

## Education

Ph.D. (1991) **Artificial Intelligence (AI)**. AI Laboratory, Dept. of Electrical Engineering and Computer Science (EECS). Massachusetts Institute of Technology (MIT), Cambridge MA.

S.M. (1986) **Computer Science**. EECS. MIT, Cambridge MA.

B.Sc(Eng). (1984) **Computing Science**. First Class Honours. Imperial College of Science and Technology. University of London, London UK. Associateship of the City and Guilds of London Institute (ACGI).

## Appointments

- **Associate Professor**. Depts. of Linguistics and Computer Science. University of Arizona. Tucson AZ. 2005–*present*
- Dept. of Linguistics **Human Language Technology (HLT) Master's Program coordinator**. 2006–*present*
- **Visiting Researcher**. Laboratory for Information and Decision Systems (LIDS). MIT, Cambridge MA. Jan–August 2008
- **Assistant Professor**. Depts. of Linguistics and Computer Science. University of Arizona. Tucson AZ. 2003–2005
- **Visiting Lecturer**. Linguistics Program. Princeton University, Princeton NJ. 2002
- **Research Scientist**. (1994–2003). Provisional Research Scientist (1991–1994). Computer Science Division. NEC Research Institute. Princeton NJ. 1991–2003

## Publications

- Modeling linguistic theory on a computer: from GB to minimalism, Fong, S. and R. C. Berwick, MIT Press. *in prep.*
- Parsing in the Minimalist Program: On SOV Languages and Relativization. Fong, S. Canadian Journal of Linguistics (CJL). *in press*
- Treebank Parsing and Knowledge of Language: A Cognitive Perspective. Fong, S. and R.C. Berwick. In Proceedings of the 30<sup>th</sup> Annual Meeting of the Cognitive Science Society. 2008.
- Arabic PAPPI. Fong, S. In Benmamoun, B. (Ed.) Perspectives on Arabic Linguistics XIX. John Benjamins, 19–35. 2007
- Modeling Q-Feature Movement in Japanese. Ginsburg, J. and S. Fong. Volume 15: Coyote Papers: Working Papers in Linguistics, Psycholinguistic and Computational Perspectives. Brewer, Jordan, P. O'Rourke and P. Richtsmeier (eds.). University of Arizona Linguistics Circle. 2007
- Obstacles and regions. Fellbaum, C. and S. Fong. *Linguistica Computazionale*, Vol XXII-XXIII. Istituti Editoriali E Poligrafici Internazionali, Pisa-Rome. 69-88. 2006

