

## STUART MERRILL SHIEBER

Maxwell-Dworkin Laboratory  
Harvard University  
33 Oxford Street  
Cambridge, MA 02138

*phone:* (617) 495-2344  
*email:* shieber@seas.harvard.edu  
*www:* <http://seas.harvard.edu/~shieber/>

### EDUCATION

PhD (computer science) 1989, Stanford University. Dissertation: *Parsing and Type Inference for Natural and Computer Languages*.

AB (applied mathematics) summa cum laude 1981, Harvard University.

Honorary diploma 2009, Brookline High School.

### PROFESSIONAL EXPERIENCE

Harvard University. James O. Welch, Jr. and Virginia B. Welch Professor of Computer Science, 2002–present.

Harvard University. Affiliate of the Department of Philosophy, 2020–present.

Harvard University. Affiliate of the Department of Linguistics, 2016–present.

Harvard University. Director, Office for Scholarly Communication, 2008–2013.

Harvard University. Director, Center for Research on Computation and Society, 2004–2008.

Centro per la Ricerca Scientifica e Tecnologica (ITC-IRST), Trento, Italy. Visiting scholar, May–August, 2002.

Stanford University. Visiting scholar, January–April, 2002.

Harvard University. Harvard College Professor, 2001–2006.

Harvard University. Gordon McKay Professor of Computer Science, 1996–2002.

Harvard University. John L. Loeb Associate Professor of the Natural Sciences, 1993–1996.

Harvard University. Assistant Professor of Computer Science, 1989–1993.

University of California at Santa Cruz. Visiting professor, summer, 1991.

Center for the Study of Language and Information, Stanford University. Research fellow, 1983–1989.

Artificial Intelligence Center, SRI International. Research computer scientist, 1981–1989.

### HONORS

Fellow of the Association for Computational Linguistics, 2017.

Fellow of the Association for Computing Machinery, 2014.

Distinguished Visiting Fellow, Scottish Informatics and Computer Science Alliance, 2014.

Benjamin White Whitney Scholar, Radcliffe Institute for Advanced Study, 2006–2007.

Thomas A. Wasow Visiting Scholar in Symbolic Systems, Stanford University, October, 2006.

Fellow of the American Association for Artificial Intelligence, 2004.  
Presidential Faculty Fellow, 1993–1998.  
Presidential Young Investigator, 1991–1993.  
SRI Exceptional Achievement Award, 1985.  
Phi Beta Kappa (junior twelve), 1980.  
Detur Prize, 1978.

## BOOKS

- Stuart M. Shieber. *An Introduction to Unification-Based Approaches to Grammar*, volume 4 of *CSLI Lecture Notes Series*. Center for the Study of Language and Information, Stanford, CA, 1986. Spanish translation: *Introducción a los Formalismos Grammaticales de Unificación*, Editorial Teide, Barcelona, 1989. French translation: *Formalismes Syntaxiques pour le Traitement Automatique du Langage Naturel*, Philip Miller and Thérèse Torris, editors, Hermès, Paris, 1990.
- Fernando C. N. Pereira and Stuart M. Shieber. *Prolog and Natural-Language Analysis*, volume 10 of *CSLI Lecture Notes Series*. Center for the Study of Language and Information, 1987. Italian translation: *Prolog e Analisi del Linguaggio Naturale*, Tecniche Nuove, Milan, 1992.
- Peter Sells, Stuart M. Shieber, and Thomas Wasow, editors. *Foundational Issues in Natural Language Processing*. System Development Foundation Benchmark Series. MIT Press, Cambridge, MA, 1991. Introduction reprinted in Carlos P. Otero, ed., *Noam Chomsky: Critical Assessments*, volume 2, pages 81–90, Routledge, New York, 1994.
- Stuart M. Shieber. *Constraint-Based Grammar Formalisms*. MIT Press, 1992.
- Stuart M. Shieber. *The Turing Test*. MIT Press, 2004.

## JOURNAL ARTICLES

- Stuart M. Shieber. Direct parsing of ID/LP grammars. *Linguistics and Philosophy*, 7(2):135–154, 1984.
- Stuart M. Shieber. Criteria for designing computer facilities for linguistic analysis. *Linguistics*, 23(3):189–211, 1985.
- Stuart M. Shieber. Evidence against the context-freeness of natural language. *Linguistics and Philosophy*, 8:333–343, 1985. Reprinted in Walter J. Savitch, Emmon Bach, William Marsh, and Gila Safran-Navah, eds., *The Formal Complexity of Natural Language*, pages 320–334, Dordrecht, Holland: D. Reidel Publishing Company, 1987. Reprinted in Jack Kulas, James H. Fetzer, and Terry L. Rankin, eds., *Philosophy, Language, and Artificial Intelligence*, pages 79–92, Dordrecht, Holland: Kluwer Academic Publishers, 1988.
- Jerry Hobbs and Stuart M. Shieber. An algorithm for generating quantifier scopings. *Computational Linguistics*, 13(1–2):47–63, January–June 1987.
- Stuart M. Shieber, Gertjan van Noord, Fernando C. N. Pereira, and Robert C. Moore. Semantic-head-driven generation. *Computational Linguistics*, 16(1):30–41, 1990.
- Mary Dalrymple, Stuart M. Shieber, and Fernando C. N. Pereira. Ellipsis and higher-order unification. *Linguistics and Philosophy*, 14:399–452, 1991.
- Stuart M. Shieber and Yves Schabes. Generation and synchronous tree-adjoining grammars. *Computational Intelligence*, 7(4):220–228, 1992.

