Gus Hahn-Powell

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https://parsertongue.org
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Employment

2019-*present* **University of Arizona**
Assistant Professor, Department of Linguistics
Faculty, Cognitive Science Graduate Interdisciplinary Program
Faculty, Computational Social Science Graduate Certificate Program

2017-*present* Lum AI
Co-founder and Solutions Architect

Education

2013-2018 **Ph.D.** in Computational Linguistics, *University of Arizona*
Dissertation: *Machine Reading for Scientific Discovery*
2012-2014 **M.S.** Human Language Technology, *University of Arizona*
2008-2010 **M.A.** Applied Linguistics, *University of Alabama*
2004-2008 **B.A.** Japanese, *University of Alabama*
2006-2007 Study abroad in Kyoto, Japan (*Ritsumeikan University*)

Publications (peer-reviewed)

Articles

2019 Robert Poole, Andrew Gnann, and Gus Hahn-Powell (2019). "Epistemic stance and the construction of knowledge in science writing: A diachronic corpus study." In: *Journal of English for Academic Purposes* 42, p. 100784. ISSN: 1475-1585. DOI: 10.1016/j.jeap.2019.100784. URL: https://parsertongue.org/preprints/construction-of-knowledge-in-science/

2018 Heather Lent, Gus Hahn-Powell, Asher Haug-Baltzell, Sean Davey, Mihai Surdeanu, and Eric Lyons (2018). "Science Citation Knowledge Extractor." In: *Frontiers in Research Metrics and Analytics*. Ed. by Neil Smalheiser. DOI: 10.3389/frma.2018.00035

Marco A. Valenzuela-Escárcega, Özgün Babur, Gus Hahn-Powell, Dane Bell, Thomas Hicks, Enrique Noriega-Atala, Xia Wang, Mihai Surdeanu, Emek Demir, and Clayton T. Morrison (2018). "Large-scale Automated Machine Reading Discovers New Cancer Driving Mechanisms." In: *Database: The Journal of Biological Databases and Curation*. DOI: 10.1093/database/bay098

2015 Daniel Fried, Peter Jansen, Gus Hahn-Powell, Mihai Surdeanu, and Peter Clark (2015). "Higher-order Lexical Semantic Models for Non-factoid Answer Reranking." In: *Transactions of the Association for Computational Linguistics* 3, pp. 197–210. ISSN: 2307-387X. URL: https://aclweb.org/anthology/Q15-1015/

Conference Proceedings

2020 Marco A. Valenzuela-Escárcega, Gus Hahn-Powell, and Dane Bell (May 2020). "Odinson: A Fast Rule-based Information Extraction Framework." In: *Proceedings of The 12th Language Resources and Evaluation Conference*. Marseille, France: European Language Resources Association, pp. 2183–2191. URL: https://aclweb.org/anthology/2020.lrec-1.267

Zheng Tang, Gus Hahn-Powell, and Mihai Surdeanu (July 2020). "Exploring Interpretability in Event Extraction: Multitask Learning of a Neural Event Classifier and an Explanation Decoder." In: *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics: Student Research Workshop*. Online: Association for Computational Linguistics, pp. 169–175. URL: https://aclweb.org/anthology/2020.acl-srw.23

2019 George C. G. Barbosa, Zechy Wong, Gus Hahn-Powell, Dane Bell, Rebecca Sharp, Marco A. Valenzuela-Escárcega, and Mihai Surdeanu (June 2019). "Enabling Search and Collaborative Assembly of Causal Interactions Extracted from Multilingual and Multi-domain Free Text." In: *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics (Demonstrations)*. ACL. Minneapolis, Minnesota: Association for Computational Linguistics, pp. 12–17. DOI: 10.18653/v1/N19-4003. URL: https://aclweb.org/anthology/N19-4003/

2018 Fan Luo, Marco A. Valenzuela-Escárcega, Gus Hahn-Powell, and Mihai Surdeanu (2018). "Scientific Discovery as Link Prediction in Influence and Citation Graphs." In: *Proceedings of the Twelfth Workshop on Graph-Based Methods for Natural Language Processing (TextGraphs-12)* (New Orleans, Louisiana, USA). Association for Computational Linguistics, pp. 1–6. DOI: 10.18653/v1/W18-1701

