

Michael HAHN

EDUCATION

09/2016–current	PhD, Stanford University , Department of Linguistics
09/2019–12/2019	Visiting PhD student, Massachusetts Institute of Technology
10/2015–09/2016	Visiting Research Postgraduate Student, University of Edinburgh
10/2014–07/2015	M.Sc. in MATHEMATICS, University of Tübingen
10/2011–9/2014	B.Sc. in MATHEMATICS, University of Tübingen
10/2010–7/2013	B.A. in COMPUTATIONAL LINGUISTICS, University of Tübingen

PUBLICATIONS

Peer Reviewed Papers

- [1] Michael Hahn, Dan Jurafsky, and Richard Futrell. Universals of word order reflect optimization of grammars for efficient communication. *Proceedings of the National Academy of Sciences of the United States of America*, 2020.
- [2] Michael Hahn. Theoretical limitations of self-attention in neural sequence models. *Transactions of the Association for Computational Linguistics*, 8:156–171, 2020.
- [3] Michael Hahn and Marco Baroni. Tabula nearly rasa: Probing the linguistic knowledge of character-level neural language models trained on unsegmented text. *Transactions of the Association for Computational Linguistics*, 2019.
- [4] Michael Hahn, Frank Keller, Yonatan Bisk, and Yonatan Belinkov. Character-based surprisal as a model of human reading in the presence of errors. In *Proceedings of the 41st Annual Meeting of the Cognitive Science Society (CogSci)*, 2019.
- [5] Michael Hahn and Richard Futrell. Estimating predictive rate-distortion curves via neural variational inference. *Entropy*, 21(7):640, 2019.
- [6] Michael Hahn, Judith Degen, Noah Goodman, Dan Jurafsky, and Richard Futrell. An information-theoretic explanation of adjective ordering preferences. In *Proceedings of the 40th Annual Meeting of the Cognitive Science Society (CogSci)*, 2018.
- [7] Michael Hahn, Andreas Krebs, and Howard Straubing. Wreath products of distributive forest algebras. In *Logic in Computer Science (LICS)*, 2018.
- [8] Michael Hahn and Frank Keller. Modeling Human Reading with Neural Attention. In *Proceedings of EMNLP*, 2016.
- [9] Michael Hahn and Frank Richter. Henkin Semantics for Reasoning with Natural Language. *Journal of Language Modeling*, 3(2):513–568, 2015.
- [10] Michael Hahn, Andreas Krebs, Klaus-Jörn Lange, and Michael Ludwig. Visibly Counter Languages and the Structure of NC1. In *Proceedings of Mathematical Foundations of Computer Science (MFCS) 2015*, 2015.
- [11] Michael Hahn and Detmar Meurers. On deriving semantic representations from dependencies: A practical approach for evaluating meaning in learner corpora. In Kim Gerdes, Eva Hajicová, and Leo Wanner, editors, *Dependency Theory*, Frontiers in AI and Applications Series. IOS Press, 2014.
- [12] Michael Hahn. Predication and NP Structure in an Omnipredicative Language: The Case of Khoekhoe. In Stefan Müller, editor, *Proceedings of the 21st International Conference on Head-Driven Phrase Structure Grammar*. CSLI Publications, 2014.
- [13] Michael Hahn. Word Order Variation in Khoekhoe. In Stefan Müller, editor, *Proceedings of the 20th International Conference on Head-Driven Phrase Structure Grammar*, pages 48–68, 2013.

- [14] Niels Ott, Ramon Ziai, Michael Hahn, and Detmar Meurers. CoMeT: Integrating different levels of linguistic modeling for meaning assessment. In *Proceedings of the 7th International Workshop on Semantic Evaluation (SemEval)*, pages 608–616, 2013.
- [15] Michael Hahn. Arabic Relativization Patterns: A Unified HPSG Analysis. In *Proceedings of the 19th International Conference on Head-Driven Phrase Structure Grammar*, Chungnam National University Daejeon, 2012.
- [16] Michael Hahn and Detmar Meurers. Evaluating the Meaning of Answers to Reading Comprehension Questions: A Semantics-Based Approach. In *Proceedings of the 7th Workshop on Innovative Use of NLP for Building Educational Applications (BEA7)*. Association for Computational Linguistics, 2012.
- [17] Michael Hahn and Detmar Meurers. On deriving semantic representations from dependencies: A practical approach for evaluating meaning in learner corpora. In *Proceedings of the Int. Conference on Dependency Linguistics (Depling 2011)*, pages 94–103, 2011.
- [18] Michael Hahn. Null Conjuncts and Bound Pronouns in Arabic. In *The Proceedings of the 18th International Conference on Head-Driven Phrase Structure Grammar*, 2011.