- Stuart M. Shieber. The problem of logical-form equivalence. *Computational Linguistics*, 19(1):179–190, 1993.
- Stuart M. Shieber and Mark Johnson. Variations on incremental interpretation. *Journal of Psycholinguistic Research*, 22(2):287–318, March 1993.
- Corey Kosak, Joseph Marks, and Stuart Shieber. Automating the layout of network diagrams with specified visual organization. *Transactions on Systems, Man and Cybernetics*, 24(3):440–454, March 1994.
- Yves Schabes and Stuart M. Shieber. An alternative conception of tree-adjoining derivation. *Computational Linguistics*, 20(1):91–124, 1994. Also available as cmp-lg/9404001.
- Stuart M. Shieber. Lessons from a restricted Turing test. *Communications of the Association for Computing Machinery*, 37(6):70–78, 1994. Also available as cmp-lg/9404002.
- Stuart M. Shieber. Restricting the weak-generative capacity of synchronous tree-adjoining grammars. *Computational Intelligence*, 10(4):371–385, November 1994. Also available as cmp-lg/9404003.
- Stuart M. Shieber, Jon Christensen, and Joe Marks. An empirical study of algorithms for point feature label placement. *Transactions on Graphics*, 14(3), July 1995.
- Stuart M. Shieber, Yves Schabes, and Fernando C. N. Pereira. Principles and implementation of deductive parsing. *Journal of Logic Programming*, 24(1–2):3–36, July–August 1995. Also available as cmp-lg/9404008.
- Shawn Edmondson, Jon Christensen, Joe Marks, and Stuart M. Shieber. A general cartographic labeling algorithm. *Cartographica*, 33(4):13–23, Winter 1996.
- Wheeler Ruml, J. Thomas Ngo, Joe Marks, and Stuart M. Shieber. Easily searched encodings for number partitioning. *Journal of Optimization Theory and Applications*, 89(2):251–291, July 1996.
- Stuart M. Shieber. A call for collaborative interfaces. *Computing Surveys*, 28A (electronic), 1996.
- Stuart M. Shieber, Mary Dalrymple, and Fernando C. N. Pereira. Interactions of scope and ellipsis. *Linguistics and Philosophy*, 19(5):527–552, 1996. Reprinted in Shalom Lappin and Elabbas Benmamoun, editors, *Fragments: Studies in Ellipsis and Gapping*, chapter 1, pages 8–31, Oxford University Press, 1999.
- Craig Silverstein and Stuart M. Shieber. Predicting individual book use for off-site storage using decision trees. *Library Quarterly*, 66(3):266–293, July 1996.
- Ramesh Johari, Joe Marks, Ali Partovi, and Stuart M. Shieber. Automatic yellow-pages pagination and layout. *Journal of Heuristics*, 2(4):321–342, 1997.
- Andrew Kehler and Stuart M. Shieber. Anaphoric dependencies in ellipsis. *Computational Linguistics*, 23(3), 1997.
- Griffin Weber, Lucila Ohno-Machado, and Stuart Shieber. Representation in stochastic search for phylogenetic tree reconstruction. *Journal of Biomedical Informatics*, 39(1):43–50, February 2006.
- Shalom Lappin and Stuart M. Shieber. Machine learning theory and practice as a source of insight into universal grammar. *Journal of Linguistics*, 43(2):393–427, 2007.
- Stuart M. Shieber. The Turing test as interactive proof. *Noûs*, 41(4):686–713, December 2007.
- Stuart M. Shieber and Rani Nelken. Abbreviated text input using language modeling. *Natural Language Engineering*, 13(2):165–183, June 2007.
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- Stuart M. Shieber. Equity for open-access journal publishing. *PLoS Biology*, 7(8), 2009.
- Ya'akov Gal, Barbara Grosz, Sarit Kraus, Avi Pfeffer, and Stuart Shieber. Agent decision-making in open mixed networks. *Artificial Intelligence*, 174(18):1460–1480, 2010.
- Rebecca Nesson, Giorgio Satta, and Stuart M. Shieber. Complexity, parsing, and factorization of tree-local multi-component tree-adjointing grammar. *Computational Linguistics*, 36(3), September 2010.
- Ya'akov Gal, Swapna Reddy, Stuart Shieber, Andee Rubin, and Barbara Grosz. Plan recognition in exploratory domains. *Artificial Intelligence*, 176(1):2270–2290, January 2011.
- Heather Pon-Barry and Stuart M. Shieber. Recognizing uncertainty in speech. *EURASIP Journal on Advances in Signal Processing*, 2011(251753), 2011.
- Stuart M. Shieber. The case for the journal's use of a CC-BY license. *Journal of Language Modelling*, 0(1):5–8, 2012.
- Stuart M. Shieber. Bimorphisms and synchronous grammars. *Journal of Language Modelling*, 2(1):51–104, 2014.
- Stuart M. Shieber. There can be no Turing-Test-passing memorizing machines. *Philosophers' Imprint*, 14(16):1–13, June 2014.
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- Reuth Reuth Mirsky, Ya'akov (Kobi) Gal, and Stuart M. Shieber. CRADLE: An online plan recognition algorithm for exploratory domains. *ACM Transactions on Intelligent Systems and Technology*, 8(3), April 2017.
- Daniel Rothchild and Stuart Shieber. Automatically determining versions of scholarly articles. *Scholarly and Research Communication*, 8(1), March 22 2017.

