflesch. Assigning factuality values to semantic relations extracted from biomedical research literature. *PLoS ONE*, 12(7): e0179926. doi: 10.1371/journal.pone.0179926.
31. (2017) Thomas C. Rindflesch, Catherine Blake, Marcelo Fiszman, **Halil Kilicoglu**, Graciela Rosemblat, Jodi Schneider, and Caroline Zeiss. Informatics Support for Basic Research in Biomedicine. *The ILAR Journal*, 58 (1): 80–89. doi:10.1093/ilar/ilx004.
32. (2017) Ariel Deardorff, Kate Masterton, Kirk Roberts, **Halil Kilicoglu**, and Dina Demner-Fushman. A protocol-driven approach to automatically finding authoritative answers to consumer health questions in online resources. *JASIS/ST*, 68(7): 1724-1736. doi: 10.1002/asi.23806.
33. (2016) **Halil Kilicoglu**, Graciela Rosemblat, Marcelo Fiszman, and Thomas C. Rindflesch. Sortal anaphora resolution to enhance relation extraction from biomedical literature. *BMC Bioinformatics*, 17(1): 163. doi: 10.1186/s12859-016-1009-6.
34. (2016) **Halil Kilicoglu** and Dina Demner-Fushman. Bio-SCoRes: A Smorgasbord Architecture for Coreference Resolution in Biomedical Text. *PLoS ONE*, 11(3): e0148538. doi: 10.1371/journal.pone.0148538. **Best Paper Selection, IMIA Yearbook of Medical Informatics, Section 10: Natural Language Processing**
35. (2015) Kirk Roberts, Sonya E. Shooshan, Laritza Rodriguez, Swapna Abhyankar, **Halil Kilicoglu**, and Dina Demner-Fushman. The role of fine-grained annotations in supervised recognition of risk factors for heart disease from EHRs. *Journal of Biomedical Informatics*, 58(Suppl): S111-119. doi: 10.1016/j.jbi.2015.06.010.
36. (2014) Rui Zhang, Michael J. Cairelli, Marcelo Fiszman, Graciela Rosemblat, **Halil Kilicoglu**, Thomas C. Rindflesch, Serguei V. Pakhomov, and Genevieve B. Melton. Using semantic predications to uncover drug-drug interactions in clinical data. *Journal of Biomedical Informatics*, 49: 134-147. doi: 10.1016/j.jbi.2014.01.004.
37. (2014) Guocai Chen, Michael J. Cairelli, **Halil Kilicoglu**, Dongwook Shin, and Thomas C. Rindflesch. Augmenting Microarray Data with Literature-Based Knowledge to Enhance Gene Regulatory Network Inference. *PLoS Computational Biology*, 10(6): e1003666. doi: 10.1371/journal.pcbi.1003666.
38. (2014) Rui Zhang, Michael J. Cairelli, Marcelo Fiszman, **Halil Kilicoglu**, Thomas C. Rindflesch, Serguei V. Pakhomov, and Genevieve B. Melton. Exploiting Literature-derived Knowledge and Semantics to Identify Potential Prostate Cancer Drugs. *Cancer Informatics*, 13(Suppl 1): 103-111. doi: 10.1016/j.jbi.2014.01.004.
39. (2013) Graciela Rosemblat, Dongwook Shin, **Halil Kilicoglu**, Charles Sneiderman, and Thomas C. Rindflesch. A methodology for extending domain coverage in SemRep. *Journal of Biomedical Informatics*, 46(6): 1099-1107. doi: 10.1016/j.jbi.2013.08.005.
40. (2012) **Halil Kilicoglu**, Dongwook Shin, Marcelo Fiszman, Graciela Rosemblat, and Thomas C. Rindflesch. SemMedDB: a PubMed-scale repository of biomedical semantic predications. *Bioinformatics*, 28(23): 3158-3160. doi: 10.1093/bioinformatics/bts591.
41. (2012) **Halil Kilicoglu** and Sabine Bergler. Biological event composition. *BMC Bioinformatics*, 13(Suppl 11): S7. doi: 10.1186/1471-2105-13-S11-S7.

42. (2011) **Halil Kilicoglu**, Graciela Rosemblat, Marcelo Fiszman, and Thomas C. Rindflesch. Constructing a semantic predication gold standard from the biomedical literature. *BMC Bioinformatics*, 12:486. doi: 10.1186/1471-2105-12-486.
43. (2011) Yoshinobu Kano, Jari Björne, Filip Ginter, Tapio Salakoski, Ekaterina Buyko, Udo Hahn, K. Bretonnel Cohen, Karin Verspoor, Christophe Roeder, Lawrence E. Hunter, **Halil Kilicoglu**, Sabine Bergler, Sofie Van Landeghem, Thomas Van Parys, Yves Van de Peer, Makoto Miwa, Sophia Ananiadou, Mariana Neves, Alberto Pascual-Montano, Arzucan Özgür, Dragomir R Radev, Sebastian Riedel, Rune Sætre, Hong-Woo Chun, Jin-Dong Kim, Sampo Pyysalo, Tomoko Ohta and Jun'ichi Tsujii. U-Compare bio-event meta service: compatible BioNLP event extraction services. *BMC Bioinformatics*, 12:481. doi: 10.1186/1471-2105-12-481.
44. (2011) **Halil Kilicoglu** and Sabine Bergler. Effective bio-event extraction using trigger words and syntactic dependencies. *Computational Intelligence*, 27(4): 583-609. doi: 10.1111/j.1467-8640.2011.00401.x.
45. (2011) Thomas C. Rindflesch, **Halil Kilicoglu**, Marcelo Fiszman, Graciela Rosemblat, and Dongwook Shin. Semantic MEDLINE: An advanced information management application for biomedicine. *Information Services & Use*. 31(1-2): 15-21. doi: 10.3233/ISU-2011-0627.
46. (2010) Alla Keselman, Graciela Rosemblat, **Halil Kilicoglu**, Marcelo Fiszman, Honglan Jin, Dongwook Shin, and Thomas C. Rindflesch. Adapting semantic natural language processing technology to address information overload in influenza epidemic management. *JASIST*. 61(12): 2531-2543. doi: 10.1002/asi.21414.
47. (2009) Marcelo Fiszman, Dina Demner-Fushman, **Halil Kilicoglu**, and Thomas C. Rindflesch. Automatic summarization of MEDLINE citations for evidence-based medical treatment: A topic-oriented evaluation. *Journal of Biomedical Informatics*. 42(5): 801-813. Doi: 10.1016/j.jbi.2008.10.002.
48. (2009) **Halil Kilicoglu**, Dina Demner-Fushman, Thomas C. Rindflesch, Nancy L. Wilczynski, R. Brian Haynes. Toward automatic recognition of scientifically rigorous clinical research evidence. *JAMIA*. 16(1): 25-31. doi : 10.1197/jamia.M2996.
49. (2008) **Halil Kilicoglu** and Sabine Bergler. Recognizing speculative language in biomedical research articles: a linguistically motivated perspective. *BMC Bioinformatics*. 9 (Suppl 1): S10. doi: 10.1186/1471-2105-9-S11-S10.
50. (2006) Marco Masseroli, **Halil Kilicoglu**, Francois-Michel Lang, and Thomas C. Rindflesch. Argument-predicate distance as a filter for enhancing precision in extracting predications on the genetic etiology of disease. *BMC Bioinformatics*. 7(1): 291. doi: 10.1186/1471-2105-7-291
51. (2006) Susanne M. Humphrey, Willie J. Rogers, **Halil Kilicoglu**, Dina Demner-Fushman, and Thomas C. Rindflesch. Word sense disambiguation by selecting the best semantic type based on Journal Descriptor Indexing: Preliminary experiment. *JASIST*. 57(1):96-113. doi: 10.1002/asi.20257.