Angus Graeme Forbes, Kristine Lee, Gus Hahn-Powell, Marco Antonio Valenzuela-Escárcega, and Mihai Surdeanu (2018). "Text Annotation Graphs: Annotating Complex Natural Language Phenomena." In: *Proceedings of the Eleventh International Conference on Language Resources and Evaluation (LREC-2018)* (Miyazaki, Japan). European Language Resources Association (ELRA). arXiv: 1711.00529 [cs.CL]. URL: https://aclweb.org/anthology/L18-1169/

2017 Gus Hahn-Powell, Marco A. Valenzuela-Escárcega, and Mihai Surdeanu (2017). "Swanson linking revisited: Accelerating literature-based discovery across domains using a conceptual influence graph." In: *Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics: Software Demonstrations*. ACL, pp. 103–108. DOI: 10.18653/v1/P17-4018

Marco A Valenzuela-Escárcega, Ozgün Babur, Gus Hahn-Powell, Dane Bell, Thomas Hicks, Enrique Noriega-Atala, Xia Wang, Mihai Surdeanu, Emek Demir, and Clayton T Morrison (2017). "Large-scale automated reading with Reach discovers new cancer driving mechanisms." In: *Proceedings of the Sixth BioCreative Challenge Evaluation Workshop*, pp. 201–203. URL: http://www.biocreative.org/media/store/files/2018/general_3.pdf

2016

Gus Hahn-Powell, Dane Bell, Marco A. Valenzuela-Escárcega, and Mihai Surdeanu (2016). "This before That: Causal Precedence in the Biomedical Domain." In: *Proceedings of the 2016 Workshop on Biomedical Natural Language Processing* (Humboldt University of Berlin). Association for Computational Linguistics, pp. 146–155. DOI: 10.18653/v1/W16-2920. arXiv: 1606.08089 [cs.CL]

Dane Bell, Gus Hahn-Powell, Marco A. Valenzuela-Escárcega, and Mihai Surdeanu (2016). "An investigation of coreference phenomena in the biomedical domain." In: *Proceedings of the 10th International Conference on Language Resources and Evaluation* (Portorož, Slovenia). LREC. arXiv: 1603.03758 [cs.CL]. URL: https://aclweb.org/anthology/L16-1027/

Marco A. Valenzuela-Escárcega, Gus Hahn-Powell, Dane Bell, and Mihai Surdeanu (2016). "SnapToGrid: From Statistical to Interpretable Models for Biomedical Information Extraction." In: *Proceedings of the 15th Workshop on Biomedical Natural Language Processing* (Humboldt University of Berlin). Association for Computational Linguistics, pp. 56–65. DOI: 10.18653/v1/W16-2907. arXiv: 1606.09604 [cs.CL]

Marco A. Valenzuela-Escárcega, Gus Hahn-Powell, and Mihai Surdeanu (2016). "Odin's Runes: A Rule Language for Information Extraction." In: *Proceedings of the 10th International Conference on Language Resources and Evaluation* (Portorož, Slovenia). LREC. URL: https://aclweb.org/anthology/L16-1050/

2015

Marco A. Valenzuela-Escárcega, Gus Hahn-Powell, Thomas Hicks, and Mihai Surdeanu (2015). "A Domain-independent Rule-based Framework for Event Extraction." In: *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing of the Asian Federation of Natural Language Processing: Software Demonstrations* (Beijing, China). ACL-IJCNLP 2015, pp. 127–132. DOI: 10.3115/v1/P15-4022

Presentations

2015

Gus Hahn-Powell, Benjamin Martin, and Diana Archangeli (Dec. 2015). "A method for automatically detecting problematic tongue traces." In: *Proceedings of Ultrafest VII* (University of Hong Kong). Ultrafest VII. URL: https://parsertongue.org/presentations/2015/ultrafest-tongue-traces/

2014 Gus Hahn-Powell and Diana Archangeli (Oct. 2014a). "AutoTrace: An automatic system for tracing tongue contours." In: *Proceedings of the 168th Meeting of Acoustical Society of America* (Indianapolis, Indiana). Vol. 136. 4. ASA, pp. 2104–2104. URL: https://parsertongue.org/presentations/2014/asa-at/