## REFEREED CONFERENCE PAPERS

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- Stuart M. Shieber, Susan U. Stucky, Hans Uszkoreit, and Jane J. Robinson. Formal constraints on metarules. In *Proceedings of the 21st Annual Meeting of the Association for Computational Linguistics*, pages 22–27, Massachusetts Institute of Technology, Cambridge, Massachusetts, 15–17 June 1983.
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- Ivan A. Sag, Ronald Kaplan, Lauri Karttunen, Martin Kay, Carl Pollard, Stuart Shieber, and Annie Zaenen. Unification and grammatical theory. In *Proceedings of the West Coast Conference on Formal Linguistics*, volume 5, pages 238–254, 1986.
- Stuart M. Shieber. A simple reconstruction of GPSG. In *Proceedings of the 11th International Conference on Computational Linguistics*, pages 211–216, Bonn, West Germany, 25–29 August 1986.
- Stuart M. Shieber. A uniform architecture for parsing and generation. In *Proceedings of the 12th International Conference on Computational Linguistics*, pages 614–619, Budapest, Hungary, 1988.
- Stuart M. Shieber, Gertjan van Noord, Robert Moore, and Fernando C. N. Pereira. A semantic-head-driven generation algorithm for unification-based formalisms. In *Proceedings of the 27th Annual Meeting of the Association for Computational Linguistics*, pages 7–17, 1989.
- Stuart M. Shieber and Yves Schabes. Generation and synchronous tree-adjoining grammars. In *Proceedings of the Fifth International Workshop on Natural Language Generation*, pages 9–14, 1990.
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- Sandeep Kochhar, Mark Friedell, Steve Sistare, Janusz Juda, Mark LaPolla, Joe Marks, Peter McMurry, Corey Kosak, and Stuart Shieber. A design environment for scientific and program visualizations. In *Proceedings of the First International Conference on Computational Graphics and Visualization Techniques (Compugraphics '91)*, pages 321–332, Sesimbra, Portugal, 30 September–2 October 1991.
- Corey Kosak, Joseph Marks, and Stuart Shieber. A parallel genetic algorithm for network diagram layout. In *Proceedings of the Fourth International Conference on Genetic Algorithms*, pages 458–465, University of California, San Diego, California, 1991.
- Yves Schabes and Stuart M. Shieber. An alternative conception of tree-adjoining derivation. In *Proceedings of the 30th Annual Meeting of the Association for Computational Linguistics*, pages 167–176, University of Delaware, Newark, Delaware, 28 June–2 July 1992.
- Stuart M. Shieber. Reconciling abstract structure and concrete data in statistical natural-language processing. In *Proceedings of the IEEE Workshop on Automatic Speech Recognition*, pages 57–59, Arden House, Harriman, New York, December 1992.
- Stuart M. Shieber. Restricting the weak-generative capacity of synchronous tree-adjoining grammars. In *Proceedings of the Second TAG Workshop*, University of Pennsylvania, Philadelphia, Pennsylvania, 24–26 June 1992.
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- Adam Ginsburg, Joe Marks, and Stuart M. Shieber. A viewer for PostScript documents. In *Proceedings of UIST '96*, 1996.
- Kathy Ryall, Joe Marks, and Stuart M. Shieber. An interactive system for drawing graphs. In *Proceedings of Graph Drawing '96*, 1996.
- B. Andalman, K. Ryall, W. Ruml, J. Marks, and S. M. Shieber. Design gallery browsers based on 2D and 3D graph drawing. In *Proceedings of Graph Drawing '97*, 1997.
- Jon Christensen, Stacy Friedman, Joe Marks, and Stuart M. Shieber. Empirical testing of algorithms for variable-sized label placement. In *Proceedings of the Thirteenth Annual ACM Symposium on Computational Geometry*, 1997.
- J. Marks, P. Beardsley, B. Andalman, B. Freeman, S. Gibson, J. Hodgins, T. Kang, B. Mirtich, H. Pfister, W. Ruml, J. Seims, and S. M. Shieber. Design galleries: A general approach to setting parameters for computer graphics and animation. In *Proceedings of SIGGRAPH 97*, pages 389–400, Los Angeles, CA, 1997.
- Kathy Ryall, Joe Marks, and Stuart M. Shieber. An interactive constraint-based system for drawing graphs. In *Proceedings of the 10th Annual Symposium on User Interface Software and Technology (UIST)*, 1997.
- Joe Marks, Wheeler Ruml, Stuart M. Shieber, and Tom Ngo. A seed-growth heuristic for graph bisection. In R. Battiti and A. A. Bertossi, editors, *Proceedings of Algorithms and Experiments '98*, pages 76–87, Trento, Italy, 9–11 February 1998.
- Tamara Babaian, Barbara J. Grosz, and Stuart M. Shieber. A writer's collaborative assistant. In *Proceedings of the Intelligent User Interfaces Conference*, pages 7–14, San Francisco, CA, January 2002. ACM Press.
- Stephan Oepen, Kristina Toutanova, Stuart M. Shieber, Christopher Manning, Dan Flickinger, and Thorsten Brants. The LinGO redwoods treebank: Motivation and preliminary applications. In *Proceedings of the Nineteenth International Conference on Computational Linguistics*, Taipei, Taiwan, 2002.
- Kristina Toutanova, Christopher D. Manning, Stuart M. Shieber, Dan Flickinger, and Stephan Oepen. Parse disambiguation for a rich HPSG grammar. In *Proceedings of the First Workshop on Treebanks and Linguistic Theories (TLT2002)*, pages 253–263, 2002.
- Mark-Jan Nederhof, Giorgio Satta, and Stuart M. Shieber. Partially ordered multiset context-free grammars and ID/LP parsing. In *Proceedings of the Eighth International Workshop on Parsing Technologies*, pages 171–182, Nancy, France, April 2003.
- Stuart M. Shieber and Ellie Baker. Abbreviated text input. In *Proceedings of the 2003 International Conference on Intelligent User Interfaces*, pages 293–296, Miami, FL, 2003.
- Stuart M. Shieber and Xiaopeng Tao. Comma restoration using constituency information. In *Proceedings of the 2003 Human Language Technology Conference and Conference of the North American Chapter of the Association for Computational Linguistics*, pages 221–227, Edmonton, AB, Canada, 2003.
- Marco Carbone, Kobi Gal, Stuart M. Shieber, and Barbara Grosz. Unifying annotated discourse hierarchies to create a gold standard. In *Proceedings of the Fifth SIGdial Workshop on Discourse and Dialogue*, Boston, MA, 30 April–1 May 2004.
- Stuart M. Shieber. Synchronous grammars as tree transducers. In *Proceedings of the Seventh International Workshop on Tree Adjoining Grammar and Related Formalisms (TAG+ 7)*, Vancouver, Canada, 20–22 May 2004.
- Alex Kulesza and Stuart M. Shieber. A learning approach to improving sentence-level