Peer-Reviewed Conference/Workshop Publications in Proceedings

52. (2024) Joe D Menke, **Halil Kilicoglu**, and Neil Smalheiser. Publication Type Tagging using Transformer Models and Multi-Label Classification. *AMIA Annual Symposium 2024* (accepted).

53. **(2024)** Zhiwen You, Shruthan Radhakrishna, Shufan Ming, and **Halil Kilicoglu**. UIUC_BioNLP at BioLaySumm: An Extract-then-Summarize Approach Augmented with Wikipedia Knowledge for Biomedical Lay Summarization. *BioNLP 2024 Workshop* (accepted).
54. **(2023)** Sullam Jeoung, Jana Diesner, and **Halil Kilicoglu**. Examining the Causal Effect of First Names on Language Models: The Case of Social Commonsense Reasoning. In *Proceedings of the 3rd Workshop on Trustworthy Natural Language Processing (TrustNLP 2023)*, pages 61–72, Toronto, Canada. Association for Computational Linguistics. **Best Paper Award**
55. **(2023)** Yiren Liu and **Halil Kilicoglu**. Commonsense-Aware Prompting for Controllable Empathetic Dialogue Generation. *AAAI'23 Workshop on Knowledge Augmented Methods for NLP*.
56. **(2023)** Yongkang Xiao, Yu Hou, Huixue Zhou, Gayo Diallo, Marcelo Fiszman, Julia Wolfson, **Halil Kilicoglu**, You Chen, Hua Xu, William G. Mantyh and Rui Zhang. Repurposing Drugs for Alzheimer's Diseases through Link Prediction on Biomedical Literature. *IEEE ICHI 2023 Workshop on AI for Pharmaceutical Discovery and Development (ALPHA 2023)*.
57. **(2022)** Linh Hoang, Yingjun Guan, and **Halil Kilicoglu**. Methodological information extraction from randomized controlled trial publications. *AMIA Annual Symposium 2022*, Washington, DC, 2022. American Medical Informatics Association.
58. **(2022)** Linh Hoang, Lan Jiang, and **Halil Kilicoglu**. Investigating the impact of weakly supervised data on text mining models of publication transparency: a case study on randomized controlled trials, *AMIA Informatics Summit 2022*, pages 254-263, Chicago, IL, 2022. American Medical Informatics Association.
59. **(2021)** Haoyang Liu, M Janina Sarol, and **Halil Kilicoglu**. UIUC_BioNLP at SemEval-2021 Task 11: a cascade of neural models for structuring scholarly NLP contributions. In *Proceedings of the 15th International Workshop on Semantic Evaluation (SemEval-2021)*, pages 377–386, Online. Association for Computational Linguistics. doi: 20.18653/v1/2021.semeval-1.45. **Best System Paper Award**
60. **(2019)** Mehmet G. Bakal, **Halil Kilicoglu**, and Ramakanth Kavuluru. Non-Negative Matrix Factorization for Drug Repositioning: Experiments with the repoDB Dataset. *AMIA Annual Symposium 2019*, pages 238-247, Washington, DC, 2022. American Medical Informatics Association.
61. **(2017)** Yassine Mrabet, **Halil Kilicoglu**, and Dina Demner-Fushman. TextFlow: A text similarity measure based on continuous sequences. In *Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pages 763-772, Vancouver, Canada, 2017. Association for Computational Linguistics. doi: 10.18653/v1/P17-1071.
62. **(2016)** **Halil Kilicoglu**. Inferring implicit causal relationships in biomedical literature. In *Proceedings of the 15th Workshop on Biomedical Natural Language Processing*, pages 46-55, Berlin, Germany, 2016. Association for Computational Linguistics. doi: 10.18653/v1/W16-2906.
63. **(2016)** Yassine Mrabet, **Halil Kilicoglu**, Kirk Roberts, and Dina Demner-Fushman. Combining open-domain and biomedical knowledge for topic recognition in consumer health questions. In *AMIA Annual Symposium Proceedings*, volume 2016, pages 914-923, Chicago, IL, 2016. American Medical Informatics Association. **Distinguished Paper Award**
64. **(2016)** Yassine Mrabet, Pavlos Vougiouklis, **Halil Kilicoglu**, Claire Gardent, Dina Demner-Fushman, Jonathon Hare, and Elena Simperl. Aligning texts and knowledge bases with

- semantic sentence simplification. In *Proceedings of the 2nd International Workshop on Natural Language Generation and the Semantic Web (WebNLG 2016)*, pages 29-36, Edinburgh, Scotland, 2016. Association for Computational Linguistics.
65. **(2016)** Yassine Mrabet, **Halil Kilicoglu**, and Dina Demner-Fushman. Unsupervised ranking of knowledge bases for named entity recognition. In *Proceedings of the Twenty-Second European Conference on Artificial Intelligence (ECAI'16)*, page 1248-1255, The Hague, The Netherlands, 2016. IOS Press. doi: 10.3233/978-1-61499-672-9-1248.
 66. **(2016)** **Halil Kilicoglu**, Asma Ben Abacha, Yassine Mrabet, Kirk Roberts, Laritza Rodriguez, Sonya Shooshan, and Dina Demner-Fushman. Annotating named entities in consumer health questions. In *Proceedings of the Tenth International Conference on Language Resources and Evaluation (LREC'16)*, pages 3325-3332, Portorož, Slovenia, 2016. European Language Resources Association.
 67. **(2015)** **Halil Kilicoglu**, Graciela Rosembat, Michael Cairelli, and Thomas C Rindflesch. A compositional interpretation of biomedical event factuality. In *Proceedings of the Second Workshop on Extra-Propositional Aspects of Meaning in Computational Semantics (ExProM 2015)*, pages 22-31, Denver, CO, 2015. Association for Computational Linguistics. doi: 10.3115/v1/W15-1303.
 68. **(2015)** **Halil Kilicoglu**, Marcelo Fiszman, Kirk Roberts, and Dina Demner-Fushman. An ensemble method for spelling correction in consumer health questions. In *AMIA Annual Symposium Proceedings*, volume 2015, pages 727-736, Washington, DC, 2015. American Medical Informatics Association.
 69. **(2014)** **Halil Kilicoglu** and Dina Demner-Fushman. Coreference resolution for structured drug product labels. In *Proceedings of the 2014 Workshop on Biomedical Natural Language Processing*, pages 45-53, Baltimore, MD, 2014. Association for Computational Linguistics. doi: 10.3115/v1/W14-3407.
 70. **(2014)** Kirk Roberts, **Halil Kilicoglu**, Marcelo Fiszman, and Dina Demner-Fushman. Decomposing consumer health questions. In *Proceedings of the 2014 Workshop on Biomedical Natural Language Processing*, pages 29-37, Baltimore, MD, 2014. Association for Computational Linguistics. doi: 10.3115/v1/W14-3405.
 71. **(2014)** Kirk Roberts, **Halil Kilicoglu**, Marcelo Fiszman, and Dina Demner-Fushman. Automatically classifying question types for consumer health questions. In *AMIA Annual Symposium Proceedings*, volume 2014, pages 1018-1027, Washington, DC, 2014. American Medical Informatics Association.
 72. **(2014)** Kirk Roberts, Kate Masterton, Marcelo Fiszman, **Halil Kilicoglu**, and Dina Demner-Fushman. Annotating question decomposition on complex medical questions. In *Proceedings of the Ninth International Conference on Language Resources and Evaluation (LREC'14)*, Reykjavik, Iceland, 2014. European Language Resources Association.
 73. **(2014)** Kirk Roberts, Kate Masterton, Marcelo Fiszman, **Halil Kilicoglu**, and Dina Demner-Fushman. Annotating question types for consumer health questions. In *LREC Workshop on Building and Evaluating Resources for Health and Biomedical Text Processing (BioTxtM 2014)*, Reykjavik, Iceland, 2014. European Language Resources Association.
 74. **(2013)** **Halil Kilicoglu**, Marcelo Fiszman, and Dina Demner-Fushman. Interpreting consumer health questions: the role of anaphora and ellipsis. In *Proceedings of the 2013 Workshop on Biomedical Natural Language Processing*, pages 54-62, Sofia, Bulgaria, 2013. Association for Computational Linguistics.

