Christopher David Manning

Department of Linguistics
Margaret Jacks Hall
Stanford CA 94305-2150

Phone: +1 (650) 723-7683
Web: http://nlp.stanford.edu/~manning/
Email: manning@stanford.edu

A. Education

1990–1994 Ph.D. Stanford University, Dept. of Linguistics, awarded January 1995.
Dissertation: *Ergativity: Argument Structure and Grammatical Relations.*
Committee: Joan Bresnan (chair), Mary Dalrymple, Ivan Sag, Peter Sells.

1984–1989 B.A. (Hons) with First Class Honours in Linguistics, The Australian National University. Additional majors in Mathematics and Computer Science.
Honours Thesis: *The Acquisition of Morphology.* Advisor: Avery D. Andrews.

Scholarships and Honors

Bernard and Julia Bloch Memorial Fellow (student representative on the Linguistic Society of America Executive Committee), 1993–1995.

Stanford Centennial Teaching Assistant (award in honor of outstanding teaching), 1993.

Fellowships, 1991 and 1993 Linguistic Society of America Summer Institutes.

Stanford University Fellowship, 1990–1994.

University Medal, Australian National University, 1989.

(Australian) National Undergraduate Scholarship, 1984–1989.

B. Employment

02/14/2016– Thomas M. Siebel Professor in Machine Learning, Professor of Linguistics and of Computer Science, Stanford University.

09/01/2012–2016 Professor of Computer Science and Linguistics, Stanford University.

2010–2011 Visiting faculty at Google while on sabbatical from Stanford.

09/01/2006–2012 Associate Professor of Computer Science and Linguistics, Stanford University.

09/01/1999–2006 Assistant Professor of Computer Science and Linguistics, Stanford University.

1996–1999 Lecturer (tenured from 1998), Department of Linguistics, University of Sydney.

1994–1996 Assistant Professor, Computational Linguistics Program, Department of Philosophy, Carnegie Mellon University.

1989–1990 Teacher, Ichihara Chūō Gakkō, Chiba-ken, Japan

1996 Computer Systems Officer, Department of House of Representatives, Canberra, Australia

C. Professional Service

Association for Computational Linguistics
Member of the *Computational Linguistics* Editorial Board 1998–2000, Treasurer

for NAACL (the North American chapter), 2006–12. President of the ACL, 2015 (ACL Executive Board 2013–2016), ACL Nominating Committee (2015–2019).

Linguistic Society of America
Member of Executive Committee (Bernard and Julia Bloch Memorial Fellow), 1993–95, Member of the Interim Committee on the Status of Minorities in Linguistics 1993–94, Member of Committee on Endangered Languages and Their Preservation, 2003–06.

Refereeing (since 2011)

2019	ICLR 2019, EMNLP 2019.
2018	ACL 2018, NIPS 2018 (Area Chair), LREC 2018, ICLR 2018, Universal Dependencies Workshop 2018.
2017	EMNLP 2017, NSF CAREER, *Science*, UD workshop 2017, NMT workshop 2017, Royal Society.
2016	NAACL 2016, *Journal of Artificial Intelligence Research*, ACL 2016, ICLR 2016, LREC 2016.
2015	NAACL 2015, ICLR 2015, EMNLP 2015.
2014	*Artificial Intelligence*, *Journal of Machine Learning Research*, LREC 2014, NIPS 2014, ICLR 2014, Allen Distinguished Investigators in Artifical Intelligence.
2013	Coling 2012, DepLing 2013, ICLR 2013 program co-chair, NIPS 2013, NSF CAREER grants.
2012	WWW 2012, NAACL HLT 2012, ACL 2012, Coling 2012
2011	EMNLP 2011, ACL HLT 2011, co-program chair for CoNLL 2011, ICML 2011 *Journal of Machine Learning Research*, NSF Robust Intelligence program grant reviewer, *Machine Learning*, *Machine Translation*.

D. Post-degree honors

Outstanding Paper award at EMNLP 2017 for the paper "Position-aware Attention and Supervised Data Improve Slot Filling" (with Yuhao Zhang, Victor Zhong, Danqi Chen, and Gabor Angeli).

Outstanding Paper award at ACL 2016 for the paper "A Thorough Examination of the CNN/Daily Mail Reading Comprehension Task" (with Danqi Chen and Jason Bolton).

Best new data set or resource award at EMNLP 2015 for the paper "A large annotated corpus for learning natural language inference" (with Samuel R. Bowman, Gabor Angeli, and Christopher Potts).

Best paper award at EMNLP 2014 for the paper "Modeling Biological Processes for Reading Comprehension" (with Jonathan Berant, Vivek Srikumar, Pei-Chun Chen, Abby Vander Linden, Brittany Harding, Brad Huang, and Peter Clark).

Fellow of the Association for Computing Machinery, 2013.

Best paper award at ACM Human Factors in Computing Systems (CHI), 2013 for the paper "The Efficacy of Human Post-Editing for Language Translation" (with Spence Green and Jeffrey Heer).

Fellow of the Association for Computational Linguistics (ACL), 2011.

Distinguished paper award at the 25th International Conference on Machine Learning (ICML 2011) for the paper "Parsing Natural Scenes and Natural Language with Recursive Neural Networks" (with Richard Socher, Cliff Chiung-Yu Lin, and Andrew Ng).

American Association for Artificial Intelligence (AAAI) Fellow, 2010.

Springer best paper award at the 22nd International Conference on Computational Linguistics (Coling 2008) for the paper "Modeling semantic containment and exclusion in natural language inference" (with Bill MacCartney).

Sony Faculty Scholar in the School of Engineering, Stanford, 2007–2011.

Best paper award at the 2004 Conference on Empirical Methods in Natural Language Processing for the paper "Max-Margin Parsing" (with Ben Taskar, Dan Klein, Michael Collins, and Daphne Koller).

Best paper award at the 2003 Association for Computational Linguistics Annual Meeting for the paper "Accurate Unlexicalized Parsing" (with Dan Klein).

IBM Faculty Partnership Award, Stanford University, 2001, 2002, 2003, 2005.

Frederick E. Terman Fellowship, Stanford University, 1999–2002.

Membership in Professional Organizations

Association for Computational Linguistics

American Association for Artificial Intelligence

Association for Computing Machinery (including SIGIR and SIGKDD)

E. Publications

Books

Christopher D. Manning, Prabhakar Raghavan, and Hinrich Schütze. 2008. *Introduction to Information Retrieval*. Cambridge: Cambridge University Press. pp. xxi+482.

Christopher D. Manning and Hinrich Schütze. 1999. *Foundations of Statistical Natural Language Processing*. Cambridge, MA: MIT Press. pp. xxvii+680.

Avery D. Andrews and Christopher D. Manning. 1999. *Complex Predicates and Information Spreading in LFG*. Stanford, CA: CSLI Publications. pp. ix+153.

Christopher D. Manning. 1996. *Ergativity: Argument Structure and Grammatical Relations*. Stanford, CA: CSLI Publications. pp. xiii+222.

Journal Articles

Siva Reddy, Danqi Chen, and Christopher D. Manning. 2019. CoQA: A conversational question answering challenge. *Transactions of the Association for Computational Linguistics* 7:249–266.

Christopher D. Manning. 2015. Computational linguistics and deep learning. *Computational Linguistics* 41:701–707. [Invited contribution].

Spence Green, Jeffrey Heer, and Christopher D. Manning. 2015. Natural language translation at the intersection of AI and HCI. *Communications of the ACM* 58:46–53.

Julia Hirschberg and Christopher D. Manning. 2015. Advances in natural language processing. *Science* 349:261–266. [Review article].

Sonal Gupta, Diana L. MacLean, Jeffrey Heer, and Christopher D. Manning. 2014. Induced lexico-syntactic patterns improve information extraction from online medical forums. *Journal of the American Medical Informatics Association (JAMIA)* 21:902–909.

Mengqiu Wang and Christopher D. Manning. 2014. Cross-lingual projected expectation regularization for weakly supervised learning. *Transactions of the Association for Computational Linguistics* 2:55–66.

Richard Socher, Andrej Karpathy, Quoc V. Le, Christopher D. Manning, and Andrew Y. Ng. 2014. Grounded compositional semantics for finding and describing images with sentences. *Transactions of the Association for Computational Linguistics* pp. 207–218.

Daniel A. McFarland, Daniel Ramage, Jason Chuang, Jeffrey Heer, Christopher D. Manning, and Daniel Jurafsky. 2013. Differentiating language usage through topic models. *Poetics* 41:607–625.

Spence Green, Marie-Catherine de Marneffe, and Christopher D. Manning. 2013. Parsing models for identifying multiword expressions. *Computational Linguistics* 39:195–227.

Jason Chuang, Christopher D. Manning, and Jeffrey Heer. 2012. "Without the clutter of unimportant words": Descriptive keyphrases for text visualization. *ACM Transactions on Computer-Human Interaction* 19:1–29.

Marie-Catherine de Marneffe, Christopher D. Manning, and Christopher Potts. 2012. Did it happen? The pragmatic complexity of veridicality assessment. *Computational Linguistics* 38:301–333.

David McClosky, Sebastian Riedel, Mihai Surdeanu, Andrew McCallum, and Christopher D. Manning. 2012. Combining joint models for biomedical event extraction. *BMC Bioinformatics* 13 (Suppl 11).

Sharon Goldwater, Dan Jurafsky, and Christopher D. Manning. 2010. Which words are hard to recognize? Prosodic, lexical, and disfluency factors that increase speech recognition error rates. *Speech Communication* 52:181–200.

Sebastian Padó, Daniel Cer, Michel Galley, Dan Jurafsky, and Christopher D. Manning. 2009. Measuring machine translation quality as semantic equivalence: A metric based on entailment features. *Machine Translation* 23: 181–193.

Kristina Toutanova, Aria Haghighi, and Christopher D. Manning. 2008. A global joint model for semantic role labeling. *Computational Linguistics* 34: 161–191.

Nick Chater and Christopher D. Manning. 2006. Probabilistic models of language processing and acquisition. *TRENDS in Cognitive Sciences* 10:335–344.

Kristina Toutanova, Christopher D. Manning, Dan Flickinger, and Stephan Oepen. 2005. Stochastic HPSG parse disambiguation using the Redwoods corpus. *Research on Language & Computation* 3:83–105. Based on the paper: Kristina Toutanova, Christopher D. Manning, Stuart M. Shieber, Dan Flickinger, and Stephan Oepen, Parse Disambiguation for a Rich HPSG Grammar, appearing in *Proceedings of The First Workshop on Treebanks and Linguistic Theories (TLT2002)*, Sozopol, Bulgaria, 2002, pp. 253–263.

Dan Klein and Christopher D. Manning. 2005. Natural language grammar induction with a generative constituent-context model. *Pattern Recognition* 38:1407–1419.

Shipra Dingare, Malvina Nissim, Jenny Finkel, Christopher Manning, and Claire Grover. 2005. A system for identifying named entities in biomedical text: How results from two evaluations reflect on both the system and the evaluations. *Comparative and Functional Genomics* 6:77–85.

Jenny Finkel, Shipra Dingare, Christopher Manning, Malvina Nissim, Beatrice Alex, and Claire Grover. 2005. Exploring the boundaries: Gene and protein identification in biomedical text. *BMC Bioinformatics* 6 (Suppl 1):S5 (9 pp). Original version in the *Proceedings of the BioCreative Workshop*, Granada.