Gus Hahn-Powell and Diana Archangeli (Oct. 2014b). "Testing AutoTrace." In: *Proceedings of the 168th Meeting of Acoustical Society of America* (Indianapolis, Indiana). Vol. 136. 4. ASA, pp. 2082–2082. URL: https://parsertongue.org/presentations/2014/asa-testing-at/

2013 Diana Archangeli, Mohsen Mahdavi, David Ellison, Gus Hahn-Powell, Rolando Coto, Jeff Berry, and Paul Boersma (Nov. 2013). "UltraPraat Software & database for simultaneous acoustic and articulatory analysis." In: *Proceedings of Ultrafest VI* (Queen Margaret University). Ultrafest VI

Jae-Hyun Sung, Jeff Berry, Marissa Cooper, Gus Hahn-Powell, and Diana Archangeli (Nov. 2013). "Testing AutoTrace: A Machine-learning Approach to Automated Tongue Contour Data Extraction." In: *Proceedings of Ultrafest VI* (Queen Margaret University). Ultrafest VI. URL: https://parsertongue.org/presentations/2013/ultrafest-at/

Colin R. Dawson, Luca Del Pero, Clayton T. Morrison, Mihai Surdeanu, Gus Hahn-Powell, Zachary Chapman, and Kobus Barnard (Apr. 2013). "Bayesian modeling of scenes and captions." In: *Proceedings of the 2013 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies; Workshop on Vision and Language* (Atlanta, Georgia). (WVL)NAACL-HLT. URL: http://nlp.cs.illinois.edu/WVL13/slides/Dawson_WVL13.pdf

2010 Elliot Patton, Gus Hahn-Powell, and Robert Nelson (Apr. 2010). "The 'Worthy of Attention' Collostruction: Frequency, synonymy, and learnability." In: *Southeastern Conference on Linguistics* (University of Mississippi). SECOL LXII. URL: https://parsertongue.org/presentations/2010/secol-worthy-of-attention-collostruction/

Invited Talks

2020 Gus Hahn-Powell (May 2020a). *Community-guided Hypothesis Generation*. PAKDD. First International Workshop on Literature-Based Discovery (LBD 2020). URL: https://www.pakdd2020.org/workshops.html

Gus Hahn-Powell (Apr. 2020b). *Generating scientific hypotheses through machine reading*. UACOGSCI. University of Arizona's Cognitive Science Colloquium series. URL: https://cogsci.arizona.edu/content/cognitive-science-colloquium

2019 Gus Hahn-Powell and Dane Bell (Oct. 2019). *Bridging Non-interacting Research Communities Through Machine-guided Discovery Synthesis*. To be presented at the INFORMS 2019 special session on Machine Reading and Comprehension for Science-Practice Knowledge Synthesis. Seattle, WA. INFORMS. URL: https://www.abstractsonline.com/pp8/#!/6818/presentation/6580

Patents

Pending

2018 Mihai Surdeanu, Marco Valenzuela-Escárcega, Gus Hahn-Powell, Dane Bell, Thomas Hicks, Enrique Noriega, and Clayton Morrison (Sept. 2018). "Methods for extracting and assessing information from literature documents." Patent US 20180260474A1 (US). URL: https://patentimages.storage.googleapis.com/a6/82/53/42c8519df48fe8/US20180260474A1.pdf

Publications (not peer-reviewed)

Manuals

2015 Marco Antonio Valenzuela-Escárcega, Gus Hahn-Powell, and Mihai Surdeanu (2015). *Description of the Odin Event Extraction Framework and Rule Language*. v1. arXiv: 1509.07513 [cs.CL]

Grants and Awards

Grants

2020 *Democratizing machine reading for non-experts: Easy and interpretable methods to extract structured information from text*. AGENCY: NSF. URL: https://mr4all.parsertongue.org/about. ROLE: Co-PI. FEDERAL AWARD ID: 2006583. AWARD: $499K

Supply chain Quantification Using Imperfect Data (SQUID). AGENCY: DARPA. URL: https://darpa.mil/program/logx. ROLE: PI (subcontract through Raytheon BBN). AWARD: $699K

Awards

2019 **Best System Demonstration**. *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics (Demonstrations)*. URL: https://multiling.demos.clulab.org

Research Interests

machine reading, literature-based discovery, knowledge assembly, lexical semantics, computational modeling of language