75. **(2013)** Rashmi Mishra, Guilherme Del Fiol, **Halil Kilicoglu**, Siddhartha Jonnalagadda, and Marcelo Fiszman. Automatically extracting clinically useful sentences from UpToDate to support clinicians' information needs. In *AMIA Annual Symposium Proceedings*, volume 2013, pages 987-992, Washington, DC, 2013. American Medical Informatics Association. Distinguished Student Paper Nominee.
76. **(2011)** **Halil Kilicoglu** and Sabine Bergler. Adapting a general semantic interpretation approach to biological event extraction. In *Proceedings of BioNLP Shared Task 2011 Workshop*, pages 173-182, Portland, OR, 2011. Association for Computational Linguistics.
77. **(2010)** **Halil Kilicoglu**, Marcelo Fiszman, Graciela Rosembat, Sean Marimpietri, and Thomas C Rindflesch. Arguments of nominals in semantic interpretation of biomedical text. In *Proceedings of the 2010 Workshop on Biomedical Natural Language Processing*, pages 46-54, Uppsala, Sweden, 2010. Association for Computational Linguistics.
78. **(2010)** **Halil Kilicoglu** and Sabine Bergler. A high-precision approach to detecting hedges and their scopes. In *Proceedings of the Fourteenth Conference on Computational Natural Language Learning (CONLL 2010)*, pages 70-77, Uppsala, Sweden, 2010. Association for Computational Linguistics.
79. **(2010)** Marcelo Fiszman, Bruce E Bray, Dongwook Shin, **Halil Kilicoglu**, Glen C Bennett, Olivier Bodenreider, and Thomas C Rindflesch. Combining relevance assignment with quality of the evidence to support guideline development. In *Proceedings of MEDINFO 2010*, page 709-713, Cape Town, South Africa, 2010. International Medical Informatics Association.
80. **(2009)** **Halil Kilicoglu** and Sabine Bergler. Syntactic dependency based heuristics for biological event extraction. In *Proceedings of Natural Language Processing in Biomedicine (BioNLP) NAACL 2009 Workshop*, pages 119-127, Boulder, CO, 2009. Association for Computational Linguistics.
81. **(2008)** **Halil Kilicoglu**, Marcelo Fiszman, Alejandro Rodriguez, Dongwook Shin, Anna Ripple, and Thomas C Rindflesch. Semantic MEDLINE: a web application to manage the results of PubMed searches. In *Proceedings of the Third International Symposium on Semantic Mining in Biomedicine (SMBM 2008)*, pages 69-76, Turku, Finland, 2008.
82. **(2008)** **Halil Kilicoglu** and Sabine Bergler. Recognizing speculative language in biomedical research articles: A linguistically motivated perspective. In *Proceedings of the Workshop on Current Trends in Biomedical Natural Language Processing*, pages 46-53, Columbus, OH, 2008. Association for Computational Linguistics.
83. **(2007)** Caroline B Ahlers, Dimitar Hristovski, **Halil Kilicoglu**, and Thomas C Rindflesch. Using the literature-based discovery paradigm to investigate drug mechanisms. In *AMIA Annual Symposium Proceedings*, volume 2007, pages 6-10, Chicago, IL, 2007. American Medical Informatics Association. Distinguished Paper Award
84. **(2006)** Marcelo Fiszman, Thomas C Rindflesch, and **Halil Kilicoglu**. Summarizing drug information in Medline citations. In *AMIA Annual Symposium Proceedings*, volume 2006, pages 254-258, Washington, DC, 2006. American Medical Informatics Association.
85. **(2005)** Thomas C Rindflesch, Serguei V Pakhomov, Marcelo Fiszman, **Halil Kilicoglu**, and Vincent R Sanchez. Medical facts to support inferencing in natural language processing. In *AMIA Annual Symposium Proceedings*, volume 2005, pages 634-638, Washington, DC, 2005. American Medical Informatics Association.
86. **(2004)** Marcelo Fiszman, Thomas C. Rindflesch, and **Halil Kilicoglu**. Abstraction summarization for managing the biomedical research literature. In *Proceedings of the HLT-*

NAACL Workshop on Computational Lexical Semantics, pages 76-83, Boston, MA, 2004. Association for Computational Linguistics.

87. **(2004)** Bisharah Libbus, **Halil Kilicoglu**, Thomas C Rindflesch, James G Mork, and Alan R Aronson. Using natural language processing, LocusLink and the Gene Ontology to compare OMIM to MEDLINE. In *HLT-NAACL 2004 Workshop: Linking Biological Literature, Ontologies and Databases*, pages 69-76, Boston, MA, 2004. Association for Computational Linguistics.
88. **(2004)** Marcelo Fiszman, Thomas C Rindflesch, and **Halil Kilicoglu**. Summarization of an online medical encyclopedia. In *Proceedings of MEDINFO 2004*, pages 506-510, San Francisco, CA, 2004. IOS Press.
89. **(2003)** Marcelo Fiszman, Thomas C Rindflesch, and **Halil Kilicoglu**. Integrating a hypernymic proposition interpreter into a semantic processor for biomedical texts. In *AMIA Annual Symposium Proceedings*, pages 239-243, Washington, DC, 2003. American Medical Informatics Association.
90. **(2003)** Thomas C Rindflesch, Bisharah Libbus, Dimitar Hristovski, Alan R Aronson, and **Halil Kilicoglu**. Semantic relations asserting the etiology of genetic diseases. In *AMIA Annual Symposium Proceedings*, pages 554-558, Washington, DC, 2003. American Medical Informatics Association.

Shared Task Papers

91. **(2023)** M. Janina Sarol, Gibong Hong, and **Halil Kilicoglu**. UIUC-BioNLP @ BioCreative VIII BioRED Track. *BioCreative VIII Shared Task on Biomedical Relation Extraction*.
92. **(2018)** Tung Tran, Ramakanth Kavuluru, and **Halil Kilicoglu**. A Multi-task Learning Framework for Extracting Drugs and Their Interactions from Drug Labels. *Text Analysis Conference (TAC) Shared Task on Drug-Drug Interactions*, Gaithersburg, MD.
93. **(2015)** **Halil Kilicoglu** and Willie J. Rogers. Hybrid System for Extracting Chemical-Disease Relationships from Scientific Literature. *BioCreative V Shared Task on Chemical-Disease Relation Extraction*, Eugene, OR.
94. **(2014)** Kirk Roberts, Sonya E. Shooshan, Laritza Rodriguez, Swapna Abhyankar, **Halil Kilicoglu**, and Dina Demner-Fushman. Machine Learning Methods for Detecting Risk Factors for Heart Disease in EHRs. *i2b2/UTHealth 2014 Shared Task*, Washington, DC. **Top-ranked shared task system**
95. **(2012)** Sabine Rosenberg, **Halil Kilicoglu**, and Sabine Bergler. CLaC Labs Processing Modality and Negation Working Notes for QA4MRE (Question Answering for Machine Reading Evaluation) Pilot Task at CLEF 2012. *CLEF 2012*, Rome, Italy. **Top-ranked shared task system**

Abstract/Poster/Panel Presentations

96. **(2024)** M. Janina Sarol, Shufan Ming, Shruthan Radhakrishna, Yashwanth Narsupalli, Shruthan Radhakrishna, Jodi Schneider, **Halil Kilicoglu**. Towards automatic detection of citation quotation errors: An open dataset and machine learning models. *World Conference on Research Integrity (WCRI 2024)*, Athens, Greece.
97. **(2023)** Minu Mathew, Chen Wang, Luigi Marini, Lan Jiang, **Halil Kilicoglu**. RCTCheck :

Assessing Transparency and Rigor of Randomized Clinical Trials. 1st Annual Conference of the US Research Software Engineer Association (US-RSE 2023).