Stephan Oepen, Dan Flickinger, Kristina Toutanova, and Christopher D. Manning. 2004. LinGO Redwoods: A rich and dynamic treebank for HPSG. *Research on Language & Computation* 2:575–596. Originally appeared in *Proceedings of The First Workshop on Treebanks and Linguistic Theories (TLT2002)*, Sozopol, Bulgaria, 2002, pp. 139–149.

Miriam Corris, Christopher Manning, Susan Poetsch, and Jane Simpson. 2004. How useful and usable are dictionaries for speakers of Australian Indigenous languages? *International Journal of Lexicography* 17:33–68.

Christopher D. Manning, Kevin Jansz, and Nitin Indurkhya. 2001. Kirrkirr: Software for browsing and visual exploration of a structured Warlpiri dictionary. *Literary and Linguistic Computing* 16:135–151.

Christopher D. Manning and Ivan A. Sag. 1998. Argument structure, valence, and binding. *Nordic Journal of Linguistics* 21:107–144.

Edited volumes

Annie Zaenen, Jane Simpson, Tracy Holloway King, Jane Grimshaw, Joan Maling, and Chris Manning (eds.). 2007. *Archictectures, Rules, and Preferences: Variations on Themes by Joan W. Bresnan*. Stanford, CA: CSLI Publications.

Book chapters/sections

Bill MacCartney and Christopher D. Manning. 2014. Natural logic and natural language inference. In Harry Bunt, Johan Bos, and Stephen Pulman (eds.), *Computing Meaning*, volume 4, pp. 129–147. Springer.

Pi-Chuan Chang, Michel Galley, Niyu Ge, and Christopher D. Manning. 2011. Customizing Chinese word segmentation for improved machine translation. In Joseph Olive, Caitlin Christianson, and John McCary (eds.), *Handbook of Natural Language Processing and Machine Translation: DARPA Global Autonomous Language Exploitation*, pp. 145–152. New York, NY: Springer.

Marie-Catherine de Marneffe, Anna N. Rafferty, and Christopher D. Manning. 2011. Identifying conflicting information in texts. In Joseph Olive, Caitlin Christianson, and John McCary (eds.), *Handbook of Natural Language Processing and Machine Translation: DARPA Global Autonomous Language Exploitation*, pp. 683–690. New York, NY: Springer.

Sebastian Pado, Michel Galley, and Christopher Manning. 2011. The Stanford RTE-based metrics (RTE and RTE+MT). In Joseph Olive, Caitlin Christianson, and John McCary (eds.), *Handbook of Natural Language Processing and Machine Translation: DARPA Global Autonomous Language Exploitation*, pp. 835–837. New York, NY: Springer.

Dan Klein and Christopher D. Manning. 2004. Parsing and hypergraphs. In Harry Bunt, John Carroll, and Giorgio Satta (eds.), *New Developments in Parsing Technology*, pp. 351–372. Dordrecht: Kluwer Academic Publishers. Originally appeared in the *Proceedings of the 7th International Workshop on Parsing Technologies (IWPT-2001)*, pp. 123–134.

Christopher D. Manning. 2003. Probabilistic syntax. In Rens Bod, Jennifer Hay, and Stefanie Jannedy (eds.), *Probabilistic Linguistics*, pp. 289–341. Cambridge, MA: MIT Press.

Miriam Corris, Christopher Manning, Susan Poetsch, and Jane Simpson. 2002. Dictionaries and endangered languages. In David Bradley and Maya Bradley (eds.), *Language Endangerment and Language Maintenance*, pp. 329–347. London: RoutledgeCurzon. Previously presented at the Endangered Languages Workshop, La Trobe University, 1999, and the 1999 Perth Congress of the Applied Linguistics Association of Australia.

Christopher D. Manning and Bob Carpenter. 2000. Probabilistic parsing using left corner language models. In Harry Bunt and Anton Nijholt (eds.), *Advances in Probabilistic and Other Parsing Technologies*, pp. 105–124. Dordrecht: Kluwer Academic Publishers. Originally appeared in the *Proceedings*

of the Fifth International Workshop on Parsing Technologies (IWPT-97), pp. 147–158, 1997.

Christopher David Manning, Ivan A. Sag, and Masayo Iida. 1999. The lexical integrity of Japanese causatives. In Robert D. Levine and Georgia M. Green (eds.), *Studies in Contemporary Phrase Structure Grammar*, pp. 39–79. Cambridge: Cambridge University Press.

Christopher D. Manning and Ivan A. Sag. 1999. Dissociations between argument structure and grammatical relations. In Gert Webelhuth, Jean-Pierre Koenig, and Andreas Kathol (eds.), *Lexical And Constructional Aspects of Linguistic Explanation*, pp. 63–78. Stanford, CA: CSLI Publications.

Christopher D. Manning. 1997. Grammatical relations versus binding: On the distinctness of argument structure. In F. Corblin, D. Godard, and J.-M. Marandin (eds.), *Empirical Issues in Formal Syntax and Semantics*, pp. 79–102. Bern: Peter Lang.

Christopher D. Manning. 1993. Analyzing the verbal noun: Internal and external constraints. In Soonja Choi (ed.), *Japanese/Korean Linguistics*, volume 3, pp. 236–253. Stanford, CA: Stanford Linguistics Association.

Refereed Full Papers in Conference Proceedings

Kevin Clark, Minh-Thang Luong, Urvashi Khandelwal, Christopher D. Manning, and Quoc V. Le. 2019a. BAM! born-again multi-task networks for natural language understanding. In *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics*, pp. 5931–5937.

Kevin Clark, Urvashi Khandelwal, Omer Levy, and Christopher D. Manning. 2019b. What does BERT look at? an analysis of BERT's attention. In *Proceedings of the 2019 ACL Workshop BlackboxNLP: Analyzing and Interpreting Neural Networks for NLP*, pp. 276–286.

Drew A. Hudson and Christopher D. Manning. 2019. Gqa: A new dataset for real-world visual reasoning and compositional question answering. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*.

John Hewitt and Christopher D. Manning. 2019. A structural probe for finding syntax in word representations. In *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume 1 (Long and Short Papers)*, pp. 4129–4138.

Peng Qi, Timothy Dozat, Yuhao Zhang, and Christopher D. Manning. 2018. Universal dependency parsing from scratch. In *Proceedings of the CoNLL 2018 Shared Task: Multilingual Parsing from Raw Text to Universal Dependencies*, pp. 160–170.

Matthew Lamm, Arun Chaganty, Christopher D. Manning, Dan Jurafsky, and Percy Liang. 2018. Textual analogy parsing: What's shared and what's compared among analogous facts. In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing*, pp. 82–92.

Kevin Clark, Minh-Thang Luong, Christopher D. Manning, and Quoc Le. 2018. Semi-supervised sequence modeling with cross-view training. In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing*, pp. 1914–1925.

Yuhao Zhang, Peng Qi, and Christopher D. Manning. 2018. Graph convolution over pruned dependency trees improves relation extraction. In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing*, pp. 2205–2215.

Zhilin Yang, Peng Qi, Saizheng Zhang, Yoshua Bengio, William Cohen, Ruslan Salakhutdinov, and Christopher D. Manning. 2018. HotpotQA: A dataset for diverse, explainable multi-hop question answering. In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing*, pp. 2369–2380.

Yuhao Zhang, Daisy Yi Ding, Tianpei Qian, Christopher D. Manning, and Curtis P. Langlotz. 2018. Learning to summarize radiology findings. In *Proceedings of the Ninth International Workshop on Health Text Mining and Information Analysis*, pp. 204–213.

Timothy Dozat and Christopher D. Manning. 2018. Simpler but more accurate semantic dependency parsing. In *Proceedings of the 56th Annual Meeting of the Association for Computational Linguistics (Volume 2: Short Papers)*, pp. 484–490.

Sebastian Schuster, Joakim Nivre, and Christopher D. Manning. 2018. Sentences with gapping: Parsing and reconstructing elided predicates. In *Proceedings of the 2018 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume 1 (Long Papers)*, pp. 1156–1168.

Yuhao Zhang, Victor Zhong, Danqi Chen, Gabor Angeli, and Christopher D. Manning. 2017. Position-aware attention and supervised data improve slot filling. In *Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing*, pp. 35–45.

Arun Chaganty, Ashwin Paranjape, Percy Liang, and Christopher D. Manning. 2017. Importance sampling for unbiased on-demand evaluation of knowledge base population. In *Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing*, pp. 1038–1048.

Drew A Hudson and Christopher D Manning. 2018. Compositional attention networks for machine reasoning. In *International Conference on Learning Representations (ICLR)*.

Sebastian Schuster, Éric Villemonte de la Clergerie, Marie Candito, Benoît Sagot, Christopher D. Manning, and Djamé Seddah. 2017. Paris and stanford at epe 2017: Downstream evaluation of graph-based dependency representations. In *The 2017 Shared Task on Extrinsic Parser Evaluation at the Fourth International Conference on Dependency Linguistics and the 15th International Conference on Parsing Technologies (EPE2017)*.

Matthew Lamm, Arun Chaganty, Dan Jurafsky, Christopher D. Manning, and Percy Liang. 2018. QSRL: A semantic role-labeling schema for quantitative facts. In *First Financial Narrative Processing Workshop (FNP 2018)*, pp. 44–51.

Mihail Eric and Christopher Manning. 2017. A copy-augmented sequence-to-sequence architecture gives good performance on task-oriented dialogue. In *Proceedings of the 15th Conference of the European Chapter of the Association for Computational Linguistics: Volume 2, Short Papers*, pp. 468–473.

Sida I. Wang, Samuel Ginn, Percy Liang, and Christopher D. Manning. 2017. Naturalizing a programming language via interactive learning. In *Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 929–938.

Abigail See, Peter J. Liu, and Christopher D. Manning. 2017. Get to the point: Summarization with pointer-generator networks. In *Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 1073–1083.

Peng Qi and Christopher D. Manning. 2017. Arc-swift: A novel transition system for dependency parsing. In *Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics (Volume 2: Short Papers)*, pp. 110–117.

Daniel Zeman, Martin Popel, Milan Straka, Jan Hajic, Joakim Nivre, Filip Ginter, Juhani Luotolahti, Sampo Pyysalo, Slav Petrov, Martin Potthast, Francis Tyers, Elena Badmaeva, Memduh Gokirmak, Anna Nedoluzhko, Silvie Cinkova, Jan Hajic jr., Jaroslava Hlavacova, Václava Kettnerová, Zdenka Uresova, Jenna Kanerva, Stina Ojala, Anna Missilä, Christopher D. Manning, Sebastian Schuster, Siva Reddy, Dima Taji, Nizar Habash, Herman Leung, Marie-Catherine de Marneffe, Manuela Sanguinetti, Maria Simi, Hiroshi Kanayama, Valeria dePaiva, Kira Droganova, Héctor Martínez Alonso, Çağrı Çöltekin, Umut Sulubacak, Hans Uszkoreit, Vivien Macketanz, Aljoscha Burchardt, Kim Harris, Katrin Marheinecke, Georg Rehm, Tolga Kayadelen, Mohammed Attia, Ali Elkahky, Zhuoran Yu, Emily Pitler, Saran Lertpradit, Michael Mandl, Jesse Kirchner, Hector Fernandez Alcalde, Jana Strnadová, Esha Banerjee, Ruli Manurung, Antonio Stella, Atsuko Shimada, Sookyoung Kwak, Gustavo Mendonca, Tatiana Lando, Rattima Nitisaroj, and Josie Li. 2017. CoNLL 2017 shared task: Multilingual parsing from raw text to Universal Dependencies. In *Proceedings of the CoNLL 2017 Shared Task: Multilingual Parsing from Raw Text to Universal Dependencies*, pp. 1–19.