WORK AND TEACHING EXPERIENCE

- 04/2020–06/2020 Teaching Assistant, Natural Language Understanding (CS 224U), Stanford University. Main instructor: Chris Potts.
- 01/2019–03/2019 Teaching Assistant, Natural Language Processing with Deep Learning (CS 224N), Stanford University. Main instructor: Chris Manning.
- 06/2018–09/2018 Research Intern, Facebook AI Research, Paris. Supervisor: Marco Baroni.
- 09/2017–09/2018 Corpus TA (Corpus Manager), Stanford University, Department of Linguistics.
- 11/2010–07/2015 Research Assistant, University of Tübingen. PI: Detmar Meurers.
- 04/2012–07/2012 Teaching Assistant, Grammar Formalisms in Computational Linguistics, University of Tübingen. Main instructor: Detmar Meurers.

PRESENTATIONS

- 07/2020 *Theoretical Limitations of Self-Attention in Neural Sequence Models*, 58th Annual Meeting of the Association for Computational Linguistics, 2020.
- 07/2020 *Tabula nearly rasa: Probing the linguistic knowledge of character-level neural language models trained on unsegmented text* (work with Marco Baroni), 58th Annual Meeting of the Association for Computational Linguistics, 2020.
- 03/2020 *Lexical Effects in Structural Forgetting: Evidence for Experience-Based Accounts and a Neural Network Model* (work with Richard Futrell and Edward Gibson), CUNY 2020 (oral)
- 07/2019 *Character-based Surprisal as a Model of Human Reading in the Presence of Errors* (work with Frank Keller, Yonatan Bisk, Yonatan Belinkov), CogSci 2019 (oral)
- 07/2019 *Crosslinguistic Word Orders Optimize Efficiency of Human Communication and Processing*, Harvard NLP, Harvard University
- 03/2019 *Crosslinguistic word orders enable an efficient tradeoff of memory and surprisal* (work with Judith Degen, Richard Futrell), CUNY 2019 (oral)
- 03/2019 *Testing Functional Explanations of Word Order Universals* (work with Richard Futrell), CUNY 2019 (oral)
- 11/2018 *Testing Functional Explanations of Word Order Universals*. CAMP 2018, USC
- 07/2018 *An Information-Theoretic Explanation of Adjective Ordering Preferences*. CogSci 2018
- 07/2018 *Wreath Products of Distributive Forest Algebras*. LICS 2018, Oxford
- 03/2018 *Mutual Information Impacts Adjective Ordering Across Languages*. (work with Judith Degen, Dan Jurafsky, Noah Goodman, Richard Futrell), CUNY 2018, UC Davis (poster)

- 03/2018 *Exploring Adjective Ordering Preferences via Artificial Language Learning.* (work with Judith Degen, Richard Futrell), CUNY 2018, UC Davis (poster)
- 11/2017 *Exploring Adjective Ordering Preferences via Artificial Language Learning.* (work with Judith Degen, Richard Futrell), California Meeting on Psycholinguistics, 2017, UCLA.
- 03/2017 *Modeling Task Effects in Reading with Neural Attention.* CUNY 2017, MIT
- 11/2016 *Modeling Human Reading with Neural Attention.* EMNLP 2016, Austin, Texas
- 08/2014 *Predication and NP Structure in an Omnipredicative Language: The Case of Khoekhoe.* 21st International Conference on Head-Driven Phrase Structure Grammar, Buffalo, US.
- 08/2013 *Word Order Variation in Khoekhoe.* 20th International Conference on Head-Driven Phrase Structure Grammar, Berlin, Germany.
- 07/2012 *Arabic Relativization Patterns: A Unified HPSG Analysis.* 19th International Conference on Head-Driven Phrase Structure Grammar, Daejeon, South Korea.
- 07/2012 (with Detmar Meurers) *Evaluating the Meaning of Answers to Reading Comprehension Questions: A Semantics-Based Approach.* 7th Workshop on Innovative Use of NLP for Building Educational Applications (BEA7), Montreal, Canada.
- 08/2011 *Null Conjuncts and Bound Pronouns in Arabic.* 18th International Conference on Head-Driven Phrase Structure Grammar, Seattle, US.
- 08/2011 (with Detmar Meurers) *On deriving semantic representations from dependencies.* International Conference on Dependency Linguistics, Barcelona, Spain.
- 07/2010 *Agreement and Complex Predicates in Arabic.* Generative Grammatik des Nordens, Berlin, Germany.
- 05/2009 *Nonlocal Dependencies in Modern Standard Arabic.* Workshop on Grammar Theory and Grammar Implementation, Berlin, Germany.

REVIEWING

- 2020 Reviewer for Cognition; Glossa; CoNLL
- 2019 Reviewer for Glossa; Neuropsychologia; MFCS
- 2015 Reviewer for STACS

FELLOWSHIPS

- 2019– Stanford Interdisciplinary Graduate Fellowship
- 2011–2016 German National Academic Foundation (Studienstiftung des Deutschen Volkes, supporting about 0.5 % of university students in Germany as of 2012)