- MT evaluation. In *Proceedings of the 10th International Conference on Theoretical and Methodological Issues in Machine Translation*, Baltimore, MD, 4–6 October 2004.
- Timothy W. Rauenbusch, Stuart M. Shieber, and Barbara J. Grosz. Computing the communication costs of item allocation. In Bradley J. Clement, editor, *Proceedings of the ICAPS-05 Workshop on Planning and Scheduling*, pages 15–21, Monterey, CA, 6–10 June 2005.
- Rani Nelken and Stuart M. Shieber. Arabic diacritization using weighted finite-state transducers. In *Proceedings of the 2005 ACL Workshop on Computational Approaches to Semitic Languages*, pages 79–86, Ann Arbor, Michigan, June 2005.
- Rebecca Nesson, Stuart M. Shieber, and Alexander Rush. Induction of probabilistic synchronous tree-insertion grammars for machine translation. In *Proceedings of the 7th Conference of the Association for Machine Translation in the Americas (AMTA 2006)*, Boston, Massachusetts, 8–12 August 2006.
- David C. Parkes, Michael O. Rabin, Stuart M. Shieber, and Christopher A. Thorpe. Practical secrecy-preserving, verifiably correct and trustworthy auctions. In *Proceedings of the Eighth International Conference on Electronic Commerce (ICEC '06)*, pages 70–81, Fredericton, New Brunswick, Canada, 14–16 August 2006. ACM Press.
- Rebecca Nesson and Stuart M. Shieber. Simpler TAG semantics through synchronization. In *Proceedings of the 11th Conference on Formal Grammar*, pages 129–142, Malaga, Spain, 29–30 July 2006. Center for the Study of Language and Information.
- Jill Nickerson, Stuart M. Shieber, and Barbara J. Grosz. Referring-expression generation using a transformation-based learning approach. In *Proceedings of the 19th International FLAIRS Conference*, Melbourne Beach, FL, 11–13 May 2006.
- Stuart M. Shieber. Does the Turing Test demonstrate intelligence or not? In *Proceedings of the Twenty-First National Conference on Artificial Intelligence (AAAI-06)*, Boston, MA, 16–20 July 2006.
- Stuart M. Shieber. Unifying synchronous tree-adjoining grammars and tree transducers via bimorphisms. In *Proceedings of the 11th Conference of the European Chapter of the Association for Computational Linguistics (EACL-06)*, pages 377–384, Trento, Italy, 3–7 April 2006. European Chapter of the Association for Computational Linguistics.
- Rani Nelken and Stuart M. Shieber. Towards robust context-sensitive sentence alignment for monolingual corpora. In *Proceedings of the 11th Conference of the European Chapter of the Association for Computational Linguistics (EACL-06)*, Trento, Italy, 3–7 April 2006.
- Stuart Shieber and Wendy Lucas. A language for specifying informational graphics from first principles. In *Proceedings of the 2nd International Conference on Software and Data Technologies (ICSOFT 2007)*, pages 5–12, Barcelona, Spain, July 2007.
- Rachel Ben-Eliyahu-Zohary, Ran Giladi, Philip Hendrix, and Stuart M. Shieber. Clustering ad-hoc networks: Experiments in local search. In *Proceedings of the 9th Bar-Ilan Symposium on the Foundations of Artificial Intelligence (BISFAI 2007)*, Ramat Gan, Israel, 20–22 June 2007.
- Rebecca Nesson and Stuart Shieber. Extraction phenomena in synchronous TAG syntax and semantics. In Dekai Wu and David Chiang, editors, *Proceedings of the Workshop on Syntax and Structure in Statistical Translation*, Rochester, New York, 26 April 2007.
- Ya'akov Gal, Barbara J. Grosz, Avi Pfeffer, Stuart M. Shieber, and Alex Allain. The influence of task contexts on the decision-making of humans and computers. In *Proceedings of the Sixth International and Interdisciplinary Conference on Modeling and Using Context*,

- 2007.
- Stuart M. Shieber. Probabilistic synchronous tree-adjoining grammars for machine translation: The argument from bilingual dictionaries. In Dekai Wu and David Chiang, editors, *Proceedings of the Workshop on Syntax and Structure in Statistical Translation*, Rochester, New York, 26 April 2007.
- Rebecca Nesson and Stuart Shieber. Synchronous vector-TAG for natural language syntax and semantics. In *Proceedings of the Ninth International Workshop on Tree Adjoining Grammars and Related Formalisms (TAG+ 9)*, Tübingen, Germany, 7–8 June 2008.
- Sevan G. Ficici, Avi Pfeffer, Ya’akov Gal, Barbara Grosz, and Stuart Shieber. Colored trails: A multiagent system testbed for decision-making research (demonstration). In *Proceedings of the Seventh International Conference on Autonomous Agents and Multiagent Systems*, Estoril, Portugal, 12–16 May 2008.
- Ya’akov Gal, Elif Yamangil, Stuart M. Shieber, Andee Rubin, and Barbara J. Grosz. Towards collaborative intelligent tutors: Automated recognition of users’ strategies. In *Proceedings of the Ninth International Conference on Intelligent Tutoring Systems*, Montreal, Canada, 23–27 June 2008.
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- Bernd Huber, Emily Junkin, Richard F. Davis III, Mindy Yard, Allison Cotter, Stuart Shieber, Elizabeth Brestan-Knight, and Krzysztof Z. Gajos. Specialtime: Automatically detecting dialogue acts from speech to support parent-child interaction therapy. In *PervasiveHealth ’19: Proceedings of the 13th EAI International Conference on Pervasive Computing Technologies for Healthcare*, 2019.
- Jesse Vig, Sebastian Gehrmann, Yonatan Belinkov, Sharon Qian, Daniel Nevo, Yaron Singer, and Stuart Shieber. Investigating gender bias in language models using causal mediation analysis. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H. Lin, editors, *Advances in Neural Information Processing Systems*, volume 33, pages 12388–12401. Curran Associates, Inc., 2020.
- Tovly Deutsch, Masoud Jasbi, and Stuart Shieber. Linguistic features for readability assessment. In *Proceedings of the Fifteenth Workshop on Innovative Use of NLP for Building Educational Applications*, pages 1–17, Seattle, Washington, July 2020. Association for Computational Linguistics.
- Abdelrhman Saleh, Tovly Deutsch, Stephen Casper, Yonatan Belinkov, and Stuart Shieber. Probing neural dialog models for conversational understanding. In *Proceedings of the 2nd Workshop on Natural Language Processing for Conversational AI*, pages 132–143, Online, July 2020. Association for Computational Linguistics.

## BOOK CHAPTERS

- Stuart M. Shieber. Separating linguistic analyses from linguistic theories. In P. Whitelock, M. M. Wood, H. L. Somers, R. Johnson, and P. Bennett, editors, *Linguistic Theory and Computer Applications*, pages 1–36. Academic Press, London, 1987. Reprinted in U. Reyle and C. Rohrer, eds., *Natural Language Parsing and Linguistic Theories*, pages 33–68, Dordrecht, Holland: D. Reidel Publishing Company, 1988.
- Stuart M. Shieber. Natural-language processing: Grammar formalisms. In William Bright, editor, *The Oxford International Encyclopedia of Linguistics*, pages 61–64. Oxford University Press, New York, New York, 1991.
- Jon Christensen, Joe Marks, and Stuart M. Shieber. Placing text labels on maps and di-

- agrams. In Paul Heckbert, editor, *Graphics Gems IV*. Academic Press, Cambridge, Massachusetts, 1994.
- Wendy Lucas and Stuart M. Shieber. A simple language for novel visualizations of information. In J. Filipe, B. Shishkov, M. Helfert, and L. Maciaszek, editors, *Software and Data Technologies*, volume 22 of *Communications in Computer and Information Science*, pages 33–45. Springer-Verlag, Berlin, Germany, 2008.
- Stuart M. Shieber. Ecumenical open access and the Finch Report principles. In Nigel Vincent and Chris Wickham, editors, *Debating Open Access*, pages 30–41. British Academy for the Humanities and Social Sciences, London, 2013.