Timothy Dozat, Peng Qi, and Christopher D. Manning. 2017. Stanford's graph-based neural dependency parser at the CoNLL 2017 shared task. In *Proceedings of the CoNLL 2017 Shared Task: Multilingual Parsing from Raw Text to Universal Dependencies*, pp. 20–30.

Kevin Clark and Christopher D. Manning. 2016. Deep reinforcement learning for mention-ranking coreference models. In *Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing*, pp. 2256–2262.

Sebastian Schuster, Matthew Lamm, and Christopher D. Manning. 2017. Gapping constructions in Universal Dependencies v2. In *Proceedings of the NoDaLiDa 2017 Workshop on Universal Dependencies (UDW 2017)*, pp. 123–132.

Mihail Eric, Lakshmi Krishnan, Francois Charette, and Christopher D. Manning. 2017. Key-value retrieval networks for task-oriented dialogue. In *Proceedings of the 18th Annual SIGdial Meeting on Discourse and Dialogue*, pp. 37–49.

Timothy Dozat and Christopher D. Manning. 2017. Deep biaffine attention for neural dependency parsing. In *Proceedings of the International Conference on Learning Representations (ICLR 2017)*.

Gabor Angeli, Neha Nayak, and Christopher D. Manning. 2016. Combining natural logic and shallow reasoning for question answering. In *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 442–452.

Kevin Clark and Christopher D. Manning. 2016. Improving coreference resolution by learning entity-level distributed representations. In *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 643–653.

Minh-Thang Luong and Christopher D. Manning. 2016. Achieving open vocabulary neural machine translation with hybrid word-character models. In *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 1054–1063.

Samuel R. Bowman, Jon Gauthier, Abhinav Rastogi, Raghav Gupta, Christopher D. Manning, and Christopher Potts. 2016. A fast unified model for parsing and sentence understanding. In *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 1466–1477.

Danqi Chen, Jason Bolton, and Christopher D. Manning. 2016. A thorough examination of the CNN/Daily Mail reading comprehension task. In *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 2358–2367.

Sida I. Wang, Percy Liang, and Christopher D. Manning. 2016. Learning language games through interaction. In *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 2368–2378.

Abigail See, Minh-Thang Luong, and Christopher D. Manning. 2016. Compression of neural machine translation models via pruning. In *Proceedings of The 20th SIGNLL Conference on Computational Natural Language Learning*, pp. 291–301.

Thang Luong, Hieu Pham, and Christopher D. Manning. 2015. Effective approaches to attention-based neural machine translation. In *Proceedings of the*

2015 Conference on Empirical Methods in Natural Language Processing, pp. 1412–1421.

Samuel R. Bowman, Gabor Angeli, Christopher Potts, and Christopher D. Manning. 2015. A large annotated corpus for learning natural language inference. In *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing*, pp. 632–642.

Natalia Silveira and Christopher Manning. 2015. Does universal dependencies need a parsing representation? an investigation of English. In *Proceedings of the Third International Conference on Dependency Linguistics (Depling 2015)*, pp. 310–319.

Minh-Thang Luong and Christopher D. Manning. 2015. Stanford neural machine translation systems for spoken language domains. In *Proceedings of the 12th International Workshop on Spoken Language Translation (IWSLT 2015)*.

Keenon Werling, Arun Chaganty, Percy Liang, and Christopher D. Manning. 2015. On-the-job learning with Bayesian decision theory. In *Advances in Neural Information Processing Systems 28*.

Neha Nayak, Gabor Angeli, and Christopher D. Manning. 2016. Evaluating word embeddings using a representative suite of practical tasks. In *Proceedings of the 1st Workshop on Evaluating Vector-Space Representations for NLP*, pp. 19–23.

Thang Luong, Michael Kayser, and Christopher D. Manning. 2015. Deep neural language models for machine translation. In *Proceedings of the Nineteenth Conference on Computational Natural Language Learning*, pp. 305–309.

Diana MacLean, Sonal Gupta, Anna Lembke, Christopher Manning, and Jeffrey Heer. 2015. Forum77: An analysis of an online health forum dedicated to addiction recovery. In *Proceedings of the 18th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2015)*.

Manolis Savva, Angel X. Chang, Gilbert Bernstein, Christopher D. Manning, and Pat Hanrahan. 2014. On being the right scale: Sizing large collections of 3D models. In *SIGGRAPH Asia 2014 Workshop on Indoor Scene Understanding: Where Graphics meets Vision*.

Spence Green, Jason Chuang, Jeffrey Heer, and Christopher D. Manning. 2014. Predictive translation memory: A mixed-initiative system for human language translation. In *ACM User Interface Software & Technology (UIST)*.

Angel Chang, Will Monroe, Manolis Savva, Christopher Potts, and Christopher D. Manning. 2015. Text to 3d scene generation with rich lexical grounding. In *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 1: Long Papers)*, pp. 53–62.

Gabor Angeli, Melvin Jose Johnson Premkumar, and Christopher D. Manning. 2015. Leveraging linguistic structure for open domain information extraction.

In *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 1: Long Papers)*, pp. 344–354.

Keenon Werling, Gabor Angeli, and Christopher D. Manning. 2015. Robust subgraph generation improves abstract meaning representation parsing. In *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 1: Long Papers)*, pp. 982–991.

Kevin Clark and Christopher D. Manning. 2015. Entity-centric coreference resolution with model stacking. In *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 1: Long Papers)*, pp. 1405–1415.

Kai Sheng Tai, Richard Socher, and Christopher D. Manning. 2015. Improved semantic representations from tree-structured long short-term memory networks. In *Proceedings of the 53rd Annual Meeting of the Association for Computational Linguistics and the 7th International Joint Conference on Natural Language Processing (Volume 1: Long Papers)*, pp. 1556–1566.

Hieu Pham, Thang Luong, and Christopher Manning. 2015. Learning distributed representations for multilingual text sequences. In *Proceedings of the 1st Workshop on Vector Space Modeling for Natural Language Processing*, pp. 88–94.

Thang Luong, Hieu Pham, and Christopher D. Manning. 2015. Bilingual word representations with monolingual quality in mind. In *Proceedings of the 1st Workshop on Vector Space Modeling for Natural Language Processing*, pp. 151–159.

Sebastian Schuster, Ranjay Krishna, Angel Chang, Li Fei-Fei, and Christopher D. Manning. 2015. Generating semantically precise scene graphs from textual descriptions for improved image retrieval. In *Proceedings of the Fourth Workshop on Vision and Language*, pp. 70–80.

Samuel R. Bowman, Christopher Potts, and Christopher D. Manning. 2015. Recursive neural networks can learn logical semantics. In *Proceedings of the 3rd Workshop on Continuous Vector Space Models and their Compositionality*, pp. 12–21.

Sonal Gupta and Christopher D. Manning. 2015. Distributed representations of words to guide bootstrapped entity classifiers. In *Proceedings of the 2015 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, pp. 1215–1220.

Romain Paulus, Richard Socher, and Christopher D Manning. 2014. Global belief recursive neural networks. In Z. Ghahramani, M. Welling, C. Cortes, N. D. Lawrence, and K. Q. Weinberger (eds.), *Advances in Neural Information Processing Systems 27*, pp. 2888–2896.

Roy Frostig, Sida Wang, Percy S Liang, and Christopher D Manning. 2014. Simple map inference via low-rank relaxations. In Z. Ghahramani, M. Welling, C. Cortes, N. D. Lawrence, and K. Q. Weinberger (eds.), *Advances in Neural Information Processing Systems 27*, pp. 3077–3085.

Vivek Srikumar and Christopher D Manning. 2014. Learning distributed representations for structured output prediction. In Z. Ghahramani, M. Welling, C. Cortes, N. D. Lawrence, and K. Q. Weinberger (eds.), *Advances in Neural Information Processing Systems 27*, pp. 3266–3274.

Danqi Chen and Christopher D Manning. 2014. A fast and accurate dependency parser using neural networks. In *Empirical Methods in Natural Language Processing (EMNLP)*.

Gabor Angeli and Christopher D. Manning. 2014. Naturalli: Natural logic inference for common sense reasoning. In *Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 534–545.

Spence Green, Sida I. Wang, Jason Chuang, Jeffrey Heer, Sebastian Schuster, and Christopher D. Manning. 2014. Human effort and machine learnability in computer aided translation. In *Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 1225–1236.

Jonathan Berant, Vivek Srikumar, Pei-Chun Chen, Abby Vander Linden, Brittany Harding, Brad Huang, Peter Clark, and Christopher D. Manning. 2014. Modeling biological processes for reading comprehension. In *Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 1499–1510.

Jeffrey Pennington, Richard Socher, and Christopher Manning. 2014. Glove: Global vectors for word representation. In *Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 1532–1543.

Gabor Angeli, Julie Tibshirani, Jean Wu, and Christopher D. Manning. 2014. Combining distant and partial supervision for relation extraction. In *Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 1556–1567.

Angel Chang, Manolis Savva, and Christopher D. Manning. 2014. Learning spatial knowledge for text to 3d scene generation. In *Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 2028–2038.

Manolis Savva, Angel X. Chang, Christopher D. Manning, and Pat Hanrahan. 2014. TransPhoner: Automated mnemonic keyword generation. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI 2014)*, pp. 3725–3734.

Julie Tibshirani and Christopher D. Manning. 2014. Robust logistic regression using shift parameters. In *Proceedings of the Association for Computational Linguistics*.

Kenneth Heafield, Michael Kayser, and Christopher D. Manning. 2014. Faster Phrase-Based decoding by refining feature state. In *Proceedings of the Association for Computational Linguistics*, Baltimore, MD, USA.

Mengqiu Wang, Rob Voigt, and Christopher D. Manning. 2014. Two knives cut better than one: Chinese word segmentation with dual decomposition. In *Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics (ACL 2014): Short Papers*.

Will Monroe, Spence Green, and Christopher D. Manning. 2014. Word segmentation of informal arabic with domain adaptation. In *Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics (ACL 2014): Short Papers*.

Sonal Gupta and Christopher D. Manning. 2014. Improved pattern learning for bootstrapped entity extraction. In *Proceedings of the Eighteenth Conference on Computational Natural Language Learning (CoNLL)*.

Spence Green, Daniel Cer, and Christopher D. Manning. 2014a. An empirical comparison of features and tuning for phrase-based machine translation. In *Proceedings of the ACL 2014 Ninth Workshop on Statistical Machine Translation*.

Spence Green, Daniel Cer, and Christopher D. Manning. 2014b. Phrasal: A toolkit for new directions in statistical machine translation. In *Proceedings of the ACL 2014 Ninth Workshop on Statistical Machine Translation*.

Richard Socher, Milind Ganjoo, Christopher D. Manning, and Andrew Y. Ng. 2013a. Zero-shot learning through cross-modal transfer. In *Advances in Neural Information Processing Systems 26 (NIPS 2013)*, pp. 935–943.

Richard Socher, Danqi Chen, Christopher D Manning, and Andrew Ng. 2013b. Reasoning with neural tensor networks for knowledge base completion. In *Advances in Neural Information Processing Systems 26 (NIPS 2013)*, pp. 926–934.