- Constructing filler-gap dependencies in Chinese possessor relative clauses. Lin, C.-J. , S. Fong, and T. G. Bever. In Proceedings of PACLIC19. *Academica Sinica*, 143-154. 2005
- Minimalist parsing and Japanese: on theory and experiential factors. Fong, S. and Y. Hirose. In Proceedings of the Sixth Tokyo Conference on Psycholinguistics, Ed. Otsu, Y. Hituzi Syobo Publishing Co., 95-116. 2005
- Computation with probes and goals: a parsing perspective. Fong, S. In Di Sciullo, A.M. and R. Delmonte (Eds.) *UG and External Systems*. John Benjamins, 311-334. 2005
- Morpho-syntax parsing. Di Sciullo, A.-M. and S. Fong. In Di Sciullo, A.M. and R. Delmonte (Eds.) *UG and External Systems*. John Benjamins, 247-268. 2005
- Semantic opposition and WordNet. Fong, S. *Journal of Logic, Language and Information*. 13: 159-171. 2004
- Prosodic phrasing in Japanese and parsing in the minimalist program. Fong, S. & Y. Hirose. 21st Annual Meeting of the Japanese Cognitive Science Society, 314-315. 2004
- On the ontological basis for logical metonymy: telic/agentive roles and WordNet. Fong, S. Proceedings of OntoLex 2002. Las Palmas, Canary Islands, Spain. 2002
- What does it mean to be a shelf? Semantic bleaching and WordNet.” Fong, S. Proceedings of the 1st Global WordNet Conference (GWN), January 22-25, Mysore, India. 351-359. 2002
- Ghosts, Shadows and resultatives: the lexical representation of verbs. Fong, S., C. Fellbaum & D. Lebeaux. In *Traitement Automatique des Langues (TAL)* journal, issue 42:3. 2001
- Japanese PAPPI. Fong, S. In *Researching and Verifying an Advanced Theory of Human Language, Report (5)*, Kanda University of International Studies (KUIS), Chiba, Japan. 445-464. 2001
- Efficient parsing for word structure. Di Sciullo, A.M. & S. Fong. In Proceedings of the 6th Natural Language Processing Pacific Rim Symposium (NLPRS-2001), 741-748. 2001
- A modular approach to Turkish noun compounding: The Integration of a Finite-State Model. Birturk, A. & S. Fong. In Proceedings of the 6th Natural Language Processing Pacific Rim Symposium (NLPRS-2001), 525-531. 2001
- The color of semantic opposition in WordNet. Fong, S. Proceedings of the 3rd Workshop on Inference in Computational Semantics (ICoS-3), Siena, Italy. 2001
- On mending a torn dress: the frame problem and WordNet. Fong, S. Proceedings of the Workshop on WordNet and Other Lexical Resources, North American Chapter of the Association for Computational Linguistics (NAACL). 2001
- Shadows: a type of non-subcategorized object. Fong, S., C. Fellbaum & D. Lebeaux. In Proceedings of the First International Workshop on Generative Approaches to the Lexicon (GL-2001). 2001
- Asymmetry, zero morphology and tractability. Di Sciullo, A.M. & S. Fong. In Proceedings of the 15th Pacific Asia Conference on Language, Information and Computation (PACLIC-15), 2001

- 61–72.
- Natural Language Grammatical Inference with Recurrent Neural Networks, Lawrence, S., C.L. Giles & S. Fong. IEEE Trans. on Knowledge and Data Engineering. Vol. 12, No. 1, 126–40. 2000
  - Verb classes and resultative selection in a computational lexicon. Fong, S., C. Fellbaum & D. Lebeaux. In Proceedings of the 1st Meeting on Speech Technology, Seville, Spain. 2000
  - Semantic templates and transitivity alternations in the lexicon. Fong, S., C. Fellbaum & D. Lebeaux. In Proceedings of the 7th Conference on Automatic Natural Language Processing (TALN-2000), pp. 167–176. 2000
  - The representation of verbs and resultatives in a computational lexicon. Fong, S., C. Fellbaum & D. Lebeaux. In Proceedings of the Workshop on Computational Lexicography and Multimedia Dictionaries (COMLEX-2000), 67-70. 2000
  - Parallel principle-based parsing. Fong, S. In Proceedings of the Sixth International Workshop on Natural Language Understanding and Logic Programming (NLULP '99), International Conference on Logic Programming (ICLP), 45–57. 1999
  - Dealing with nominalization in Mandarin Chinese using a principles and parameters parser. Lin, Koong H.C., V.W. Soo & S. Fong, International Journal of Computer Processing of Oriental Languages (CPOL), Vol 11(3), 291–310. 1998
  - Dealing with nominalization in Mandarin Chinese using a principles and parameters parser. Lin, Koong H.C., S. Fong and V.W. Soo. In Proceedings of ICCPOL 1997. 1997
  - Natural language grammatical inference: a comparison of recurrent neural networks and machine learning methods. Lawrence, S., S. Fong & C. L. Giles. In Connectionist, statistical, and symbolic approaches to learning for natural language processing. Eds: Wermter, S. & E. Riloff & G. Scheler. Lecture Notes in Artificial Intelligence. Springer-Verlag. 33-47. 1996
  - On the applicability of neural network and machine learning methodologies to natural language processing. Lawrence, S., S. Fong & C. L. Giles. In Proceedings of the Workshop on New Approaches to Learning for Natural Language Processing. International Joint Conference on Artificial Intelligence (IJCAI). 1995
  - A quarter century of computation with transformational grammar. Berwick, R.C. & S. Fong. In Linguistics and Computation, Eds. Cole, J. et al., CSLI Lecture Notes No. 52, Stanford University, 103–143. 1995
  - Madama Butterfly redux: parsing English and Japanese with a principles-and-parameters approach.” Berwick, R.C. & S. Fong. In Japanese Sentence Processing, Eds. R. Mazuka et al. Lawrence Erlbaum, 177–208. 1995
  - Cartesian computation: the PAPPI project, S. Fong. In Proceedings of the Fifth International Workshop on Natural Language Understanding and Logic Programming (NLULP'95). 1995
  - Towards a proper linguistic and computational treatment of scrambling: An Analysis of Japanese. Fong, S. In Proceedings of the Sixteenth International Conference on 1994