## TECHNICAL REPORTS

- Stuart M. Shieber, Fernando C. N. Pereira, Lauri Karttunen, and Martin Kay. Compilation of papers on unification-based grammar formalisms. Technical Report CSLI-86-48, Center for the Study of Language and Information, Stanford, California, April 1986.
- Corey Kosak, Joseph Marks, and Stuart Shieber. New approaches to automating network diagram layout. Technical Report TR-22-91, Harvard University Center for Research in Computing Technology, Cambridge, Massachusetts, 1991.
- Joe Marks and Stuart Shieber. The computational complexity of cartographic label placement. Technical Report TR-05-91, Harvard University Center for Research in Computing Technology, Cambridge, Massachusetts, December 1991.
- Jon Christensen, Joseph Marks, and Stuart M. Shieber. Labeling point features on maps and diagrams. Technical Report TR-25-92, Harvard University Center for Research in Computing Technology, Cambridge, Massachusetts, December 1992.
- Barbara J. Grosz, H. T. Kung, Margo Seltzer, Stuart M. Shieber, and Michael Smith. Infrastructure for research towards ubiquitous information systems. Technical Report TR-04-93, Center for Research in Computing Technology, Harvard University, 1993.
- Kathy Ryall, Joe Marks, Murray Mazer, and Stuart M. Shieber. Annotating floor plans using deformable polygons. Technical Report TR-24-93, Center for Research in Computing Technology, Harvard University, 1993.
- Rebecca Hwa, Joe Marks, and Stuart M. Shieber. Automatic structuring of high-performance hypermedia documents. Technical Report TR95-06, Mitsubishi Electric Research Laboratories, 1995.
- Wheeler Ruml, Adam Ginsburg, and Stuart Shieber. Speculative pruning for boolean satisfiability. Technical Report TR-02-99, Harvard University Computer Science, 1999.
- Wheeler Ruml, Joe Marks, Stuart Shieber, and Tom Ngo. Seed-growth heuristics for graph bisection. Technical Report TR-10-99, Harvard University Computer Science, 1999.
- Rebecca Nesson, Alexander Rush, and Stuart M. Shieber. Induction of probabilistic synchronous tree-insertion grammars. Technical Report TR-20-05, Division of Engineering and Applied Sciences, Harvard University, Cambridge, MA, 2005.
- Rani Nelken and Stuart M. Shieber. Lexical chaining and word-sense-disambiguation. Technical Report TR-06-07, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, 2007.

## PATENTS

- Peter B. Mark and Stuart M. Shieber. Method and apparatus for compression of images. U. S. patent number 5,303,313, April 1994.
- Joe Marks, Stuart M. Shieber, and Rebecca Hwa. Apparatus for determining the structure of a hypermedia document using graph partitioning. U. S. patent number 5,546,517, August 1996.
- Murray Mazer, Kathy Ryall, Joe Marks, and Stuart M. Shieber. A system for delineating and annotating areal regions. U. S. patent number 5,866,704, September 1996.
- Ramesh Johari, Joseph Marks, Ali Partovi, and Stuart M. Shieber. Apparatus and method for automatic yellow pages pagination and layout. U. S. patent number 5,911,146, June 1999.
- Ho Min Kang, Joseph Marks, Stuart M. Shieber, and Joseph Seims. System and method for exploring light spaces. U. S. patent number 5,866,704, March 1999.
- Stuart M. Shieber, John Armstrong, Rafael Baptista, Bryan Bentz, William Ganong III, and Donald Selesky. Command parsing and rewrite system. U. S. patent number 6,138,098, October 2000. See also Shieber, 1996, "Proposal for a Formalism for Sublanguage Specification".
- Wheeler Ruml, Joseph Marks, Kathleen Ryall, and Stuart M. Shieber. User interface for creation of image generation and transformation functions. U. S. patent number 6,421,050, July 2002.
- Kathleen Ryall, Joe Marks, and Stuart M. Shieber. Interactive system for drawing graphs. U. S. patent number 6,774,899, July 2004.
- David C. Parkes, Michael O. Rabin, Stuart M. Shieber, and Christopher A. Thorpe. Practical secrecy-preserving, verifiably correct and trustworthy auctions. U. S. patent number 8,024,274, September 2011.

## OTHER WORKS

- Stuart M. Shieber. Proposal for a formalism for sublanguage specification. Manuscript, Kurzweil Applied Intelligence (now ScanSoft), 27 January 1996.
- Stuart M. Shieber. Will researchers develop a computer that duplicates human intelligence in the foreseeable future? No. *The CQ Researcher*, 7(42):1001, 14 November 1997.
- Stuart M. Shieber. A postmodern romance [review of *Turing (A Novel About Computation)* by Christos Papadimitriou]. *American Scientist*, 92(3), May–June 2004.
- Stuart M. Shieber. Inverting the Turing test [review of *The Most Human Human* by Brian Christian]. *American Scientist*, 99(6):502, November–December 2011.
- Stuart M. Shieber. Is this article consistent with Hinchliffe's rule? *Annals of Improbable Research*, 21(3):18–19, May–June 2015.

## INVITED LECTURES

- Generative capacity and computational complexity of linguistic theories. Panel at the 21st Annual Meeting of the Association for Computational Linguistics, Massachusetts Institute of Technology, 1983.
- Separating linguistic analyses from linguistic theories. Workshop on Linguistic Theory and Computer Applications, University of Manchester Institute of Science and Technology, 1985.