Sida Wang, Mengqiu Wang, Stefan Wager, Percy Liang, and Christopher D. Manning. 2013. Feature noising for log-linear structured prediction. In *Proceedings of the 2013 Conference on Empirical Methods in Natural Language Processing*, pp. 1170–1179.

Richard Socher, Alex Perelygin, Jean Wu, Jason Chuang, Christopher D. Manning, Andrew Ng, and Christopher Potts. 2013. Recursive deep models for semantic compositionality over a sentiment treebank. In *Proceedings of the 2013 Conference on Empirical Methods in Natural Language Processing*, pp. 1631–1642.

Will Y. Zou, Richard Socher, Daniel Cer, and Christopher D. Manning. 2013. Bilingual word embeddings for phrase-based machine translation. In *Proceedings of the 2013 Conference on Empirical Methods in Natural Language Processing*, pp. 1393–1398.

Aju Thalappillil Scaria, Jonathan Berant, Mengqiu Wang, Peter Clark, Justin Lewis, Brittany Harding, and Christopher D. Manning. 2013. Learning biological processes with global constraints. In *Proceedings of EMNLP*.

Gabor Angeli and Christopher Manning. 2013. Philosophers are mortal: Inferring the truth of unseen facts. In *Proceedings of the Seventeenth Conference on Computational Natural Language Learning*, pp. 133–142.

Thang Luong, Richard Socher, and Christopher Manning. 2013. Better word representations with recursive neural networks for morphology. In *Proceedings of the Seventeenth Conference on Computational Natural Language Learning*, pp. 104–113.

Mengqiu Wang, Wanxiang Che, and Christopher D. Manning. 2013. Effective bilingual constraints for semi-supervised learning of named entity recognizers. In *Proceedings of AAAI*.

Spence Green, Jeffrey Heer, and Christopher D. Manning. 2013. The efficacy of human post-editing for language translation. In *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, pp. 439–448.

Richard Socher, John Bauer, Christopher D. Manning, and Andrew Y. Ng. 2013. Parsing with compositional vector grammars. In *Proceedings of the 51st Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 455–465.

Marie-Catherine de Marneffe, Miriam Connor, Natalia Silveira, Samuel R. Bowman, Timothy Dozat, and Christopher D. Manning. 2013. More constructions, more genres: Extending Stanford dependencies. In *Proceedings of the Second International Conference on Dependency Linguistics (DepLing 2013)*, pp. 187–196.

Daniel Cer, Christopher D. Manning, and Dan Jurafsky. 2013. Positive diversity tuning for machine translation system combination. In *Proceedings of the Eighth Workshop on Statistical Machine Translation*, pp. 320–328.

Spence Green, Daniel Cer, Kevin Reschke, Rob Voigt, John Bauer, Sida Wang, Natalia Silveira, Julia Neidert, and Christopher D. Manning. 2013. Feature-rich phrase-based translation: Stanford University's submission to the WMT 2013 translation task. In *Proceedings of the Eighth Workshop on Statistical Machine Translation*, pp. 148–153.

Jason Chuang, Sonal Gupta, Christopher D. Manning, and Jeffrey Heer. 2013. Topic model diagnostics: Assessing domain relevance via topical alignment. In *International Conference on Machine Learning (ICML)*.

Mengqiu Wang, Wanxiang Che, and Christopher D. Manning. 2013. Joint word alignment and bilingual named entity recognition using dual decomposition. In *Proceedings of the 51st Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 1073–1082.

Spence Green, Sida Wang, Daniel Cer, and Christopher D. Manning. 2013. Fast and adaptive online training of feature-rich translation models. In *Proceedings of the 51st Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 311–321.

Sida Wang and Christopher Manning. 2013a. Fast dropout training. In *Proceedings of the 30th International Conference on Machine Learning (ICML-13)*, pp. 118–126.

Mengqiu Wang and Christopher D. Manning. 2013b. Learning a product of experts with elitist lasso. In *Proceedings of the 6th International Joint Conference on Natural Language Processing (IJCNLP)*.

Mengqiu Wang and Christopher D. Manning. 2013c. Effect of non-linear deep architecture in sequence labeling. In *Proceedings of the 6th International Joint Conference on Natural Language Processing (IJCNLP)*.

Wanxiang Che, Mengqiu Wang, Christopher D. Manning, and Ting Liu. 2013. Named entity recognition with bilingual constraints. In *Proceedings of NAACL HLT*, pp. 52–62.

Richard Socher and Brody Huval and Bharath Bhat and Christopher D. Manning and Andrew Y. Ng. 2012. Convolutional-Recursive Deep Learning for 3D Object Classification. In *Advances in Neural Information Processing Systems 25*.

Richard Socher, Brody Huval, Christopher D. Manning, and Andrew Y. Ng. 2012. Semantic compositionality through recursive matrix-vector spaces. In *Proceedings of the 2012 Joint Conference on Empirical Methods in Natural Language Processing and Computational Natural Language Learning*, pp. 1201–1211.

Mengqiu Wang and Christopher D. Manning. 2012. Probabilistic finite state machines for regression-based MT evaluation. In *Proceedings of the 2012 Joint Conference on Empirical Methods in Natural Language Processing and Computational Natural Language Learning*, pp. 984–994.

David McClosky and Christopher D. Manning. 2012. Learning constraints for consistent timeline extraction. In *Proceedings of the 2012 Joint Conference on Empirical Methods in Natural Language Processing and Computational Natural Language Learning*, pp. 873–882.

Mihai Surdeanu, Julie Tibshirani, Ramesh Nallapati, and Christopher D. Manning. 2012. Multi-instance multi-label learning for relation extraction. In *Proceedings of the 2012 Joint Conference on Empirical Methods in Natural Language Processing and Computational Natural Language Learning*, pp. 455–465.

Eric Huang, Richard Socher, Christopher Manning, and Andrew Ng. 2012. Improving word representations via global context and multiple word prototypes. In *Proceedings of the 50th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pp. 873–882.

Sida Wang and Christopher Manning. 2012. Baselines and bigrams: Simple, good sentiment and topic classification. In *Proceedings of the 50th Annual Meeting of the Association for Computational Linguistics (Volume 2: Short Papers)*, pp. 90–94.

Robert Munro and Christopher D. Manning. 2012a. Accurate unsupervised joint named-entity extraction from unaligned parallel text. In *Proceedings of the 4th Named Entity Workshop (NEWS) 2012*, pp. 21–29.

Robert Munro and Christopher D. Manning. 2012b. Short message communications: users, topics, and in-language processing. In *Proceedings of the 2nd ACM Symposium on Computing for Development (ACM DEV '12)*.

Gabor Angeli, Christopher Manning, and Daniel Jurafsky. 2012. Parsing time: Learning to interpret time expressions. In *Proceedings of the 2012 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, pp. 446–455.

Spence Green, Nicholas Andrews, Matthew R. Gormley, Mark Dredze, and Christopher D. Manning. 2012. Entity clustering across languages. In *Proceedings of the 2012 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, pp. 60–69.

Jason Chuang, Christopher D. Manning, and Jeffrey Heer. 2012a. Termite: Visualization techniques for assessing textual topic models. In *Advanced Visual Interfaces*.

Jason Chuang, Daniel Ramage, Christopher D. Manning, and Jeffrey Heer. 2012b. Interpretation and trust: Designing model-driven visualizations for text analysis. In *ACM Human Factors in Computing Systems (CHI)*.

Mengqiu Wang and Christopher Manning. 2012. SPEDE: Probabilistic edit distance metrics for mt evaluation. In *Proceedings of the Seventh Workshop on Statistical Machine Translation*, pp. 76–83.

Sonal Gupta and Christopher Manning. 2011. Analyzing the dynamics of research by extracting key aspects of scientific papers. In *Proceedings of 5th International Joint Conference on Natural Language Processing*, pp. 1–9.

Marie-Catherine de Marneffe, Christopher D. Manning, and Christopher Potts. 2011. Veridicality and utterance understanding. In *Proceedings of the 2011 Fifth IEEE International Conference on Semantic Computing*, pp. 430–437.

Daniel Ramage, Christopher D. Manning, and Susan Dumais. 2011. Partially labeled topic models for interpretable text mining. In *Proceedings of the 17th ACM SIGKDD Conference on Knowledge Discovery and Data Mining*.

Spence Green, Marie-Catherine de Marneffe, John Bauer, and Christopher D. Manning. 2011. Multiword expression identification with tree substitution grammars: A parsing *tour de force* with French. In *Proceedings of the 2011 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 725–735.

Richard Socher, Jeffrey Pennington, Eric H. Huang, Andrew Y. Ng, and Christopher D. Manning. 2011. Semi-Supervised Recursive Autoencoders for Predicting Sentiment Distributions. In *Proceedings of the 2011 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pp. 151–161.

Christopher D. Manning. 2011. Part-of-speech tagging from 97% to 100%: Is it time for some linguistics? In Alexander Gelbukh (ed.), *Computational Linguistics and Intelligent Text Processing, 12th International Conference, CICLing 2011, Proceedings, Part I*, volume 6608 of *Lecture Notes in Computer Science*, pp. 171–189. Springer.

Richard Socher, Cliff Chiung-Yu Lin, Andrew Y. Ng, and Christopher D. Manning. 2011. Parsing natural scenes and natural language with recursive neural networks. In *Proceedings of the 26th International Conference on Machine Learning (ICML)*.

Ramesh Nallapati, Daniel McFarland, and Christopher Manning. 2011. TopicFlow model: Unsupervised learning of topic specific influences of hyperlinked documents. In *Artificial Intelligence and Statistics*.

David McClosky, Mihai Surdeanu, and Christopher D. Manning. 2011. Event extraction as dependency parsing. In *Proceedings of the 49th Annual Meeting of the Association for Computational Linguistics: Human Language Technologies*, pp. 1626–1635.

Mihai Surdeanu, Ramesh Nallapati, and Christopher D. Manning. 2011. Risk analysis for intellectual property litigation. In *Proceedings of the Thirteenth International Conference on Artificial Intelligence and Law*.

Richard Socher, Andrew Maas, and Christopher D. Manning. 2011. Spectral Chinese restaurant processes: Nonparametric clustering based on similarities. In *Fourteenth International Conference on Artificial Intelligence and Statistics (AISTATS)*.

Mihai Surdeanu, David McClosky, Mason R. Smith, Andrey Gusev, and Christopher D. Manning. 2011. Customizing an information extraction system to a new domain. In *Proceedings of the Workshop on Relational Models of Semantics*, pp. 2–10.

David McClosky, Mihai Surdeanu, and Christopher D. Manning. 2011. Event extraction as dependency parsing for BioNLP 2011. In *Proceedings of BioNLP Shared Task 2011 Workshop*, pp. 41–45.

Sebastian Riedel, David McClosky, Mihai Surdeanu, Andrew McCallum, and Christopher D. Manning. 2011. Model combination for event extraction in BioNLP 2011. In *Proceedings of BioNLP Shared Task 2011 Workshop*, pp. 51–55.

Karthik Raghunathan, Heeyoung Lee, Sudarshan Rangarajan, Nathanael Chambers, Mihai Surdeanu, Dan Jurafsky, and Christopher Manning. 2010. A multi-pass sieve for coreference resolution. In *Proceedings of the 2010 Conference on Empirical Methods in Natural Language Processing*, pp. 492–501.

Spence Green and Christopher D. Manning. 2010. Better Arabic parsing: Baselines, evaluations, and analysis. In *Proceedings of the 23rd International Conference on Computational Linguistics (Coling 2010)*, pp. 394–402.