98. **(2022) Halil Kilicoglu**, Linh Hoang, Willem M. Otte, Christiaan H. Vinkers. A Large-Scale Analysis of Methodology Reporting in Randomized Controlled Trials according to CONSORT Guidelines. *World Conference on Research Integrity (WCRI 2022)*, Cape Town, South Africa.
99. **(2021)** Mengfei Lan and **Halil Kilicoglu**. Quality Over Quantity: Assessing the Effect of Corpus Quality and Size on Rhetorical Classification of Biomedical Abstracts. *Automatic Knowledge Base Construction Conference (AKBC 2021) SciNLP Workshop*.
100. **(2021)** Sarah Mullin, Robert McDougal, Kei-Hoi Cheung, **Halil Kilicoglu**, Amanda Beck, and Caroline Zeiss. Chemical Entity Normalization for Successful Translational Development of Alzheimer's Disease and Dementia Therapeutics. In: *ISMB/ECCB 2021 Bio-Ontologies Workshop*; 2021.
101. **(2020) Halil Kilicoglu**, Linh Hoang, and Sahil Wadhwa. Identifying sample size characteristics in clinical trial publications. In *AMIA Annual Symposium Proceedings*, volume 2020, page 1809, 2020. American Medical Informatics Association.
102. **(2020)** Peter Eckmann, Nico Riedel, **Halil Kilicoglu**, Cyril Labbe, Peter Eckmann, Gerben ter Riet, Jennifer Byrne, Guillaume Cabanac, Amanda Capes-Davis, Bertrand Favier, Shyam Saladi, Peter Grabitz, Alexandra Bannach-Brown, Robert Schulz, Sarah McCann, Rene Bernard, Anita Bandrowski, and Tracey Weissgerber. Automatic Screening of COVID-19 preprints: Can we help authors to improve transparency and reproducibility? *AIMOS (Association for Interdisciplinary Meta-research and Open Science) 2020 Annual Meeting*.
103. **(2019)** Dimitar Hristovski, Andrej Kastrin, and **Halil Kilicoglu**. SemMedDB-neo4j: a graph database of biomedical semantic relations. In *AMIA Annual Symposium Proceedings*, volume 2019, page 1609, Washington, DC, 2019. American Medical Informatics Association.
104. **(2019) Halil Kilicoglu**, Graciela Rosembat, Zeshan Peng, Mario Malički, Jodi Schneider, and Gerben ter Riet. Annotating Clinical Trial Publications to Assess CONSORT Adherence: A Feasibility Study. *World Conference on Research Integrity (WCRI 2019)*, Hong Kong, China.
105. **(2018) Halil Kilicoglu**, Aurélie Névél, Timothy W Clark, Hua Xu, and Neil Smalheiser. Methods and tools to enhance rigor and reproducibility of biomedical research. In *AMIA Annual Symposium Proceedings*, volume 2018, pages 67-69, San Francisco, CA, 2018. American Medical Informatics Association.
106. **(2018)** Dongwook Shin and **Halil Kilicoglu**. Linking section labels with biomedical relations in SemMedDB. In *AMIA Annual Symposium Proceedings*, volume 2018, page 2148, San Francisco, CA, 2018. American Medical Informatics Association.
107. **(2018)** Graciela Rosembat, Dongwook Shin, and **Halil Kilicoglu**. Enhancing identification of relation arguments in SemRep. In *AMIA Annual Symposium Proceedings*, volume 2018, page 2129, San Francisco, CA, 2018. American Medical Informatics Association.
108. **(2018)** Jodi Schneider, Graciela Rosembat, Shabnam Tafreshi, and **Halil Kilicoglu**. Stakeholder-focused rhetorical moves: How to address multiple audiences when reporting

medical Randomized Controlled Trials. *Argumentation & Language Conference (ARGAGE)*, Lugano, Switzerland.

109. **(2017)** Gerben ter Riet, Sufia Amini, Lotty Hooft, and **Halil Kilicoglu**. Does Weaker Research Make Weaker Claims?: Towards Automatic Detection of Linguistic Hedging. *PUBMET 2017 Conference on Scholarly Publishing in the Context of Open Science*, Split, Croatia.
110. **(2017)** **Halil Kilicoglu** and Roser Morante-Vallejo. Ensuring Adherence to Reporting Guidelines using Text Mining Techniques. *World Conference on Research Integrity (WCRI 2017) workshop on the role of text and image processing in fostering responsible research practices*, Amsterdam, The Netherlands.
111. **(2017)** Jodi Schneider, Graciela Rosembat, Shabnam Tafreshi, and **Halil Kilicoglu**. Rhetorical moves and audience considerations in the discussion sections of Randomized Controlled Trials of health interventions. *European Conference on Argumentation: Argumentation and Inference (ECA 2017)*, Fribourg, Switzerland.
112. **(2015)** Sufia Amini, **Halil Kilicoglu**, Lotty Hooft, and Gerben ter Riet. Are we expressing uncertainty of our claims enough? Towards automatic detection of overstatement of claims. *World Conference on Research Integrity (WCRI 2015)*, Rio de Janeiro, Brazil.
113. **(2004)** Michele Tringali, Thomas C Rindflesch, **Halil Kilicoglu**, Marcelo Fiszman, and Olivier Bodenreider. Strategies for mapping concepts in gastrointestinal endoscopy reports to the UMLS Metathesaurus. In *Proceedings of MEDINFO 2004*, page 1885, San Francisco, CA, 2004. IOS Press.
114. **(2004)** Marcelo Fiszman, Thomas C. Rindflesch, and **Halil Kilicoglu**. Summarization of an online medical encyclopedia. *MEDINFO 2004*, San Francisco, CA.
115. **(2004)** Powell J Bernhardt, Thomas C Rindflesch, **Halil Kilicoglu**, and Michele Tringali. Identifying anatomical concepts in biomedical text for automatic selection of images. In *Proceedings of MEDINFO 2004*, page 1521, San Francisco, CA, 2004. IOS Press.
116. **(2004)** Gondy Leroy, Thomas C Rindflesch, Bisharah Libbus, **Halil Kilicoglu**, and Hsinchun Chen. A syntactic parser with semantic filtering for biomedical text. In *Pacific Symposium on Biocomputing (PSB)*, Hawai'i, HI, 2004.
117. **(2003)** Marcelo Fiszman, Thomas C Rindflesch, and **Halil Kilicoglu**. Interpreting hypernymic propositions in an online medical encyclopedia. In *AMIA Annual Symposium Proceedings*, volume 2003, page 840, Washington, DC, 2003. American Medical Informatics Association.

