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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.

PROFESSIONAL EXPERIENCE

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

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

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

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

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

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 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 Gramaticales de Unificación*, Editorial Teide, Barcelona, 1989. French translation: *Formalismes Syntaxiques pour le Traitement Automatique du Langage Naturel*, Philip Miller and Thérèse Torris, editors, Hermeès, 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-adjointing 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.
- 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.
- 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.
- Shawn Edmondson, Jon Christensen, Joe Marks, and Stuart M. Shieber. A general cartographic labeling algorithm. *Cartographica*, 33(4):13–23, Winter 1997.
- 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. *Journal of Natural Language Engineering*, 13(2):165–183, June 2007.
- David C. Parkes, Michael O. Rabin, Stuart M. Shieber, and Christopher Thorpe. Practical secrecy-preserving, verifiably correct and trustworthy auctions. *Electronic Commerce Research and Applications*, 2008.

REFEREED CONFERENCE PAPERS

- Stanley J. Rosenschein and Stuart M. Shieber. Translating English into logical form. In *Proceedings of the 20th Annual Meeting of the Association for Computational Linguistics*, pages 1–8, University of Toronto, Toronto, Canada, June 16–18 1982.
- Stuart M. Shieber, Susan U. Stucky, Hans Uszkoreit, and Jane J. Robinson. Formal con-

- straints on metarules. In *Proceedings of the 21st Annual Meeting of the Association for Computational Linguistics*, pages 22–27, Massachusetts Institute of Technology, Cambridge, Massachusetts, June 15–17 1983.
- Stuart M. Shieber. Sentence disambiguation by a shift-reduce parsing technique. In *Proceedings of the Eighth International Joint Conference on Artificial Intelligence*, pages 699–703, Karlsruhe, West Germany, August 8–12 1983.
- Fernando C. N. Pereira and Stuart M. Shieber. The semantics of grammar formalisms seen as computer languages. In *Proceedings of the Tenth International Conference on Computational Linguistics*, pages 123–129, Stanford University, Stanford, California, July 2–6 1984.
- Stuart M. Shieber. The design of a computer language for linguistic information. In *Proceedings of the Tenth International Conference on Computational Linguistics*, pages 362–366, Stanford University, Stanford, California, July 2–6 1984.
- Stuart M. Shieber. Using restriction to extend parsing algorithms for complex-feature-based formalisms. In *Proceedings of the 23rd Annual Meeting of the Association for Computational Linguistics*, pages 145–152, University of Chicago, Chicago, Illinois, July 8–12 1985.
- Ivan A. Sag, Ronald Kaplan, Lauri Karttunen, Martin Kay, Carl Pollard, Stuart Shieber, and Annie Zaenen. Unification and grammatical theory. In *Proceedings of the 1986 West Coast Conference on Formal Linguistics*, 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, August 25–29 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.
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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, September 30 - October 2 1991.
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- Jon Christensen, Joseph Marks, and Stuart M. Shieber. Algorithms for cartographic label placement. In *Proceedings of the 1993 Annual Joint Convention of the ASPRS and ACSM*, volume 1, pages 75–89, New Orleans, Louisiana, February15–18 1993.
- Kathy Ryall, Joe Marks, Murray Mazer, and Stuart M. Shieber. Semi-automatic region delineation for floor plans. In *Proceedings of the Third International Conference on Document Analysis and Recognition (ICDAR '95)*, volume 2, pages 964–969, 1995.
- 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, February 9–11 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 Eighteenth 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, April 30–May 1 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, May 20–22 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, October 4–6 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, June 6–10 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*, Malaga, Spain, 29–30 July 2006.
- 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)*, Trento, Italy, 3–7 April 2006.
- 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.
- 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-adjointing 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.
- Sevan G. Ficici, Avi Pfeffer, Ya’akov Gal, and Barbara Grosz 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.
- Rebecca Nesson, Giorgio Satta, and Stuart M. Shieber. Optimal k -arization of synchronous tree-adjointing grammar. In *Proceedings of the Ninth International Workshop on Tree Adjoining Grammars and Related Formalisms (TAG+ 9)*, Tübingen, Germany, 7–8 June 2008.

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 diagrams. In Paul Heckbert, editor, *Graphics Gems IV*. Academic Press, Cambridge, Massachusetts, 1994.

TECHNICAL REPORTS

- Stuart Shieber, Hans Uszkoreit, Fernando Pereira, Jane Robinson, and Mabry Tyson. The formalism and implementation of PATR-II. In Barbara J. Grosz and Mark Stickel, editors, *Research on Interactive Acquisition and Use of Knowledge*, techreport 4, pages 39–79. SRI International, Menlo Park, CA, November 1983. Final report for SRI Project 1894.
- 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. International patents pending.
- 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.

- Adam Ginsburg, Joe Marks, and Stuart M. Shieber. Browser for documents with annotations. U. S. patent filed and pending, April 1998.
- 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 6,774,899, July 2004.

OTHER WORKS

- Stuart M. Shieber. Proposal for a formalism for sublanguage specification. Manuscript, Kurzweil Applied Intelligence (now ScanSoft), January 27 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.

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-adjoining 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 Graduate Student Conference, Harvard University, Cambridge, Massachusetts, May, 2005.
- . Symbolic Systems Program Colloquium. Stanford University, October, 2006.
- Developments in synchronous tree-adjointing gramars. 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.
- 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.

PROFESSIONAL RESPONSIBILITIES

- 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–present.
- 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.
- National Academy of Sciences Committee on Intellectual Property and the Emerging Information Infrastructure, 1997–1999.
- 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.
- Reviewing: *Cognition*, *Communications of the Association for Computing Machinery*, *Computational Intelligence*, *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, SIAM Journal on Computing, Stanford Encyclopedia of Philosophy.

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, 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)

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