Mengqiu Wang and Christopher Manning. 2010. Probabilistic tree-edit models with structured latent variables for textual entailment and question answering. In *Proceedings of the 23rd International Conference on Computational Linguistics (Coling 2010)*, pp. 1164–1172.

Marie-Catherine de Marneffe, Christopher D. Manning, and Christopher Potts. 2010. "Was it good? It was provocative." Learning the meaning of scalar adjectives. In *Proceedings of the 48th Annual Meeting of the Association for Computational Linguistics*, pp. 167–176.

Jenny Rose Finkel and Christopher D. Manning. 2010. Hierarchical joint learning: Improving joint parsing and named entity recognition with non-jointly labeled data. In *Proceedings of the 48th Annual Meeting of the Association for Computational Linguistics*, pp. 720–728.

Valentin I. Spitkovsky, Hiyan Alshawi, Daniel Jurafsky, and Christopher D. Manning. 2010. Viterbi training improves unsupervised dependency parsing. In *Proceedings of the Fourteenth Conference on Computational Natural Language Learning*, pp. 9–17.

Robert Munro and Christopher D. Manning. 2010. Subword variation in text message classification. In *Human Language Technologies: The 2010 Annual Conference of the North American Chapter of the Association for Computational Linguistics*, pp. 510–518.

Daniel Cer, Christopher D. Manning, and Daniel Jurafsky. 2010. The best lexical metric for phrase-based statistical mt system optimization. In *Human Language Technologies: The 2010 Annual Conference of the North American Chapter of the Association for Computational Linguistics*, pp. 555–563.

Mihai Surdeanu and Christopher D. Manning. 2010. Ensemble models for dependency parsing: Cheap and good? In *Human Language Technologies: The 2010 Annual Conference of the North American Chapter of the Association for Computational Linguistics*, pp. 649–652.

Spence Green, Michel Galley, and Christopher D. Manning. 2010. Improved models of distortion cost for statistical machine translation. In *Human Language Technologies: The 2010 Annual Conference of the North American Chapter of the Association for Computational Linguistics*, pp. 867–875.

Michel Galley and Christopher D. Manning. 2010. Accurate non-hierarchical phrase-based translation. In *Human Language Technologies: The 2010 Annual Conference of the North American Chapter of the Association for Computational Linguistics*, pp. 966–974.

Marie-Catherine de Marneffe, Scott Grimm, and Christopher Potts. 2009. Not a simple yes or no: Uncertainty in indirect answers. In *Proceedings of the SIGDIAL 2009 Conference*, pp. 136–143.

Spence Green, Conal Sathi, and Christopher D. Manning. 2009. NP subject detection in verb-initial Arabic clauses. In *Proceedings of the Third Workshop on Computational Approaches to Arabic Script-based Languages (CAASL3)*.

Jenny Rose Finkel and Christopher D. Manning. 2009. Nested named entity recognition. In *Proceedings of the 2009 Conference on Empirical Methods in Natural Language Processing*, pp. 141–150.

Daniel Ramage, David Hall, Ramesh Nallapati, and Christopher D. Manning. 2009. Labeled LDA: A supervised topic model for credit attribution in multi-labeled corpora. In *Proceedings of the 2009 Conference on Empirical Methods in Natural Language Processing*, pp. 248–256.

Sebastian Padó, Michel Galley, Dan Jurafsky, and Chris Manning. 2009. Robust machine translation evaluation with entailment features. In *Proceedings of the Joint Conference of the 47th Annual Meeting of the ACL and the 4th International Joint Conference on Natural Language Processing of the AFNLP (ACL 2009)*, pp. 297–305.

Michel Galley and Christopher D. Manning. 2009. Quadratic-time dependency parsing for machine translation. In *Proceedings of the Joint Conference of the 47th Annual Meeting of the ACL and the 4th International Joint Conference on Natural Language Processing of the AFNLP*, pp. 773–781.

Daniel Ramage, Anna N. Rafferty, and Christopher D. Manning. 2009. Random walks for text semantic similarity. In *Proceedings of the 2009 Workshop on Graph-based Methods for Natural Language Processing (TextGraphs-4)*, pp. 23–31.

Eric Yeh, Daniel Ramage, Christopher D. Manning, Eneko Agirre, and Aitor Soroa. 2009. Wikiwalk: Random walks on Wikipedia for semantic relatedness. In *Proceedings of the 2009 Workshop on Graph-based Methods for Natural Language Processing (TextGraphs-4)*, pp. 41–49.

Marie-Catherine de Marneffe, Sebastian Pado, and Christopher D. Manning. 2009. Multi-word expressions in textual inference: Much ado about nothing? In *Proceedings of the 2009 Workshop on Applied Textual Inference*, pp. 1–9.

David Clausen and Christopher D. Manning. 2009. Presupposed content and entailments in natural language inference. In *Proceedings of the 2009 Workshop on Applied Textual Inference*, pp. 70–73.

Jenny Rose Finkel and Christopher D. Manning. 2009a. Joint parsing and named entity recognition. In *Proceedings of Human Language Technologies: The 2009 Annual Conference of the North American Chapter of the Association for Computational Linguistics*, pp. 326–334.

Jenny Rose Finkel and Christopher D. Manning. 2009b. Hierarchical Bayesian domain adaptation. In *Proceedings of Human Language Technologies: The 2009 Annual Conference of the North American Chapter of the Association for Computational Linguistics*, pp. 602–610.

Pi-Chuan Chang, Huihsin Tseng, Dan Jurafsky, and Christopher D. Manning. 2009a. Discriminative reordering with Chinese grammatical relations features. In *Third Workshop on Syntax and Structure in Statistical Translation*, pp. 51–59.

Pi-Chuan Chang, Dan Jurafsky, and Christopher D. Manning. 2009b. Disambiguating "DE" for Chinese-English machine translation. In *Fourth Workshop on Statistical Machine Translation*.

Sebastian Padó, Michel Galley, Dan Jurafsky, and Christopher D. Manning. 2009. Textual entailment features for machine translation evaluation. In *Proceedings of the Fourth Workshop on Statistical Machine Translation*, pp. 37–41.

Daniel Ramage, Paul Heymann, Christopher D. Manning, and Hector Garcia-Molina. 2009. Clustering the tagged web. In *Second ACM International Conference on Web Search and Data Mining (WSDM 2009)*.

Bill MacCartney and Christopher D. Manning. 2009. An extended model of natural logic. In *Proceedings of the Eight International Conference on Computational Semantics*, pp. 140–156.

Ramesh Nallapati, Mihai Surdeanu, and Manning Christopher. 2009. CorrActive learning: Learning from noisy data through human interaction. In *IJCAI workshop on Intelligence and Interaction*.

David Hall, Daniel Jurafsky, and Christopher D. Manning. 2008. Studying the history of ideas using topic models. In *Proceedings of the 2008 Conference on Empirical Methods in Natural Language Processing*, pp. 363–371.

Ramesh Nallapati and Christopher D. Manning. 2008. Legal docket classification: Where machine learning stumbles. In *Proceedings of the 2008 Conference on Empirical Methods in Natural Language Processing*, pp. 438–446.

Bill MacCartney, Michel Galley, and Christopher D. Manning. 2008. A phrase-based alignment model for natural language inference. In *Proceedings of the 2008 Conference on Empirical Methods in Natural Language Processing*, pp. 802–811.

Michel Galley and Christopher D. Manning. 2008. A simple and effective hierarchical phrase reordering model. In *Proceedings of the 2008 Conference on Empirical Methods in Natural Language Processing*, pp. 848–856.

Bill MacCartney and Christopher D. Manning. 2008. Modeling semantic containment and exclusion in natural language inference. In *22nd International Conference on Computational Linguistics (Coling 2008)*, pp. 521–528.

Marie-Catherine de Marneffe and Christopher D. Manning. 2008. The Stanford typed dependencies representation. In *Proceedings of the workshop on Cross-Framework and Cross-Domain Parser Evaluation*, pp. 1–8.

Anna Rafferty and Christopher D. Manning. 2008. Parsing three German treebanks: Lexicalized and unlexicalized baselines. In *Proceedings of the Workshop on Parsing German*, pp. 40–46.

Marie-Catherine de Marneffe, Anna N. Rafferty, and Christopher D. Manning. 2008. Finding contradictions in text. In *Proceedings of the 46th Annual Meeting of the Association for Computational Linguistics (ACL 2008)*, pp. 1039–1047.

Jenny Rose Finkel, Alex Kleeman, and Christopher D. Manning. 2008. Efficient, feature-based, conditional random field parsing. In *Proceedings of the 46th Annual Meeting of the Association for Computational Linguistics (ACL 2008)*, pp. 959–967.

Sharon Goldwater, Dan Jurafsky, and Christopher D. Manning. 2008. Which words are hard to recognize? Prosodic, lexical, and disfluency factors that increase ASR error rates. In *Proceedings of the 46th Annual Meeting of the Association for Computational Linguistics (ACL 2008)*, pp. 380–388.

Jenny Rose Finkel and Christopher D. Manning. 2008. Enforcing transitivity in coreference resolution. In *Proceedings of the 46th Annual Meeting of the Association for Computational Linguistics (ACL 2008), Short Papers*, pp. 45–48.

Daniel Cer, Daniel Jurafsky, and Christopher D. Manning. 2008. Regularization and search for minimum error rate training. In *Proceedings of the Third Workshop on Statistical Machine Translation*, pp. 26–34.

Pi-Chuan Chang, Michel Galley, and Christopher D. Manning. 2008. Optimizing Chinese word segmentation for machine translation performance. In *Proceedings of the Third Workshop on Statistical Machine Translation*, pp. 224–232.

Yun-Hsuan Sung, Constantinos Boulis, Christopher Manning, and Dan Jurafsky. 2007. Regularization, adaptation, and non-independent features improve hidden conditional random fields for phone classification. In *IEEE Automatic Speech Recognition and Understanding Workshop*.

Bill MacCartney and Christopher D. Manning. 2007. Natural logic for textual inference. In *ACL-PASCAL Workshop on Textual Entailment and Paraphrasing*, pp. 193–200.

Nathanael Chambers, Daniel Cer, Trond Grenager, David Hall, Chloé Kiddon, Bill MacCartney, Marie-Catherine de Marneffe, Daniel Ramage, Eric Yeh, and Christopher D. Manning. 2007. Learning alignments and leveraging natural logic. In *ACL-PASCAL Workshop on Textual Entailment and Paraphrasing*, pp. 165–170.

Jenny Rose Finkel, Trond Grenager, and Christopher D. Manning. 2007. The infinite tree. In *Proceedings of the 45th Annual Meeting of the Association of Computational Linguistics*, pp. 272–279, Prague, Czech Republic. Association for Computational Linguistics.

Gang Ji, Jeff Bilmes, Jeff Michels, Katrin Kirchhoff, and Chris Manning. 2006. Graphical model representations of word lattices. In *IEEE/ACL 2006 Workshop on Spoken Language Technology (SLT2006)*.

Trond Grenager and Christopher D. Manning. 2006. Unsupervised discovery of a statistical verb lexicon. In *2006 Conference on Empirical Methods in Natural Language Processing (EMNLP 2006)*, pp. 1–8.

Jenny Rose Finkel, Christopher D. Manning, and Andrew Y. Ng. 2006. Solving the problem of cascading errors: Approximate Bayesian inference for linguistic annotation pipelines. In *2006 Conference on Empirical Methods in Natural Language Processing (EMNLP 2006)*, pp. 618–626.