SOFTWARE

- SemRep: Semantic relation extraction from biomedical literature
[\[https://semrep.nlm.nih.gov\]](https://semrep.nlm.nih.gov)
- Bio-SCoRes: Coreference resolution for biomedical text and factuality assessment of biomedical semantic relations [\[https://github.com/kilicogluh/Bio-SCoRes\]](https://github.com/kilicogluh/Bio-SCoRes)
- clinical-citation-sentiment: Sentiment analysis for biomedical citations
[\[https://github.com/kilicogluh/clinical-citation-sentiment\]](https://github.com/kilicogluh/clinical-citation-sentiment)
- limitation-recognizer: Recognizing self-acknowledged limitations in clinical publication
[\[https://github.com/kilicogluh/limitation-recognizer\]](https://github.com/kilicogluh/limitation-recognizer)

RESOURCES

- SemMedDB: PubMed-scale repository of biomedical semantic relations [<https://skr3.nlm.nih.gov/SemMedDB>]
- SemMedDB-neo4j: Graph database of biomedical semantic relations [<http://lbd.mf.uni-lj.si/semmeddb-neo4j>]
- Semantic MEDLINE: Web platform for biomedical knowledge management and literature-based discovery [<https://skr3.nlm.nih.gov/SemMed>]

DATASETS

- Citation Integrity Dataset: Citations to highly-cited biomedical publications annotated for citation accuracy [<https://github.com/ScienceNLP-Lab/Citation-Integrity/>]
- CONSORT-TM: Randomized controlled trial articles annotated for reporting transparency [<https://github.com/kilicogluh/CONSORT-TM>]
- Self-acknowledged Limitation Dataset: Sentences from clinical research articles labeled with whether they express self-acknowledged limitations [<https://doi.org/10.5061/dryad.06ds7>]
- CHQA Corpus: Consumer health questions annotated with semantic layers [<https://bionlp.nlm.nih.gov/CHQACollections/CHQA-Corpus-1.0.zip>]
- CHQA Named Entity Dataset: Consumer health questions annotated with named entities [<https://lhncbc.nlm.nih.gov/project/consumer-health-question-answering>]
- CHQA Spelling Error Dataset: Consumer health questions annotated with spelling errors and their corrections [<https://lhncbc.nlm.nih.gov/project/consumer-health-question-answering>]
- SemRep Factuality Dataset: Biomedical semantic relations labeled with their certainty level (Fact, Probable, Doubtful, etc.) [<https://skr3.nlm.nih.gov/Factuality/>]
- SemRep Sortal Anaphora Dataset: PubMed abstracts annotated with anaphora relations indicated by noun phrases [<https://skr3.nlm.nih.gov/SortalAnaphora/>]
- SPL Coreference Dataset: Structured drug product labels annotated with coreference relations [<https://github.com/kilicogluh/Bio-SCoRes/tree/master/DATA/SPL>]
- SemRep Gold Standard Annotation Dataset: PubMed sentences annotated with biomedical semantic relations [<https://semrep.nlm.nih.gov/GoldStandard.html>]

INVITED TALKS

- **(2023)** Inaccurate citation, citation cartels, fake citations, citation of retracted papers: why research integrity needs citation integrity. Scholars, Educators, and Administrators Fostering Research Integrity (SEAFRI) Community of Practice Lecture Series. Online Ethics Center (Virtual).
- **(2022)** Mining the Scientific Literature to Support Personalized Nutrition Applications.

Personalized Nutrition Innovation Day. University of Illinois, Champaign, IL.

- **(2022)** Biomedical Literature Mining for Knowledge Discovery and Hypothesis Generation, University of Pittsburgh Department of Biomedical Informatics, Symbolic AI and Knowledge Graphs Seminar (Virtual).
- **(2021)** Natural Language Processing to Assess Rigor and Transparency of Biomedical Publications. University of Texas San Antonio, Cyber Center for Security and Analytics (Virtual).
- **(2021)** Automated Methods to Assess Rigor and Transparency of Biomedical Publications. University of Illinois Chicago Virtual Symposium on Research Reproducibility: Engaging across Disciplines.
- **(2020)** Promoting Transparency in Biomedical Publications using Natural Language Processing. University of Kentucky, Institute for Biomedical Informatics, Lexington, KY.
- **(2019)** Natural Language Processing to Promote Transparency in Clinical Publications. Symposium on Meta-research for Transforming Clinical Research, Paris, France.
- **(2019)** Toward More Transparent Biomedical Publications: A Case for Natural Language Processing. Elsevier Labs Online Lecture.
- **(2018)** Semantic MEDLINE: Knowledge Discovery and Hypothesis Generation from Biomedical Research Literature. GeoSemantics Symposium, Bethesda, MD.
- **(2017)** Knowledge Discovery and Hypothesis Generation through Semantic Processing of Biomedical Research Literature. Joint GW Children's National Informatics Seminar Series, George Washington University, Washington, DC.
- **(2016)** Can Natural Language Processing Help in Fostering Responsible Research Practices? University of Illinois, Center for Informatics Research in Science and Scholarship (CIRSS), Champaign, IL.
- **(2016)** Advances in Deep Semantic Representation and Parsing. University of Illinois, School of Information Sciences, Conceptual Foundations Research Group, Champaign, IL.
- **(2014)** Towards Biomedical Text Understanding: A Linguistic Perspective. Virginia Commonwealth University, Department of Computer Science, Richmond, VA.

GUEST LECTURES

- **(2024)** Citation Integrity. IE498 Responsible Conduct in Research Guest Lecture.
- **(2024)** Citation Integrity. University Library Savvy Researcher Workshop.
- **(2022)** Commonsense Knowledge Representation and Reasoning. Conceptual Foundations Research Group Lecture.
- **(2022)** Natural Language Processing to assess rigor and transparency of biomedical publications. Doctoral Seminar.
- **(2022)** Biomedical Literature Mining and Knowledge Discovery and Hypothesis Generation. Institute for Genomic Biology, Environmental Impact on Reproductive Health Group Lecture.

- **(2021)** COVID-19 Drug Repurposing using Knowledge Graphs. Conceptual Foundations Research Group Lecture.
- **(2021)** Biomedical Literature Mining for Knowledge Discovery and Hypothesis Generation. IS 505 Information Organization and Access Guest Lecture.
- **(2019)** Natural Language Processing in support of Meta-research Investigations: Two Case Studies. Center for Informatics Research in Science and Scholarship (CIRSS) Lecture.
- **(2019)** Promoting Transparency in Biomedical Publications using Natural Language Processing. School of Information Sciences, Doctoral Seminar.
- **(2019)** Relationship Extraction from Biomedical Research Literature and Its Applications. School of Information Sciences, Conceptual Foundations Research Group Lecture.
- **(2017-2019)** Semantic Processing for Managing the Biomedical Research Literature. Lister Hill National Center for Biomedical Communications Trainee Seminar.
- **(2015)** Automatic Classification and Answering of NLM Customers' Requests. Lister Hill National Center for Biomedical Communications Lecture.