- . Workshop on Word-Order and Parsing in Unification Grammars, Friedenweiler, West Germany, 1986.
- Unification-based approaches to grammar. Tutorial at the 23rd Annual Meeting of the Association for Computational Linguistics, University of Chicago, 1985.
- The quest for non-context-free natural languages. Santa Cruz Workshop on the Mathematics of Grammars and Languages, University of California at Santa Cruz, 1985.
- Principle-based parsing. Discussant at the System Development Foundation Workshop on the Processing of Linguistic Structure, University of California at Santa Cruz, 1987.
- An architecture for psycholinguistic modeling. First Annual Conference on Human Sentence Processing, City University of New York Graduate Center, 1988.
- Parsing and type inference for natural and computer languages. Parsing Project Seminar Series, Massachusetts Institute of Technology, December, 1989.
- Ellipsis and higher-order unification. Sloan Seminar Series, University of Pennsylvania, April, 1990.
- Mildly context-sensitive grammar formalisms. Natural Information Processing Seminar. Harvard University, October, 1990.
- Constraints and natural-language analysis. International Logic Programming Symposium, San Diego, California, October, 1991.
- . Workshop on Mathematical Aspects of Information Structures, Abingdon, England, April, 1992.
- Reconciling abstract structure and concrete data in statistical language processing. IEEE Workshop on Automatic Speech Recognition, Arden House, Harriman, New York, December, 1991.
- Variations on incremental interpretation. Fifth Annual Conference on Human Sentence Processing, City University of New York Graduate Center, March, 1992.
- New varieties of tree-adjoining grammars. Computer Science Department Colloquium, Brandeis University, April, 1992.
- Restricting the weak-generative capacity of synchronous tree-adjoining grammars. Second TAG Workshop, University of Pennsylvania, Philadelphia, Pennsylvania, June, 1992.
- Leading issues in tree adjunction (with Yves Schabes). Tutorial at the 30th Annual Meeting of the Association for Computational Linguistics, Newark, Delaware, June, 1992.
- The computer science of everyday language. Annual Meeting of the American Association for the Advancement of Science, Boston, Massachusetts, February, 1993.
- . Computer Science Department Colloquium, Wellesley College, Wellesley, Massachusetts, May, 1993.
- Formal models of the structure of language. Computer Science Colloquium, Harvard University, Cambridge, Massachusetts, March, 1993.
- . Computer Science Department, Columbia University, New York, New York, December, 1993.
- Some problems with defining tree-adjoining derivation. Department of Computer and Information Sciences Colloquium, University of Delaware, Newark, Delaware, May, 1993.
- The Turing test. Mather Cognitive Science Colloquium. Harvard University, Cambridge, Massachusetts, April, 1994.

Between stochastic and deterministic optimization methods. Panel organizer, TIMS/ORSA '94 meeting, Boston, Massachusetts, April, 1994.

Informational graphic design as combinatorial optimization. SIGGRAPH '94, Orlando, Florida, July, 1994.

Interactions of scope and ellipsis. Workshop on declarative approaches to discourse. University of Nijmegen, Nijmegen, the Netherlands, January, 1995.

———. IBM Yorktown Heights, June, 1995.

The problem with tree-adjointing grammars. Keynote address. Seventh Conference of the European Chapter of the Association for Computational Linguistics. Dublin, Ireland, March, 1995.

———. Cognitive Sciences Programme. University of Edinburgh. Edinburgh, Scotland, March, 1995.

The graphically articulate computer. Fourteenth International Joint Conference on Artificial Intelligence. Montreal, Canada, August, 1995.

———. Distinguished Lecture Series. Center for Human-Computer Communication, Oregon Graduate Institute, Portland, Oregon, January, 1995.

———. Distinguished Colloquium Series. University of Pittsburgh, Pittsburgh, Pennsylvania, March, 1996.

———. University of Washington, Seattle, Washington, June, 1996.

———. AT&T Research Labs, Murray Hill, New Jersey, June, 1996.

Characterizing ambiguity. Computer Science Colloquium, Harvard University, Cambridge, Massachusetts, November, 1995.

Panel member, Meeting of the Association for Research Libraries ("Finding Common Ground"), Cambridge, Massachusetts, March, 1996.

Collaborative interfaces and human-centered compression. University of Delaware, Newark, Delaware, November, 2001.

———. Stanford University, Stanford, California, April, 2002.

———. Centro per la Ricerca Scientifica e Tecnologica (Center for Research in Science and Technology), Trento, Italy, May, 2002.

Panel speaker, Research in Multimodal Interfaces: The Future. Advanced Visual Interfaces, Trento, Italy, May, 2002.

Resurrecting the Turing Test. University of Pennsylvania, Philadelphia, Pennsylvania, May, 2003.

Hard realities of open access. 143rd Meeting of the Association of Research Libraries, Washington, DC, October, 2003.

Two lectures on computational linguistics. Vilem Mathesius Lecture Series. Charles University, Prague, Czech Republic, March, 2004.

Reclaiming our published research. University of Connecticut Libraries Forum: Who Stole Your Research?, University of Connecticut, Storrs, Connecticut, April 26, 2004.

Towards a universal framework for tree transduction. Johns Hopkins University, Center for Language and Speech Processing, Baltimore, Maryland, November 30, 2004.

———. Computer Science Department. University of Michigan, Ann Arbor, Michigan, April, 2005.

Resurrecting the Turing Test. Keynote address. Harvard Mind, Brain and Behavior Gradu-