Vijay Krishnan and Christopher D. Manning. 2006. An effective two-stage model for exploiting non-local dependencies in named entity recognition. In *Proceedings of the 21st International Conference on Computational Linguistics and 44th Annual Meeting of the Association for Computational Linguistics*, pp. 1121–1128.

Bill MacCartney, Trond Grenager, Marie-Catherine de Marneffe, Daniel Cer, and Christopher D. Manning. 2006. Learning to recognize features of valid textual entailments. In *Proceedings of the Human Language Technology Conference of the North American Chapter of the Association for Computational Linguistics (HLT-NAACL 2006)*, pp. 41–48.

Aria D. Haghighi, Andrew Y. Ng, and Christopher D. Manning. 2005. Robust textual inference via graph matching. In *NAACL 2005*, pp. 387–394.

Huihsin Tseng, Daniel Jurafsky, and Christopher Manning. 2005. Morphological features help POS tagging of unknown words across language varieties. In *Fourth SIGHAN Workshop on Chinese Language Processing*, pp. 32–39.

Jenny Rose Finkel, Trond Grenager, and Christopher Manning. 2005. Incorporating non-local information into information extraction systems by Gibbs sampling. In *Proceedings of the 43rd Annual Meeting of the Association for Computational Linguistics (ACL 2005)*, pp. 363–370.

Kristina Toutanova, Aria Haghighi, and Christopher D. Manning. 2005. Joint learning improves semantic role labeling. In *Proceedings of the 43rd Annual Meeting of the Association for Computational Linguistics (ACL 2005)*, pp. 589–596.

Trond Grenager, Dan Klein, and Christopher D. Manning. 2005. Accurate unsupervised learning of field structure models. In *Proceedings of the 43rd Annual Meeting of the Association for Computational Linguistics (ACL 2005)*, pp. 371–378.

Rajat Raina, Andrew Y. Ng, and Christopher D. Manning. 2005. Robust textual inference via learning and abductive reasoning. In *Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI 2005)*, pp. 1099–1105.

Aria Haghighi, Kristina Toutanova, and Christopher D. Manning. 2005. A joint model for semantic role labeling. In *Ninth Conference on Computational Natural Language Learning (CoNLL 2005)*, pp. 173–176.

Ben Taskar, Dan Klein, Michael Collins, Daphne Koller, and Christopher Manning. 2004. Max-margin parsing. In *Proceedings of the 2004 Conference on Empirical Methods in Natural Language Processing (EMNLP 2004)*, pp. 1–8.

Galen Andrew, Trond Grenager, and Christopher Manning. 2004. Verb sense and subcategorization: Using joint inference to improve performance on complementary tasks. In *Proceedings of the 2004 Conference on Empirical Methods in Natural Language Processing (EMNLP 2004)*, pp. 150–157.

Kristina Toutanova, Penka Markova, and Christopher D. Manning. 2004a. The leaf projection path view of parse trees: Exploring string kernels for HPSG parse selection. In *Proceedings of the 2004 Conference on Empirical Methods in Natural Language Processing (EMNLP 2004)*, pp. 166–173.

Kristina Toutanova, Christopher D. Manning, and Andrew Y. Ng. 2004b. Learning random walk models for inducing word dependency distributions. In *Proceedings of the 21st International Conference on Machine Learning (ICML 2004)*, pp. 815–822.

Ofer Dekel, Christopher Manning, and Yoram Singer. 2004. Log-linear models for label ranking. In Sebastian Thrun, Lawrence Saul, and Bernhard Schölkopf (eds.), *Advances in Neural Information Processing Systems 16*, pp. 497–504. Cambridge, MA: MIT Press.

Roger Levy and Christopher D. Manning. 2004. Deep dependencies from context-free statistical parsers: correcting the surface dependency approximation. In *Proceedings of the 42nd Annual Meeting of the Association for Computational Linguistics (ACL 2004)*, pp. 328–335.

Dan Klein and Christopher D. Manning. 2004. Corpus-based induction of syntactic structure: Models of dependency and constituency. In *Proceedings of the 42nd Annual Meeting of the Association for Computational Linguistics (ACL 2004)*, pp. 479–486.

Jenny Finkel, Shipra Dingare, Huy Nguyen, Malvina Nissim, Christopher Manning, and Gail Sinclair. 2004. Exploiting context for biomedical entity recognition: From syntax to the web. In *Joint Workshop on Natural Language Processing in Biomedicine and its Applications (BioNLP/NLPBA)*, pp. 88–91. At Coling 2004.

Iddo Lev, Bill MacCartney, Christopher D. Manning, and Roger Levy. 2004. Solving logic puzzles: From robust processing to precise semantics. In *2nd Workshop on Text Meaning and Interpretation*, pp. 9–16. Held at ACL 2004.

Satoshi Oyama and Christopher D. Manning. 2004. Using feature conjunctions across examples for learning pairwise classifiers. In *Proceedings of the 15th European Conference on Machine Learning (ECML 2004)*, pp. 322–333.

Dan Klein and Christopher D. Manning. 2003. Accurate unlexicalized parsing. In *Proceedings of the 41st Annual Meeting of the Association for Computational Linguistics (ACL 2003)*, pp. 423–430.

Roger Levy and Christopher D. Manning. 2003. Is it harder to parse Chinese or the Chinese Treebank? In *Proceedings of the 41st Annual Meeting of the Association for Computational Linguistics (ACL 2004)*, pp. 439–446.

Dan Klein and Christopher D. Manning. 2003. Factored A* search for models over sequences and trees. In *Proceedings of the Seventeenth International Joint Conference on Artificial Intelligence (IJCAI 2003)*, pp. 1246–1251.

Sepandar D. Kamvar, Dan Klein, and Christopher D. Manning. 2003. Spectral learning. In *Proceedings of the Seventeenth International Joint Conference on Artificial Intelligence (IJCAI 2003)*, pp. 561–566.

Kristina Toutanova, Dan Klein, Christopher D. Manning, and Yoram Singer. 2003. Feature-rich part-of-speech tagging with a cyclic dependency network. In *Human Language Technology Conference of the North American Chapter of the Association for Computational Linguistics (HLT-NAACL 2003)*, pp. 252–259.

Dan Klein and Christopher D. Manning. 2003. A* parsing: Fast exact Viterbi parse selection. In *Proceedings of the 2003 Human Language Technology Conference of the North American Chapter of the Association for Computational Linguistics (HLT-NAACL 2003)*, pp. 119–126.

Sepandar D. Kamvar, Taher H. Haveliwala, Christopher D. Manning, and Gene H. Golub. 2003. Extrapolation methods for accelerating pagerank computations. In *Proceedings of The Twelfth International World Wide Web Conference (WWW 2003)*, pp. 261–270.

Dan Klein and Christopher D. Manning. 2003. Fast exact inference with a factored model for natural language parsing. In Suzanna Becker, Sebastian Thrun, and Klaus Obermayer (eds.), *Advances in Neural Information Processing Systems*, volume 15, pp. 3–10. MIT Press.

Kristina Toutanova, Mark Mitchell, and Christopher Manning. 2003. Optimizing local probability models for statistical parsing. In *Proceedings of 14th European Conference on Machine Learning (ECML 2003)*, pp. 409–420.

Cynthia A. Thompson, Roger Levy, and Christopher D. Manning. 2003. A generative model for semantic role labeling. In *Proceedings of 14th European Conference on Machine Learning (ECML 2003)*, pp. 397–408.

Dan Klein, Joseph Smarr, Huy Nguyen, and Christopher D. Manning. 2003. Named entity recognition with character-level models. In *Proceedings the Seventh Conference on Natural Language Learning (CoNLL 2003)*, pp. 180–183.

Cynthia Thompson, Joseph Smarr, Huy Nguyen, and Christopher D. Manning. 2003. Finding educational resources on the web: Exploiting automatic extraction of metadata. In *Proceedings of the International Workshop on Adaptive Text Extraction and Mining*, Croatia. Workshop at the 14th European Conference on Machine Learning.

Dan Klein and Christopher D. Manning. 2002. A generative constituent-context model for improved grammar induction. In *Proceedings of the 40th Annual Meeting of the Association for Computational Linguistics (ACL 2002)*, pp. 128–135.

Dan Klein, Sepandar D. Kamvar, and Christopher D. Manning. 2002. From instance-level constraints to space-level constraints: Making the most of prior knowledge in data clustering. In *Proceedings of the 19th International Conference on Machine Learning (ICML 2002)*, pp. 307–313.

Sepandar D. Kamvar, Dan Klein, and Christopher D. Manning. 2002. Interpreting and extending classical agglomerative clustering algorithms using a model-based approach. In *Proceedings of the 19th International Conference on Machine Learning (ICML 2002)*, pp. 283–290.

Dan Klein and Christopher D. Manning. 2002. Conditional structure versus conditional estimation in NLP models. In *2002 Conference on Empirical Methods in Natural Language Processing (EMNLP 2002)*, pp. 9–16.

Kristina Toutanova, H. Tolga Ilhan, and Christopher D. Manning. 2002. Extensions to HMM-based statistical word alignment models. In *2002 Conference on Empirical Methods in Natural Language Processing (EMNLP 2002)*, pp. 87–94.

Dan Klein and Christopher D. Manning. 2002. Natural language grammar induction using a constituent-context model. In Thomas G. Dietterich, Suzanna Becker, and Zoubin Ghahramani (eds.), *Advances in Neural Information Processing Systems 14*, volume 1, pp. 35–42. MIT Press.

Stephan Oepen, Ezra Callahan, Dan Flickinger, Christopher D. Manning, and Kristina Toutanova. 2002. LinGO Redwoods: A rich and dynamic treebank for HPSG. In *Beyond PARSEVAL workshop at the Third International Conference on Language Resources and Evaluation (LREC 2002).*

Dan Klein, Kristina Toutanova, H. Tolga Ilhan, Sepandar D. Kamvar, and Christopher D. Manning. 2002. Combining heterogeneous classifiers for word-sense disambiguation. In *Workshop on Word Sense Disambiguation: Recent Successes and Future Directions*, pp. 74–80, University of Pennsylvania. At ACL 40.

Stephan Oepen, Kristina Toutanova, Stuart Shieber, Christopher Manning, Dan Flickinger, and Thorsten Brants. 2002. The LinGO Redwoods treebank: Motivation and preliminary applications. In *Proceedings of the 19th International Conference on Computational Linguistics (COLING 2002)*, pp. 1253–1257, Taipei.

Kristina Toutanova and Christopher D. Manning. 2002. Feature selection for a rich HPSG grammar using decision trees. In *Proceedings of the Sixth Conference on Natural Language Learning (CoNLL-2002)*, pp. 77–83, Taipei.

Dan Klein and Christopher D. Manning. 2001. Parsing with treebank grammars: Empirical bounds, theoretical models, and the structure of the Penn

treebank. In *Proceedings of the 39 Annual Meeting and the 10 Conference of the European Chapter of the Association for Computational Linguistics (ACL 2001)*, pp. 330–337.

H. Tolga Ilhan, Sepandar D. Kamvar, Dan Klein, Christopher D. Manning, and Kristina Toutanova. 2001. Combining heterogeneous classifiers for word-sense disambiguation. In *Proceedings of SENSEVAL-2*, pp. 87–90, Toulouse, France. At ACL 39.

Dan Klein and Christopher D. Manning. 2001. Distributional phrase structure induction. In *Proceedings of the Fifth Conference on Natural Language Learning (CoNLL 2001)*, pp. 113–120.