Computational Linguistics (COLING-94).

- Isolating cross-linguistic parsing complexity with a principles-and-parameters parser: a case study of Japanese and English." Fong, S., & R.C. Berwick. Proceedings of the Fifteenth International Conference on Computational Linguistics (COLING-92). 1992
- Principle-based parsing and type inference. Fong, S. In Natural Language and Logic Programming, III. Eds. Brown, C. & G. Koch, Elsevier Science Publishers B.V. (North Holland), 43–60. 1991
- The computational implementation of principle-based parsers. Fong, S. In Principle-Based Parsing: Computation and Psycholinguistics, Ed. Berwick, R.C. et al. Studies in Linguistics and Philosophy 44. Kluwer, 65–82. 1991
- Free indexation: combinatorial analysis and a composition algorithm. Fong, S. In Proceedings of the 28th Annual Meeting of the Association for Computational Linguistics (ACL). 1990
- The computational implementation of principle-based parsers. Fong, S. & R.C. Berwick. In Current Issues in Parsing Technologies. Ed. Tomita, Kluwer. 1990
- Principle-based parsing: natural language processing for the 1990s. R.C. Berwick & S. Fong. In Artificial Intelligence at MIT: Expanding Frontiers. Ed. Winston, P.H. MIT Press, 286–325. 1990
- New approaches to parsing conjunctions using Prolog. Fong, S. & R.C. Berwick. In Proceedings of the 23rd Annual Meeting of the Association for Computational Linguistics (ACL), 118–126. 1985
- Revised version of paper also appears in the Proceedings of the 9th International Joint Conference on Artificial Intelligence (IJCAI-85).

### Presentations (since 2000)

- *Can Statistical Parsers WOW! You: A Cognitive Assessment.* Fong, S. and R.C. Berwick. Psychocomputational Models of Human Language Acquisition (PsychoCompLA-2008) workshop at the 30<sup>th</sup> Annual Meeting of the Cognitive Science Society. 2008  
July 23
- *Cognition and Statistical Natural Language Parsing.* Princeton University. May 8
- *Statistical Natural Language Parsing: Reliable Models of Language?* Special 1-day MIT Workshop: Where Does Syntax Come From? Have We All Been Wrong? MIT, Cambridge MA. 2007  
October 19
- *The SLIC Video Browsing System Project description and future plans.* Kobus, B., A. Efrat and S. Fong. Computer Science Colloquium. University of Arizona, Tucson AZ. September 4
- *The Great (Penn Treebank) Robbery: When statistics is not enough.* Berwick, R.C., M. Coen, S. Fong and P. Niyogi. Psychocomputational Models of Human August 1