FUNDING

- NIH/NLM R01 award for the project Automated Indexing for Publication Types and Study Designs. Role: Co-I, August 2, 2023 – July 31, 2026. \$947,925.
- NIH/NLM R01 award for the project *Computational Methods, Resources, and Tools to Assess Transparency and Rigor of Randomized Controlled Trials*. Role: PI, July 1, 2022 – March 31, 2026. \$1,328,502.
- Department of Health and Human Services, Office of Research Integrity award for the project *Natural Language Processing to Assess and Improve Citation Integrity in Biomedical Publications*. Role: PI. June 15, 2022 – June 14, 2024. \$300,000.
- CSL/Behring LLC for the project *Literature Search on α -2-macroglobulin*. Role: Co-PI. May 16, 2022—September 30, 2022, \$48,488.
- University of Illinois Personalized Nutrition Initiative Seed Grant award for the project *Mining the scientific literature to support personalized nutrition applications* (2022-2024). Role: PI. \$50,000.
- University of Illinois at Urbana-Champaign Campus Research Board award for the project *Using text mining to generate limitation profiles of clinical trials* (2022). Role: PI. \$30,000.
- National Center for Supercomputing Applications (NCSA) fellowship for the project *Identifying conflicting claims in clinical literature using natural language processing and knowledge graphs* (2021-2022). Role: PI. \$25,000.
- Intramural research program of NLM/NIH for the project *Semantic Relation Extraction from Biomedical Text – Methods and Applications* (1ZIAIM010012) (2012-2019)

TEACHING

2024 Text Mining, Instructor (Spring 2024)

- *Teachers Ranked as Excellent By Their Students List*

Large Language Models, Instructor (Spring 2024)

 - *Teachers Ranked as Excellent By Their Students List*

School of Information Sciences, University of Illinois, Champaign, IL
- 2023 Text Mining, Instructor (Fall 2023)
 - *Teachers Ranked as Excellent By Their Students List*

School of Information Sciences, University of Illinois, Champaign, IL
- 2022 Information Modeling, Instructor (Spring 2022)
 - *Teachers Ranked as Excellent By Their Students List*

Information Modeling, Co-instructor (Fall 2022)

 - *Teachers Ranked as Excellent By Their Students List*

Text Mining, Instructor (Fall 2022)

School of Information Sciences, University of Illinois, Champaign, IL
- 2021 Information Modeling, Instructor (Fall 2021)
- Information Modeling, Co-instructor (Spring 2021)
- Text Mining, Instructor (Spring 2021)
 - *Teachers Ranked as Excellent By Their Students List*

School of Information Sciences, University of Illinois, Champaign, IL
- 2020 Information Modeling, Instructor (Spring 2020, Fall 2020)
- Data Mining, Instructor (Fall 2020)
 - *Teachers Ranked as Excellent By Their Students List*

School of Information Sciences, University of Illinois, Champaign, IL
- 2019 Information Modeling, Co-instructor (Fall 2019)
- School of Information Sciences, University of Illinois, Champaign, IL
- 2000 Applications Software: Instructor (Spring 2000)
- Department of Computer Science, George Washington University, Washington, DC
- 1999 Database Management Systems: Teaching Assistant (Fall 1999)
- Department of Computer Science, George Washington University, Washington, DC

MENTORSHIP

Post-doctoral researchers, co-mentor

- Guocai Chen, PhD, U.S. National Library of Medicine (2012-2013): now researcher at the University of Texas Health Science Center at Houston.
- Yassine Mrabet, PhD, U.S. National Library of Medicine (2015-2017): now Applied Scientist at Amazon.
- Jodi Schneider, PhD, U.S. National Library of Medicine (Summer 2016): now Associate Professor at the School of Information Sciences, University of Illinois Urbana-Champaign.

Doctoral Students, advisor

- Linh Hoang, PhD, School of Information Sciences, University of Illinois (mentor 2019- 2020,

advisor Fall 2020–Present): defended thesis, now Data Scientist at Gilead Pharmaceuticals.

- Yingjun Guan, PhD Candidate, School of Information Sciences, University of Illinois (co-advisor, Fall 2020–Fall 2023).
- Janina Sarol, PhD Candidate, Illinois Informatics, University of Illinois (co-advisor, Spring 2021–Present): working on dissertation.
- Lan Jiang, PhD Candidate, School of Information Sciences, University of Illinois (co-advisor, Fall 2020–Present): preparing proposal.
- Morgan Lundy, PhD Candidate, School of Information Sciences, University of Illinois (co-advisor, Fall 2020–Spring 2022).
- Haoyang Liu, PhD Candidate, Illinois Informatics, University of Illinois (advisor, Fall 2020–Fall 2022).
- Mengfei Lan, PhD Candidate, School of Information Sciences, University of Illinois (advisor, Fall 2021–Present): preparing for field exam.
- Shufan Ming, PhD Candidate, School of Information Sciences, University of Illinois (co-advisor, Fall 2022–Present): preparing for field exam.
- Gibong Hong, PhD Candidate, School of Information Sciences, University of Illinois (co-advisor, Fall 2022–Present): completing coursework.
- Joseph Menke, PhD Candidate, PhD Candidate, School of Information Sciences, University of Illinois (advisor, Fall 2023): completing coursework.
- Evan Guerra, PhD Candidate, School of Information Sciences, University of Illinois (co-advisor, Fall 2023): completing coursework.

Doctoral Students, committee member

- Ming Jiang, PhD, Illinois Informatics Institute, University of Illinois (Fall 2020–Summer 2022): now assistant professor at the School of Informatics and Computing, Indiana University-Purdue University Indianapolis (IUPUI).
- Jinlong (Kenney) Luo, PhD Candidate, School of Information Sciences, University of Illinois (Fall 2019–Fall 2021): transferred to another program.

Doctoral Students, ad hoc committee member

- Tzu-Kun (Esther) Hsiao, PhD Candidate, School of Information Sciences, University of Illinois (Fall 2020–Present): completed field exam and preparing proposal.
- Liri Fang, PhD Candidate, School of Information Sciences, University of Illinois (Fall 2021–Present): completed field exam and preparing proposal.
- Ryan Wang, PhD Candidate, School of Information Sciences, University of Illinois (Fall 2022–Present): completed field exam and preparing proposal.
- Sullam Jeoung, PhD Candidate, School of Information Sciences, University of Illinois (Fall 2022–Present): working on dissertation.
- Kanyao Han, PhD Candidate, School of Information Sciences, University of Illinois (Spring 2023–Present): working on dissertation.
- Pingjing Yang, PhD Candidate, School of Information Sciences, University of Illinois (Fall 2023–Present): working on dissertation.
- Xiujia Yang, PhD Candidate, Illinois Informatics, University of Illinois (Fall 2023–Present): working on dissertation.

Doctoral Students, external examiner

- Samuel Henry, PhD, Department of Computer Science, Virginia Commonwealth University (Spring 2018–Spring 2019): now assistant professor at the Department of Physics, Computer Science and Engineering, Christopher Newport University.

- Sanya Bathla Taneja, PhD Candidate, Intelligent Systems Program, University of Pittsburgh (Spring 2023-Present)

Doctoral Students, mentor

- Arif Canakoglu, PhD, Politecnico di Milano (Summer 2013, National Library of Medicine): now Research Scientist at Policlinico di Milano.
- Shabnam Tafreshi, PhD, George Washington University (Summer 2016, National Library of Medicine): now Assistant Research Scientist at the University of Maryland Applied Research Laboratory for Intelligence and Security.
- Tung Tran, PhD, University of Kentucky (Summer 2018, National Library of Medicine): now an AI engineer at IDS International.

Doctoral Students, project supervisor

- Lan Li, PhD Candidate, School of Information Sciences, University of Illinois (Fall 2020).
- Yiren Liu, PhD Candidate, Illinois Informatics, University of Illinois (Fall 2022).
- Nadine Veasley, PhD Candidate, Division of Nutritional Sciences, University of Illinois (Summer 2022-Spring 2023)
- Jerome You, PhD Candidate, School of Information Sciences, University of Illinois (Fall 2023-Present).