Kristina Toutanova and Christopher D. Manning. 2000. Enriching the knowledge sources used in a maximum entropy part-of-speech tagger. In *Proceedings of the Joint SIGDAT Conference on Empirical Methods in Natural Language Processing and Very Large Corpora (EMNLP/VLC-2000)*, pp. 63–70, Hong Kong.

Howard R. Strasberg, Christoher D. Manning, T. C. Rindfleisch, and K. L. Melmon. 2000. What's related? generalizing approaches to related articles in medicine. In *Proceedings of the American Medical Informatics Association Fall Symposium (AMIA 2000)*, pp. 838–42.

Miriam Corris, Christopher Manning, Susan Poetsch, and Jane Simpson. 2000. Bilingual dictionaries for Australian languages: User studies on the place of paper and electronic dictionaries. In *Proceedings of the Ninth Euralex International Congress (Euralex 2000)*, pp. 169–181, Stuttgart.

Kevin Jansz, Wee Jim Sng, Nitin Indurkhya, and Christopher Manning. 2000. Using XSL and XQL for efficient customised access to dictionary information. In *Proceedings of AusWeb 2000, the Sixth Australian World Wide Web Conference*, pp. 167–181.

Kevin Jansz, Nitin Indurkhya, and Christopher Manning. 1999. Kirrkirr: Interactive visualisation and multimedia from a structured Warlpiri dictionary. In *Proceedings of AusWeb99, the Fifth Australian World Wide Web Conference*, pp. 302–316.

Christopher D. Manning. 1998. The segmentation problem in morphology learning. In *Proceedings of the Joint Conferences on New Methods in Language Processing and Computational Natural Language Learning, Workshop on Paradigms and Grounding in Language Learning*, pp. 299–305, Flinders University.

Christopher D. Manning. 1997. Experiments with probabilistic context-free grammars derived from the Penn treebank. In *1997 Australasian Natural Language Processing Summer Workshop*, pp. 33–38, Macquarie University.

Christopher D. Manning. 1993. Automatic acquisition of a large subcategorization dictionary from corpora. In *Proceedings of the 31st Annual Meeting of the Association for Computational Linguistics*, pp. 235–242.

Other Writings

Arun Chaganty, Ashwin Paranjape, Jason Bolton, Matthew Lamm, Jinhao Lei, Abigail See, Kevin Clark, Yuhao Zhang, Peng Qi, and Christopher D. Manning. 2017. Stanford at TAC KBP 2017: Building a trilingual relational knowledge graph. In *Text Analysis Conference (TAC 2017)*.

Mohamed Al-Badrashiny, Jason Bolton, Arun Tejavsi Chaganty, Kevin Clark, Craig Harman, Lifu Huang, Matthew Lamm, Jinhao Lei, Di Lu, Xiaoman Pan, Ashwin Paranjape, Ellie Pavlick, Haoruo Peng, Peng Qi, Pushpendre Rastogi, Abigail See, Kai Sun, Max Thomas, Chen-Tse Tsai, Hao Wu, Boliang Zhang, Chris Callison-Burch, Claire Cardie, Heng Ji, Christopher Manning, Smaranda Muresan, Owen C. Rambow, Dan Roth, Mark Sammons, and Benjamin Van Durme. 2017. TinkerBell: Cross-lingual cold-start knowledge base construction. In *Text Analysis Conference (TAC 2017)*.

Yuhao Zhang, Arun Chaganty, Ashwin Paranjape, Danqi Chen, Jason Bolton, Peng Qi, and Christopher D. Manning. 2016. Stanford at TAC KBP 2016: Sealing pipeline leaks and understanding Chinese. In *Proceedings of the Ninth Text Analysis Conference (TAC 2016)*.

Sebastian Schuster and Christopher D. Manning. 2016. Enhanced English Universal Dependencies: An improved representation for natural language understanding tasks. In *Proceedings of the Tenth International Conference on Language Resources and Evaluation (LREC 2016)*, pp. 2371–2378.

Angel Chang, Valentin I. Spitkovsky, Christopher D. Manning, and Eneko Agirre. 2016. A comparison of named-entity disambiguation and word sense disambiguation. In *Proceedings of the Tenth International Conference on Language Resources and Evaluation (LREC 2016)*.

Joakim Nivre, Marie-Catherine de Marneffe, Filip Ginter, Yoav Goldberg, Jan Hajic, Christopher D. Manning, Ryan McDonald, Slav Petrov, Sampo Pyysalo, Natalia Silveira, Reut Tsarfaty, and Daniel Zeman. 2016. Universal Dependencies v1: A multilingual treebank collection. In *Proceedings of the Tenth International Conference on Language Resources and Evaluation (LREC 2016)*.

Gabor Angeli, Victor Zhong, Danqi Chen, Arun Chaganty, Jason Bolton, Melvin Johnson Premkumar, Panupong Pasupat, Sonal Gupta, and Christopher D Manning. 2015. Bootstrapped self training for knowledge base population. In *Proceedings of the Eighth Text Analysis Conference (TAC 2015)*.

Samuel R. Bowman, Christopher D. Manning, and Christopher Potts. 2015a. Tree-structured composition in neural networks without tree-structured architectures. In *Proceedings of the NIPS Workshop on Cognitive Computation: Integrating Neural and Symbolic Approaches*.

Samuel R. Bowman, Christopher Potts, and Christopher D. Manning. 2015b. Learning distributed word representations for natural logic reasoning. In *Proceedings of the AAAI Spring Symposium on Knowledge Representation and Reasoning*.

Shuhei Nojiri and Christopher D. Manning. 2015. Software document terminology recognition. In *Proceedings of the AAAI Spring Symposium on Ambient Intelligence for Health and Cognitive Enhancement*, pp. 49–54.

Gabor Angeli, Sonal Gupta, Melvin Johnson Premkumar, Christopher D. Manning, Christopher Ré, Julie Tibshirani, Jean Y. Wu, Sen Wu, and Ce Zhang. 2014. Stanford's distantly supervised slot filling systems for KBP 2014. In *Proceedings of the Seventh Text Analysis Conference*.

Julia Neidert, Sebastian Schuster, Spence Green, Kenneth Heafield, and Christopher D. Manning. 2014. Stanford University's submissions to the WMT 2014 translation task. In *Proceedings of the ACL 2014 Ninth Workshop on Statistical Machine Translation*, Baltimore, MD, USA.

Angel X. Chang, Manolis Savva, and Christopher D. Manning. 2014. Interactive learning of spatial knowledge for text to 3D scene generation. In *Proceedings of the ACL 2014 Workshop on Interactive Language Learning, Visualization, and Interfaces (ACL-ILLVI)*.

Christopher D. Manning, Mihai Surdeanu, John Bauer, Jenny Finkel, Steven J. Bethard, and David McClosky. 2014. The Stanford CoreNLP natural language processing toolkit. In *Proceedings of 52nd Annual Meeting of the Association for Computational Linguistics: System Demonstrations*, pp. 55–60.

Sonal Gupta and Christopher D. Manning. 2014. Spied: Stanford pattern-based information extraction and diagnostics. In *Proceedings of the ACL 2014 Workshop on Interactive Language Learning, Visualization, and Interfaces (ACL-ILLVI)*.

Kevin Reschke, Martin Jankowiak, Mihai Surdeanu, Christopher D. Manning, and Daniel Jurafsky. 2014. Event extraction using distant supervision. In *Proceedings of LREC 2014*.

Marie-Catherine de Marneffe, Timothy Dozat, Natalia Silveira, Katri Haverinen, Filip Ginter, Joakim Nivre, and Christopher D. Manning. 2014. Universal Stanford dependencies: A cross-linguistic typology. In *Proceedings of the Ninth International Conference on Language Resources and Evaluation (LREC-2014)*.

Natalia Silveira, Timothy Dozat, Marie-Catherine de Marneffe, Samuel Bowman, Miriam Connor, John Bauer, and Christopher D. Manning. 2014. A gold standard dependency corpus for english. In *Proceedings of the Ninth International Conference on Language Resources and Evaluation (LREC-2014)*.

Sida Wang, Roy Frostig, Percy Liang, and Christopher D. Manning. 2014. Relaxations for inference in restricted Boltzmann machines. In *Proceedings of the International Conference on Learning Representations (ICLR, Workshop Track)*.

Angel Chang and Christopher D. Manning. 2013. SUTime: Evaluation in TempEval-3. In *Second Joint Conference on Lexical and Computational Semantics (*SEM), Volume 2: Proceedings of the Seventh International Workshop on Semantic Evaluation (SemEval 2013)*, pp. 78–82.

Danqi Chen, Richard Socher, Christopher D. Manning, and Andrew Y. Ng. 2013. Learning new facts from knowledge bases with neural tensor networks and semantic word vectors. ICLR 2013 Workshop Track; arXiv preprint arXiv:1301.3618.

Richard Socher, Milind Ganjoo, Hamsa Sridhar, Osbert Bastani, Christopher D. Manning, and Andrew Y. Ng. 2013. Zero-shot learning through cross-modal transfer. ICLR 2013 Workshop Track; arXiv preprint arXiv:1301.3666.

David McClosky, Wanxiang Che, Marta Recasens, Mengqiu Wang, Richard Socher, and Christopher D. Manning. 2012. Stanford's system for parsing the English web. In *Proceedings of First Workshop on Syntactic Analysis of Non-Canonical Language (SANCL)*.

Angel X. Chang and Christopher D. Manning. 2012. SUTIME: A library for recognizing and normalizing time expressions. In *8th International Conference on Language Resources and Evaluation (LREC 2012)*.

Mihai Surdeanu, Sonal Gupta, John Bauer, David McClosky, Angel X. Chang, Valentin I. Spitkovsky, and Christopher D. Manning. 2011. Stanford's distantly-supervised slot-filling system. In *Proceedings of the Fourth Text Analysis Conference (TAC 2011)*.

Angel X. Chang, Valentin I. Spitkovsky, Eneko Agirre, and Christopher D. Manning. 2011. Stanford-UBC entity linking at TAC-KBP, again. In *Proceedings of the Fourth Text Analysis Conference (TAC 2011)*.

Mihai Surdeanu, David McClosky, Julie Tibshirani, John Bauer, Angel X. Chang, Valentin I. Spitkovsky, and Christopher D. Manning. 2010. A simple distant supervision approach for the TAC-KBP slot filling task. In *Proceedings of the Third Text Analysis Conference (TAC 2010)*.

Angel X. Chang, Valentin I. Spitkovsky, Eric Yeh, Eneko Agirre, and Christopher D. Manning. 2010. Stanford-UBC entity linking at TAC-KBP. In *Proceedings of the Third Text Analysis Conference (TAC 2010)*.

Daniel Ramage, Christopher D. Manning, and Daniel A. McFarland. 2010. Which universities lead and lag? Toward university rankings based on scholarly output. In *NIPS 2010 Workshop on Computational Social Science and the Wisdom of the Crowds*.

Mihai Surdeanu, Ramesh Nallapati, and Christopher D. Manning. 2010. Legal claim identification: Information extraction with hierarchically labeled data. In *Proceedings of the LREC 2010 Workshop on the Semantic Processing of Legal Texts (SPLeT-2010)*.

Daniel Ramage, Evan Rosen, Jason Chuang, Christopher D. Manning, and Daniel A. McFarland. 2009. Topic modeling for the social sciences. In *NIPS 2009 Workshop on Applications for Topic Models: Text and Beyond*.