- ate Student Conference, Harvard University, Cambridge, Massachusetts, May, 2005.
- . Symbolic Systems Program Colloquium. Stanford University, October, 2006.
- Developments in synchronous tree-adjointing grammars. Computer Science Colloquium. Cornell University, April, 2006.
- Engineering and the foundations of grammar. Workshop on Foundations of Grammar. 2005 European Summer School on Logic, Language, and Information, Heriot-Watt University, Edinburgh, Scotland, August, 2005.
- Developments in synchronous grammars. Natural Language and Speech Processing colloquium. Stanford University, October 2006.
- Resurrecting the Turing Test. Colloques du Département d'Informatique et de Recherche Opérationnelle, Université de Montréal, March 1, 2007.
- . Center for Cognitive Science, Rutgers University, New Brunswick, New Jersey, October 2, 2007.
- Discussant, Stanislaus Dehaene's lecture on Conscious Processing and The Human Turing Machine. Harvard University, Cambridge, MA, April 5, 2007. <http://bit.ly/c1E9Rs>
- Synchronous grammars and transducers: Good news and bad news. Keynote address. International Workshop on Parsing Technology, Prague, Czech Republic, June 24, 2007.
- Synchronous grammars. Linguistics Colloquium, Rutgers University, New Brunswick, New Jersey, October 4, 2007.
- Synchronous linguistic formalisms. Linguistics Colloquium, Harvard University, Cambridge, Massachusetts, November 1, 2007.
- Open-access policies at Harvard and beyond. Meeting of the National Science Board. Arlington, Virginia, May 6, 2008.
- Copyright in scholarly publishing and the Harvard open-access policy. Annual Symposium of the Center for Intellectual Property, University of Maryland University College, Adelphi, Maryland, May 29, 2008.
- Can a TAG semantics be compositional? Keynote address. Proceedings of the Ninth International Workshop on Tree Adjoining Grammars and Related Formalisms (TAG+9), Tübingen, Germany, June 8, 2008.
- The Harvard open access experience. The SPARC-ACRL Forum on Emerging Issues in Scholarly Communication, Anaheim, California, June 27, 2008. <http://bit.ly/94TZjD>
- The Harvard open access initiatives. Scholarly Communications Speaker Series, Columbia University, June 28, 2008. <http://bit.ly/c4WdTx>
- What's so great about compositionality? Cognitive Science Colloquium, Brown University, Providence, Rhode Island, October 27, 2008.
- . Linguistics Colloquium, Yale University, New Haven, Connecticut, November 3, 2008.
- Panelist. Panel on New Approaches to Scholarly Communications and Publishing. 121st Annual Meeting of the National Association of State Universities and Land-Grant Colleges. Chicago, Illinois, November 10, 2008.
- The future of open access (and how to stop it). Center for Research on Study of Computation and Society. Cambridge, Massachusetts, November 12, 2008. <http://bit.ly/ahRxBp>
- The Harvard open access initiatives. Association of College and Research Libraries, New England Chapter. Boston, Massachusetts, December 4, 2008.

Co-organizer and commentator. Symposium on the Science of the Human Past. Broad Institute, Cambridge, Massachusetts, December 5, 2008.

The Harvard open access initiatives. Symposium on the Changing Landscape of Scholarly Communication. Texas A&M University, College Station, Texas, February 12, 2009.

The Harvard initiatives for open access to the scholarly literature. California Institute of Technology, Pasadena, California, March 26, 2009. <http://bit.ly/90Rrcf>

The future of open access and how to stop it. University of California, Berkeley, California, March 30, 2009.

Panelist, Digital Futures Forum on Scholarly Communication. American University, Washington, DC, March 31, 2009.

Panelist, Future Directions for Open Access Publishing, Annual Meeting of the American Association of University Presses, Philadelphia, Pennsylvania, June 20, 2009.

The university's role in the dissemination of research and scholarship. University of Massachusetts, Amherst, Massachusetts, September 24, 2009.

Panelist, Panel on The Digital Revolution and Academic Life. Radcliffe Institute Tenth Anniversary, Cambridge, MA, October 9, 2010.

Harvard's open-access policies. Highwire Press Publishers' Meeting, Washington, DC, October 28, 2009.

Pitfalls of open access. Berlin 7 Conference on Open Access, Paris, France, December 2, 2009.

What's wrong with scholarly publishing and how to fix it. Conference on New Infrastructure for Humanities Research, Stockholm, Sweden (by videoconference), January 5, 2010.

Why not ebooks? "Why Books?" Conference, Radcliffe Institute for Advanced Studies, Cambridge, Massachusetts, October 29, 2010.

The future of academic publishing. Teaching and Advising Program, Amherst College, Amherst, Massachusetts, November 5, 2010.

Panelist, Open Access: A Panel Discussion and Open Forum. University of Massachusetts Medical Center, Worcester, Massachusetts, November 22, 2010.

The Harvard open-access policies. SPARC Japan Symposium on Symposium Open Access Policies for the Dissemination of Research Outcomes from Universities, Tokyo, Japan, December 10, 2010.

The rational and empirical basis for open-access initiatives. Sixth International Academic Publishing in Europe Conference (APE 2011), Berlin, Germany, January 12, 2011.

A sustainable open-access future. Study on Open Access Publishing Symposium (SOAP), Berlin, Germany, January 13, 2011.

Discussant, Roundtable on Transparency of Research. Organized by David Willets, MP. London, England, January 17, 2011.

Funders as the key to an open access future. PLoS Research Funder Workshop, New York, NY, April 20-21, 2011.

What's so great about compositionality? Harvard-Macquarie Workshop on Language, Logic and Learning, Sydney Australia, August 22-26, 2011.

On the impossibility of open access. Congresso Internacional SIBiUSP 30 Anos, University of São Paulo, Brazil, October 8, 2011.



How not to write an open-access policy. Berlin 9 Pre-conference on Open-Access Policy Development, Johns Hopkins University, Washington, DC, November 8, 2011.

What's so great about compositionality? Computer and Automation Research Institute, Hungarian Academy of Sciences, Budapest, Hungary, February 13, 2012.

The Harvard open-access policies. Brown University, Providence, RI, February 24, 2012.

Negotiating with publishers, or not. SPARC 2012 Open Access Meeting, Kansas City, MO, March 13, 2012.

Panelist, Perspectives on Public Access. Health Research Alliance Members' Meeting, Boston, MA, April 12, 2012.

The utility of the Turing Test. Turing Centenary Conference, CiE 2012, Cambridge, England, June 21, 2012.

———. School of Informatics, University of Edinburgh, Edinburgh, Scotland, June 25, 2012.

Reading interfaces and the future of the book. In *Re Books: A Conference on Law and the Future of Books*, New York Law School, New York, NY, October 27, 2012.

Two problems in scholarly communication, and how to solve them. Center for Humanities, University of California, San Diego, CA, November 1, 2012.

The university's role in the dissemination of research and scholarship. Wellesley College, Wellesley, MA, December 11, 2012.

Why open access is better for scholarly societies. Symposium: Open Access and the Future of Academic Publishing, Annual Meeting of the Linguistic Society of America, Boston, MA, January 3, 2013.

There can be no Turing-test-passing memorizing machines (poster). *Philosophy and Theory of Artificial Intelligence*, Oxford England, September 21, 2013.

Language behavior as the hallmark of intelligence. Festival delle Scienze, Rome, Italy, January 26, 2014.