Masters Students, project supervisor

- Gaozheng Liu, MS Information Management (Fall 2019): now PhD candidate at the School of Information Sciences.
- Aditya Chanodia, MS Statistics (Summer 2020): now Data Scientist at Schlumberger.
- Sahil Wadhwa, MS Statistics (Spring-Summer 2020): now Applied Scientist at Amazon Alexa.
- Mengfei Lan, MS Information Management (Fall 2020), now PhD candidate at the School of Information Sciences.
- Yasaswi Boyapati, MS Information Management (Spring 2021): now Software Engineer at Amazon EC2.
- Isaac Joy, MS Bioinformatics (Spring 2021): now PhD candidate in the Informatics program.
- Brian Rao, MS Bioinformatics (Fall 2021-Summer 2022): supervised MS thesis.
- Shruthan Radhakrishna, MS Candidate in Computer Science (Fall 2022-Present).
- Degaulle Dai, MS Candidate in Food Science and Human Nutrition (Spring 2023)
- Sree Kodimela, MS Candidate in Bioengineering (Spring 2023)
- Veronica Hindle, MS Candidate in Food Science and Human Nutrition (Summer 2022-Spring 2023)

Undergraduate Students, project supervisor

- Wren Rudolph, BA Linguistics, College of William and Mary (Summer 2013, National Library of Medicine).
- Tory Yeonas, BS Computer Science, Vanderbilt University (Summer 2015, National Library of Medicine).
- Shinka Mori, BS Computer Science+Linguistics, University of Illinois (Spring-Fall 2020).
- Mandy Cheng, BS Biological Sciences, Binghamton University (Summer 2021-Present): supervised in the American Physician Scientists Association Virtual Summer Research Program (VSRP).
- Eugene Gurevich, BS Integrative Biology + Information Science, University of Illinois (Fall 2022-Spring 2023).
- Zoe Tsokolas, BS Cognitive Neuroscience Psychology, University of Illinois (Spring 2023).

- Sunny Lee, BS Biochemistry + Computer Science, University of Illinois (Spring 2023).

HONORS AND AWARDS

2024	BioLaySumm Shared Task on Biomedical Lay Summarization top ranked system [team supervisor]
2023	TrustNLP'2023 Best Paper Award for the paper titled <i>Examining the Causal Effect of First Names on Language Models: The Case of Social Commonsense Reasoning</i> [with Sullam Jeoung and Jana Diesner] [senior author]
2022	NIH NCATS LitCoin NLP Challenge, 3 rd place [team supervisor]
2021	SemEval 2021 Best System Paper Award for the paper titled <i>UIUC_BioNLP at SemEval-2021 Task 11: A Cascade of Neural Models for Structuring Scholarly NLP Contributions</i> [with Haoyang Liu and Janina Sarol] [senior author]
2021	SemEval 2021 top ranked system for the shared task on NLP Contribution Graphs [team supervisor]
2020-2024	List of Teachers Ranked Excellent by their Students, University of Illinois Urbana-Champaign
2020	IMIA Yearbook of Medical Informatics, Best Paper Selection (Section 10: Natural Language Processing) for the paper titled Towards a characterization of apparent contradictions in the biomedical literature using context analysis [with Graciela Rosembat, Marcelo Fiszman, and Dongwook Shin] [senior author]
2017	IMIA Yearbook of Medical Informatics, Best Paper Selection (Section 10: Natural Language Processing) for the paper titled Bio-SCoRes: A Smorgasbord Architecture for Coreference Resolution in Biomedical Text [with Dina Demner-Fushman] [first author]
2016	AMIA 2016 Distinguished Paper Award for the paper titled Combining Open-domain and Biomedical Knowledge for Topic Recognition in Consumer Health Questions [with Yassine Mrabet, Kirk Roberts, and Dina Demner-Fushman]
2014	Top ranked system at the i2b2/UTHealth shared task on identifying risk factors for heart disease
2010-2012	Partial Tuition Fee Remission Award, Concordia University, Faculty of Engineering and Computer Science
2009	Top ranked system at BioNLP shared task on Event Extraction Task 3 (speculation and negation detection), 3 rd ranked system at Task 1 (biological event extraction)
2008-2010	Graduate Fellowship Award, Concordia University
2008-2010	International Tuition Fee Remission Award, Concordia University
2008	Conference Travel Award, Concordia University
2007-2010	Graduate Research Assistantship Award, Concordia University, Faculty of Engineering and Computer Science
2007	AMIA 2007 Distinguished Paper Award for the paper titled Using the Literature-Based Discovery Paradigm to Investigate Drug Mechanisms [with Caroline Ahlers, Dimitar Hristovski, and Thomas C. Rindflesch]
2001	NASA award for Quality and Process Improvement and Customer Service Excellence for the Agency BRIO Pilot Program project

- 1999-2000 Teaching Assistantship Award, George Washington University, Department of Computer Science
- 1999 Turkish Ministry of Education Scholarship Award for Higher Education in the United States

SERVICE TO PROFESSION

Editorial Review Boards

- **(2017-2022)** Journal of American Medical Informatics Association (JAMIA), Editorial Review Board Member
- **(2020-)** BMC Bioinformatics, Associate Editor
- **(2023-)** Journal of Biomedical Informatics (JBI), Editorial Review Board Member

Guest Editorship

- **(2022-2024)** Journal of Biomedical Information, Special Issue on “Semantics-enabled Biomedical Literature Analytics”, Managing Guest Editor

Organizing Committees

- **(2023)** The 6th International Workshop on Health Natural Language Processing (HealthNLP 2023), co-located with the 11th IEEE International Conference on Healthcare Informatics (ICHI 2023)
- **(2022)** SEBILAN Workshop on Semantics-enabled Biomedical Literature Analytics, co-located with the Web Conference 2022 (WWW 2022)
- **(2017)** Workshop on The role of text and image processing in fostering responsible research practices, co-located with World Conference on Research Integrity (WCRI 2017)

Program Committees

- **(2021)** American Medical Informatics Association (AMIA) Annual Symposium [Scientific Program Committee Member]
- **(2021)** American Medical Informatics Association (AMIA) Informatics Summit [Scientific Program Committee Member]
- **(2013-2021)** Biomedical Natural Language Processing (BioNLP) Workshop, co-located with Annual Meeting of Association for Computational Linguistics (ACL)
- **(2017-2022)** Annual Meeting of Association for Computational Linguistics (ACL)
- **(2017-2018)** *SEM 2017 Joint Conference on Lexical and Computational Semantics
- **(2017-2018)** Workshop on Computational Semantics beyond Event and Roles (SemBEaR 2017), co-located with Annual Meeting of European Association for Computational Linguistics (EACL)

- **(2013-2014, 2020-2022)** IEEE International Conference on Health Informatics (ICHI)
- **(2013, 2015)** International Conference on Intelligent Systems for Molecular Biology/ European Conference on Computational Biology (ISMB/ECCB)
- **(2020)** Workshop on NLP for Medical Conversations (NLPMC)
- **(2015)** Biomedical Linked Annotation Hackathon (BLAH)
- **(2014)** International Conference on Intelligent Systems for Molecular Biology (ISMB)
- **(2014)** IEEE Workshop on Issues and Challenges in Social Computing: Social Media, Crowdsourcing, and Public Health (WICSOC)
- **(2012)** Computational Methods in Pharmacovigilance, co-located with European Medical Informatics Conference (MIE)
- **(2012)** Extra-Propositional Aspects of Meaning in Computational Semantics (ExProM 2012), co-located with ACL
- **(2012)** International Workshop on the Role of Semantic Web in Literature-Based Discovery (SWLBD 2012), co-located with IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2012)
- **(2012)** Workshop on Detecting Structure in Scholarly Discourse (DSSD 2012), co-located with ACL
- **(2012)** ACM SIGHIT International Health Informatics Symposium (IHI 2012)
- **(2010)** Workshop on Negation and Speculation in Natural Language Processing (NeSp 2010), co-located with ACL