Daniel Cer, Michel Galley, Daniel Jurafsky, and Christopher D. Manning. 2010a. Phrasal: A statistical machine translation toolkit for exploring new model

features. In *Proceedings of the NAACL HLT 2010 Demonstration Session*, pp. 9–12.

Daniel Cer, Marie-Catherine de Marneffe, Daniel Jurafsky, and Christopher D. Manning. 2010b. Parsing to Stanford Dependencies: Trade-offs between speed and accuracy. In *Proceedings of LREC-10*.

Michel Galley, Spence Green, Daniel Cer, Pi-Chuan Chang, and Christopher D. Manning. 2009. Stanford University's Arabic-to-English statistical machine translation system for the 2009 NIST evaluation. In *The 2009 NIST Open Machine Translation Evaluation Workshop*.

Eneko Agirre, Angel X. Chang, Daniel S. Jurafsky, Christopher D. Manning, Valentin I. Spitkovsky, and Eric Yeh. 2009. Stanford-ubc at tac-kbp. In *Proceedings of the Second Text Analysis Conference (TAC 2009)*.

Marie-Catherine de Marneffe and Christopher D. Manning. 2008. Stanford typed dependencies manual. Technical report.

Michel Galley, Pi-Chuan Chang, Daniel Cer, Jenny R. Finkel, and Christopher D. Manning. 2008. NIST open machine translation 2008 evaluation: Stanford University's system description. Unpublished working notes of the 2008 NIST Open Machine Translation Evaluation Workshop.

Sebastian Padó, Michel Galley, Dan Jurafsky, and Chris Manning. 2008. Evaluating MT output with entailment technology. Unpublished working notes of MetricsMATR: NIST Metrics for Machine Translation Challenge.

Marie-Catherine de Marneffe, Trond Grenager, Bill MacCartney, Daniel Cer, Daniel Ramage, Chloé Kiddon, and Christopher D. Manning. 2007. Aligning semantic graphs for textual inference and machine reading. In *AAAI Spring Symposium Series: Machine Reading*.

Marie-Catherine de Marneffe, Bill MacCartney, and Christopher D. Manning. 2006a. Generating typed dependency parses from phrase structure parses. In *5th International Conference on Language Resources and Evaluation (LREC 2006)*, pp. 449–454.

Marie-Catherine de Marneffe, Bill MacCartney, Trond Grenager, Daniel Cer, Anna Rafferty, and Christopher D. Manning. 2006b. Learning to distinguish valid textual entailments. In *Second PASCAL Challenges Workshop*.

Christopher D. Manning. 2006a. Ergativity. In Keith Brown (ed.), *Encyclopedia of Languages & Linguistics, Second Edition*, volume 4, pp. 210–217. Oxford: Elsevier.

Christopher D. Manning. 2006b. Local textual inference: It's hard to circumscribe, but you know it when you see it – and NLP needs it. MS, Stanford University.

Huihsin Tseng, Pichuan Chang, Galen Andrew, Daniel Jurafsky, and Christopher Manning. 2005. A conditional random field word segmenter. In *Fourth SIGHAN Workshop on Chinese Language Processing*, pp. 168–171.

Christopher D. Manning. 2005. Review of Michael Hammond, *Programming for linguists: Java for language researchers. Language* 81:740–742.

Christopher Cox, Jamie Nicolson, Jenny Rose Finkel, Christopher Manning, and Pat Langley. 2005. Template sampling for leveraging domain knowledge in information extraction. In *First PASCAL Challenges Workshop*, Southampton, UK.

Rajat Raina, Aria Haghighi, Christopher Cox, Jenny Finkel, Jeff Michels, Kristina Toutanova, Bill MacCartney, Marie-Catherine de Marneffe, Christopher D. Manning, and Andrew Y. Ng. 2005. Robust textual inference using diverse knowledge sources. In *First PASCAL Challenges Workshop*, Southampton, UK.

Philip Beineke, Trevor Hastie, Christopher Manning, and Shivakumar Vaithyanathan. 2004. Exploring sentiment summarization. In Yan Qu, James Shanahan, and Janyce Wiebe (eds.), *Exploring Attitude and Affect in Text: Theories and Applications*, pp. 12–15. AAAI Spring Symposium Technical Report SS-04-07.

Dan Klein and Christopher D. Manning. 2004. Corpus-based induction of syntactic structure: Models of constituency and dependency. In Paul Cohen, Andy Clark, Eduard Hovy, Tim Oates, and Michael Witbrock (eds.), *Language Learning: An Interdisciplinary Perspective*, pp. 32–38. AAAI Spring Symposium Technical Report SS-04-05.

Christopher D. Manning. 2003. Statistical approaches to natural language processing. In Lynn Nadel (ed.), *Encyclopedia of Cognitive Science*. Wiley (Nature Publishing Group).

Kristina Toutanova, Christopher D. Manning, Stephan Oepen, and Dan Flickinger. 2003. Parse selection on the Redwoods corpus: 3rd growth results. Technical Report dbpubs 2003-64, Stanford University.

Christopher D. Manning. 2002. Review of Rens Bod, *Beyond Grammar: An Experience-based Theory of Language. Journal of Linguistics* 38:441–442.

Joan Bresnan, Shipra Dingare, and Christopher D. Manning. 2001. Soft constraints mirror hard constraints: Voice and person in English and Lummi. In Miriam Butt and Tracy Holloway King (eds.), *Proceedings of the LFG '01 Conference*, pp. 13–32. CSLI Publications.

Christopher Manning and Kristen Parton. 2001. What's needed for lexical databases? Experiences with Kirrkirr. In *Proceedings of the IRCS Workshop on Linguistic Databases*, pp. 167–173, University of Pennsylvania, Philadelphia.

Dan Klein and Christopher D. Manning. 2001. An $O(n^3)$ agenda-based chart parser for arbitrary probabilistic context-free grammars. Technical Report dbpubs/2001-16, Stanford University, Stanford, CA.

I Wayan Arka and Christopher D. Manning. 1998. Voice and grammatical relations in Indonesian: A new perspective. In *Proceedings of the Third LFG Conference (LFG '98)*, University of Queensland, Brisbane.

Brett Baker and Christopher Manning. 1998. A dictionary database template for Australian languages. In *Proceedings of Australex 1998*.

Christopher Manning. 1998. Rethinking text segmentation models: An information extraction case study. Technical Report SULTRY-98-07-01, University of Sydney.

Christopher D. Manning. 1997. Review of David Pesetsky, *Zero Syntax: Experiencers and Cascades*. *Language* 73:608–611.

Christopher D. Manning. 1996. Argument structure as a locus for binding theory. In Miriam Butt and Tracy Holloway King (eds.), *Proceedings of the First Lexical Functional Grammar Conference (LFG '96)*, Rank Xerox, Grenoble.

John T. Maxwell, III and Christopher D. Manning. 1996. A theory of non-constituent coordination based on finite state rules. In *Proceedings of the First Lexical Functional Grammar Conference (LFG '96)*, Grenoble.

Christopher D. Manning. 1996. Romance complex predicates: In defence of the right-branching structure. Paper presented at the Workshop on Surface-Based Syntax and Romance Languages, 1996 European Summer School on Logic, Language, and Information, Prague.

Avery D. Andrews and Christopher D. Manning. 1993. Information spreading and levels of representation in LFG. Technical Report CSLI-93-176, CSLI, Stanford CA.

Christopher D. Manning. 1992. Romance is so complex. Technical Report CSLI-92-168, Stanford University, Stanford CA.

Recent invited talks

The State of Deep Learning for Natural Language Processing. Invited talk at the Arthur M. Sackler Colloquium, National Academy of Science, 2019.

Making the L in VQA Matter. Invited talk at the Visual Question Answering workshop at CVPR 2019.

Knowledge is embedded in language neural networks but can they reason? Invited talk at the Simons Institute workshop on Emerging Challenges in Deep Learning 2019.

Building neural network models that can reason. Invited talk at Microsoft Research, Redmond, 2019.

The Scoietal Impacts of the AI Wave. Invited talk at the Bay Area Robotics Symposium 2018.

Towards real-world visual reasoning. Invited talk at the Visually Grounded Interaction and Language (ViGIL) workshop at NeurIPS 2018.

Understanding Human Language: Can NLP and Deep Learning Help. Invited talk at the 39th International ACM SIGIR conference (SIGIR 2016).

The Case for Universal Dependencies. Invited talk at the 2015 International Conference on Dependency Linguistics (DepLing 2015).

Computational Linguistics and Deep Learning. Presidential Address at the 2015 Annual Meeting of the Association for Computational Linguistics.

Compositional Deep Learning. Invited talk at the NAACL 2015 Workshop on Vector Space Modeling for NLP.

Distributed representations of language are back. Invited talk at BayLearn 2014.

Grants (since 2011)

Effective Explanation of Complex Machine Learning using Coordinated Language and Visualization, DARPA XAI, 2017–2021. With Kathy McKeown. Not funded.

Deep Models of Compositionality and Context. DARPA CwC (Communicating with Computers), Oct 1, 2015–Sept 30, 2020. With Percy Liang and Dan Jurafsky. Funded.

Deep Understanding: Integrating Neural and Symbolic Models of Meaning. NSF RI Medium. July 1, 2015–June 30, 2018. Funded.

Question Answering Using Linguistic Features and Textual Inference. Sponsored Project funded by Vulcan, Inc. For second and third year, transferred to Allen Institute for Artificial Intelligence. Aug 1, 2012–Apr 30, 2016. Funded.

Robust Deep Semantics for Language Understanding. DARPA DEFT (Deep Exploration and Filtering of Text), Oct 2012–Mar 2017. With Dan Jurafsky and Percy Liang. Funded.

DELPHI MT System. DARPA BOLT: Broad Operational Language Translation program. Subcontractor to IBM. Oct 19, 2011–Dec. 30, 2014. With Dan Jurafsky.

Machine Reading: FAUST: Flexible Acquisition and Understanding System for Text. 2009-2014. Subcontractor to SRI. With Dan Jurafsky and Andrew Ng.

GALE Phase 4-5: Rosetta: An Analyst Co-Pilot. DARPA GALE program. 2009–2011. Subcontractor to IBM. With Dan Jurafsky.

Distributed Open Source Software

StanfordNLP: A Python NLP Library for Many Human Languages.
https://stanfordnlp.github.io/stanfordnlp/

GloVe: Global Vectors for Word Representation.
https://nlp.stanford.edu/projects/glove/

Stanford CoreNLP.
http://nlp.stanford.edu/software/corenlp.html

Stanford Phrasal: A Phrase-Based Translation System.
http://nlp.stanford.edu/phrasal/

Stanford Parser.
http://nlp.stanford.edu/software/lex-parser.html

Stanford Part-of-Speech Tagger.
http://nlp.stanford.edu/software/tagger.html

Stanford Named Entity Recognizer.
http://nlp.stanford.edu/software/CRF-NER.html

Stanford Word Segmenter.
http://nlp.stanford.edu/software/segmenter.html

Stanford Classifier.
http://nlp.stanford.edu/software/classifier.html

Tregex, Tsurgeon, and Semgrex.
http://nlp.stanford.edu/software/tregex.html

Stanford Temporal Tagger (SUTime).
http://nlp.stanford.edu/software/sutime.html

Kirrkirr: software for the exploration of indigenous language dictionaries.
http://nlp.stanford.edu/kirrkirr/

University Committees

2012–13 Committee on Academic Computing and Information Systems (C-ACIS)

Stanford, November 26, 2019