Open access: priorities, obstacles, and opportunities. Politecnico di Torino, Torino, Italy, January 29, 2014.

Why open access really matters. Library, St. Andrews University, St. Andrews, Scotland, June 5, 2014.

What's so great about compositionality? School of Computer Science, St. Andrews University, St. Andrews, Scotland, June 6, 2014.

———. Institute for Language, Cognition and Computation, School of Informatics, University of Edinburgh, Edinburgh, Scotland, June 9, 2014.

The Harvard open-access initiatives. University of Edinburgh Library Appleton Tower, University of Edinburgh, Edinburgh, Scotland, June 10, 2014.

Master class on synchronous grammars. School of Natural and Computing Sciences, University of Aberdeen, Aberdeen, Scotland, June 11–13, 2014.

Principles for designing an AI competition, or why the Turing Test fails as an inducement prize. *Beyond the Turing Test*, AAAI 2015, Austin, Texas, January 25, 2015.

Does the Turing Test need fixing? Institute for Research in Cognitive Science Colloquium, University of Pennsylvania, March 20, 2015.

What price open access? Coalition for Networked Information Spring 2015 Meeting, Seattle, Washington, April 13, 2015.

The role of higher education institutions in scholarly publishing and communication. Tenth

Annual Munin Conference on Scholarly Publishing, Tromsø, Norway, December 1, 2015.

The legacy of Howard Aiken. TODOS Seminar on Scholarly Communication, Publishing and Open Access Issues, University of Tromsø – The Arctic University of Norway, Tromsø, Norway, December 2, 2015.

Computational linguistics and the technological processing of natural language, Celebrating Quantitative Reasoning Connections series, Wellesley College, Wellesley, Massachusetts, April 18, 2017.

## PROFESSIONAL RESPONSIBILITIES

### *Academic*

*Open Access in Linguistics*, member of the advisory board, 2013–present.

*Journal of Language Modelling*, member of the editorial board, 2012–present.

*The Harvard Undergraduate Research Journal*, member of the faculty advisory board, 2010–2013(?).

*Transactions of the Association for Computational Linguistics*, member of the steering committee, 2016–present.

*Scholarly and Research Communication*, member of the editorial board, 2009–present.

*Computational Linguistics*, member of the editorial board, 1990–1993.

*Journal of Artificial Intelligence Research*, member of the editorial board, 1993–1996.

*Journal of Heuristics*, advisory editor, 1995–2011.

Association for Computational Linguistics, member of the executive committee, 1993–1996.

The Computation and Language E-Print Archive, founder and organizer, 1994–1998. Integrated into the Computing Research Repository.

ACM Computing Research Repository. Founding committee, 1998. Moderator, 1998–present.

North American Conference on Logic Programming, member of the program committee, 1990.

ARPA Workshop on Human Language Technology, invited participant, March, 1993.

IMS Conference on Syntax, Semantics, and Logic, invited participant, October, 1993.

AAAI/ARPA Meeting on Twenty-First Century Intelligent Systems, invited participant, April, 1994.

Workshop on Abstractions in Multimedia Layout, Presentation, and Interaction, member of the program committee, November, 1995.

ACM Workshop on Strategic Directions in Computer Science, Working Group on Human Computer Interaction, invited participant, June, 1996.

48th Annual Meeting of the Association for Computational Linguistics, area chair, July, 2010.

### *Policy*

Member, National Academy of Sciences Committee on Intellectual Property and the Emerging Information Infrastructure, 1997–1999.  
Director, Harvard Office for Scholarly Communication, 2008–present.  
Member, SPARC Open Access Working Group, 2010–present.  
Member, Coalition of Open-Access Policy Institutions, 2011–present.  
Member of the board, Enabling Open Scholarship, 2009–2017.  
Testified before the House of Representatives Committee on Science, Space and Technology Subcommittee on Investigations and Oversight, March 29, 2012.  
Member, Advisory Board, Directory of Open-Access Journals, 2012–2019.  
Member, Advisory Board, Knowledge Unlatched, 2013–present.

### *Reviewing*

Journals: *Cognition*, *Communications of the Association for Computing Machinery*, *Computational Intelligence*, *Computational Linguistics*, *Grammars*, *IEEE Pattern Analysis and Machine Intelligence*, *Journal of Artificial Intelligence Research*, *Journal of the Association for Computing Machinery*, *Journal of Logic, Language, and Information*, *Journal of Logic Programming*, *Journal of Optimization Theory and Applications*, *Language and Cognitive Processes*, *Letters on Programming Languages and Systems*, *Linguistics*, *Linguistics and Philosophy*, *Minds and Machines*, *Proceedings of the Royal Society of London*, *SIAM Journal on Computing*, *Stanford Encyclopedia of Philosophy*, *Transactions of the Association for Computational Linguistics*.

Refereed conference proceedings: Annual Meeting of the Association for Computational Linguistics, Annual Meeting of the European Chapter of the Association for Computational Linguistics, IEEE/ACM International Symposium on Microarchitecture, International Conference on Computational Linguistics, International Logic Programming Symposium, International Workshop on Machine Learning, Joint International Conference and Symposium on Logic Programming, Meeting of the European Association for Computational Linguistics, Natural Language Understanding and Logic Programming Workshop, North American Conference on Logic Programming, Symposium on Principles of Database Systems, Symposium on User Interface Software and Technology, USENIX Conference, Workshop on Tree-Adjoining Grammars and Related Frameworks (TAG+).

National Research Council of Canada, National Science Foundation.

### **TEACHING**

Courses taught include: Introduction to Computer Science, Abstraction and Design in Computation, Systems Design Projects, Principles of Programming Languages, Principles of Programming Language Compilation, Advanced Principles of Programming Language Compilation, Natural Language Processing, Advanced Topics in Natural Language Processing, User Interfaces, Information Retrieval and Visualization, Can Machines Think?, Parsing Technology and Natural Language (University of California at Santa Cruz, Summer, 1991), Parsing from a Logical Perspective (European Summer School on Logic, Language, and Information, Summer, 1994), Transducers (European Summer School on Logic, Language, and Information, Summer, 2003;

European Summer School on Logic, Language and Information, Summer, 2005),  
Research Methodologies in Computational Linguistics (MIT, Summer, 2005)

Cambridge, Massachusetts  
April 2, 2021