Reviewer, Grant Proposals

- **(2024)** NIH Special Emphasis Panel for Common Fund Data Sets
- **(2023)** NIH Health Services & Systems (HSS) Study Section
- **(2023)** National Science Foundation (NSF) Using the Rules of Life to Address Societal Challenges (URoL-ASC) Program
- **(2022-2024)** NIH Clinical Data Management and Analysis (CDMA) Study Section
- **(2022)** NSF Cyberinfrastructure for Sustained Scientific Innovation (CSSI) Program
- **(2022)** European Research Council, Advanced Grant Program
- **(2022)** National Center for Supercomputing Applications (NCSA) Faculty Fellows Program
- **(2021)** Michigan Center for Diabetes Translational Research Pilot & Feasibility Study Grant Program
- **(2021)** NIH Bridge2AI Program
- **(2019)** Jump Applied Research for Community Health through Engineering and Simulation (ARCHES) Program
- **(2018-2019)** Natural Sciences and Engineering Research Council of Canada (NSERC), Discovery Grant Program

- **(2017)** Sapienza University of Rome, Research Grants Program
- **(2015)** Genome British Columbia, Strategic Opportunities Fund (SOF) Program
- **(2012)** Agency for Healthcare Research and Quality (AHRQ), Evidence-based Practice Center (EPC) Program

Reviewer, Journals

ACM Transactions on Management Information Systems • Bioinformatics • BMC Bioinformatics • BMC Medical Informatics and Decision Making • BMC Medical Research Methodology • BMC Supplements • BMJ Open • Briefings in Bioinformatics • Cancer Informatics • Computational Linguistics • Computer Speech and Language • Data and Knowledge Engineering • Database • Frontiers in Research Metrics & Analytics • Genome Medicine • IEEE Intelligent Systems • IEEE/ACM Transactions on Computational Biology and Bioinformatics • International Journal of Medical Informatics • iScience • JAMIA Open • Journal of American Medical Informatics Association • Journal of Biomedical Informatics • Journal of Biomedical Semantics • Journal of Chemical Information and Modeling • Journal of Informetrics • Journal of Medical Internet Research • Medical Decision Making • Methods of Informatics in Medicine • Natural Language Engineering • Nature Communications Biology • PeerJ • PLOS Computational Biology • PLOS One • Research Integrity and Peer Review • Scientific Reports

Reviewer, Conferences/Workshops

- **(2009-2021)** American Medical Informatics Association (AMIA) Annual Symposium
- **(2009-2021)** Biomedical Natural Language Processing (BioNLP) Workshop, co-located with Annual Meeting of Association for Computational Linguistics (ACL)
- **(2017-2023)** Annual Meeting of Association for Computational Linguistics (ACL)
- **(2017-2018)** *SEM 2017 Joint Conference on Lexical and Computational Semantics
- **(2017-2018)** Workshop on Computational Semantics beyond Event and Roles (SemBEaR 2017), co-located with Annual Meeting of European Association for Computational Linguistics (EACL)
- **(2020-2021)** The AAAI Conference on Artificial Intelligence
- **(2022)** Conference of the European Chapter of the Association for Computational Linguistics (EACL 2023)
- **(2021)** International Workshop on Data Management and Analytics for Medicine and Healthcare (DMAH)
- **(2020)** Workshop on NLP for Medical Conversations (NLPMC)
- **(2020, 2022)** Annual Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics (AACL)
- **(2019)** iConference
- **(2016)** Workshop on Building and Evaluating Resources for Biomedical Text Mining (BioTxtM 2016), co-located with International Conference on Computational Linguistics

(COLING)

- **(2015, 2018-2022)** Conference on Empirical Methods on Natural Language Processing (EMNLP)
- **(2013, 2015)** International Conference on Intelligent Systems for Molecular Biology/ European Conference on Computational Biology (ISMB/ECCB)
- **(2015)** Biomedical Linked Annotation Hackathon (BLAH)
- **(2013-2014, 2020,2022)** IEEE International Conference on Health Informatics (ICHI)
- **(2014)** International Conference on Intelligent Systems for Molecular Biology (ISMB)
- **(2014)** IEEE Workshop on Issues and Challenges in Social Computing: Social Media, Crowdsourcing, and Public Health (WICSOC)
- **(2012)** Computational Methods in Pharmacovigilance, co-located with European Medical Informatics Conference (MIE)
- **(2012)** Extra-Propositional Aspects of Meaning in Computational Semantics (ExProM 2012), co-located with ACL
- **(2012)** International Workshop on the Role of Semantic Web in Literature-Based Discovery (SWLBD 2012), co-located with IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2012)
- **(2012)** Workshop on Detecting Structure in Scholarly Discourse (DSSD 2012), co-located with ACL
- **(2012)** ACM SIGHIT International Health Informatics Symposium (IHI 2012)
- **(2011)** AMIA Summit on Translational Bioinformatics
- **(2010)** Workshop on Negation and Speculation in Natural Language Processing (NeSp 2010), co-located with ACL
- **(2010)** Language Resources and Evaluation Conference (LREC 2010)

Reviewer, Books

- **(2019)** IMIA Yearbook in Medical Informatics (selection of best papers for 2018)
- **(2018)** IMIA Yearbook in Medical Informatics (selection of best papers for 2017)
- **(2016)** IMIA Yearbook in Medical Informatics (selection of best papers for 2015)

University of Illinois

- **(2023-)** Informatics PhD Program Governing Committee
- **(2022-2023)** Health Innovation Visioning Committee Member
- **(2021-)** Personalized Nutrition Initiative Steering Committee Member

University of Illinois School of Information Sciences

- **(2023-2024)** AI Curriculum Committee Chair
- **(2021-2023)** PhD Program Committee Member
- **(2021-2023)** Research Advisory Committee Member
- **(2019-2021)** MS Information Management Program Committee Member
- **(2020-2021)** Diversity Committee Member
- **(2019-2020)** Awards and Lectures Special Committee Member
- **(2019)** HCI Curriculum Committee Member

U.S. National Library of Medicine

- **(2013-2019)** Editorial Review Committee Member
- **(2019)** Training Program Admissions Committee Member

National Institutes of Health

- **(2013-2015)** NIH Research Festival and PostBac Day Judge

Public Engagement/Outreach

- **(2022)** NIH/NINDS Catalyzing Communities of Research Rigor Champions Workshop [Contributor]
- **(2021)** Careers in Text Analytics and Information Retrieval. INFOcon 2021. [Presenter]
- **(2021)** Panel Discussion: Current State of NLP in Biomedical Research. NIH/NCATS LitCoin Stakeholder Feedback Workshop. [Panelist]
- **(2021)** ScreenIT: Can we use automated screening tools to improve reporting in scientific papers?. MetaScience 2021. [Moderator]
- **(2021)** The Everyday Lawyer's Guide to Artificial Intelligence and the Practice of Law. Discussant for the Illinois Institute of Continuing Education Technology Series [Interviewee]
- **(2020-2022)** Automated Screening Working Group (#ScreenIT) [Contributor]
- **(2017)** Life after PhD. Panelist at Mid-Atlantic Student Colloquium on Speech, Language, and Learning [Panelist]

OTHER

Professional Memberships

- American Medical Informatics Association (AMIA)
- Association for Computational Linguistics (ACL)
- Association for Computing Machinery (ACM)

- Association for Information Science and Technology (ASIS&T)

Language Proficiency

English (fluent), Turkish (native)