- Language Acquisition (PsychoCompLA-2007). Nashville TN.
- *Subtitling and Automatic Speech Recognition*. Fong, S. and R. Swamranjini. Mental Architecture for Processing and Learning of Language (MAPLL). Hiroshima Universty, Japan. July 14-15
  - *Opportunities and Challenges for Linguistic Theory in Computation*. Computer Science Colloquium Series. University of Arizona, Tucson AZ. 2006 November 30
  - *Parsing and multiple Wh-questions in Japanese*. Fong, S. and J. Ginsburg. Fifth International Workshop on Evolutionary Cognitive Sciences. Tokyo University, Tokyo, Japan. July 15 April 24
  - *Computing with Linguistic Theory*. ECE Distinguished Lecturer Series. Dept. of Electrical and Computer Engineering. University of Arizona, Tucson AZ.
  - *Cost and Benefit of Scrambling in Japanese Relative Clauses*. Hirose, Y. and S. Fong. Japanese Cognitive Science Society Conference (JCSS 2005) Kyoto University. 2005 July 29-31
  - *Arabic PAPP: A Principles-and-Parameters Parser*. The 19th Annual Symposium on Arabic Linguistics. University of Illinois at Urbana-Champaign. April 1-3 2005
  - *Minimalist Program Parsing: Theory and experimental results*. Fong, S. The 18th Annual CUNY Sentence Processing Conference. University of Arizona. March 31-April 2 March 18-19
  - *Evidence for Parsing Universals from Turkish and Japanese*. The 6th Tokyo Conference on Psycholinguistics (TCP 2005). January 14
  - *Modeling Linguistic Theory on a Computer: From GB to Minimalism*. MIT IAP Computational Linguistics Fest
  - *Minimalist Parsing: SOV Languages and Relative Clauses*. Fourth Annual Conference of the Federation on Natural Language Processing: Interfaces Conference. IPSI-2004. Pescara, Italy. 2004 July 30 – August 1
  - *Traitement relationnel des composées*. Di Sciullo, A.M. and S. Fong. Fondements Relationnels du Traitement des Langues Naturelles, ACFAS Conference, UQAM, Montreal, Canada. May 10
  - *Parsing in the Minimalist Program*. Invited lecture. Joint Geneva-Lausanne doctoral program workshop. University of Geneva, Switzerland. April 29
  - *Japanese to English Machine Translation Evaluation*. Language Technologies Institute (LTI), CMU, Pittsburgh. 2003 November 21
  - *Obstacles and Regions*. Fong, S. & C. Fellbaum. Workshop on Ontological Knowledge and Linguistic Coding at the 25th annual meeting of the German Linguistics Society (Deutsche Gesellschaft für Sprachwissenschaft), Munich, Germany. February 26
  - *The Verb Lexicon and Event Template Design*. Institute for Linguistics, University of Potsdam, Potsdam, Germany. February 24
  - *Fixed Expressions, Body Parts and Machine Translation*. Berlin-Brandenburg Academy of Sciences and Humanities, Berlin, Germany. January 25

- The Structuring of Knowledge: Three Views from Inferencing and WordNet. Berlin-Brandenburg Academy of Sciences and Humanities, Berlin, Germany. January 24
- *Resultatives and Shadows*. Verb Meeting, Institute for Research in Cognitive Science (IRCS), University of Pennsylvania. 2002  
November 21
- *Minimalist Parsing*. CUNY Psycholinguistics Supper Club, CUNY Graduate Center, New York. November 12
- *Verb Classes and WordNet: Obstacles and Regions*. Institute for Systems Science and Biomedical Engineering of the Italian National Research Council (LADSEB-CNR), Padua, Italy. October 8
- *Computation with Probes and Goals: A Parsing Perspective*. The 2nd Conference of the Federation on Natural Language Processing: Language, Brain and Computation. University of Venice, Venice, Italy. October 3–5
- *Three Views on WordNet from Semantic Inference*. MIT Artificial Intelligence Laboratory, Cambridge MA. March 15
- *WordNet: Three Views on Semantic Inference*. University of Montreal, Canada. February 28
- *The PAPPI System: Languages and Parameterization*. International Institute of Information Technology, Hyderabad, India. January 28
- PAPPI: A Logic-Based System for Multilingual Parsing. Miyagi Gakuin Women's College, Sendai, Japan. 2001  
December 6
- Semantic Inference and WordNet. Yokohama National University, Yokohama, Japan. November 16
- *The PAPPI System: Languages and Parameterization*. Colloquium on Language Issues, Rabat, Morocco. October 24–26
- *Efficient Parsing for Word Structure*. Fong, S. & A.M. Di Scullo. Conference on Grammar and NLP, UQAM, Montréal, Canada. October 14
- Lexical Semantics, Semantic Opposition and WordNet. Math Linguistics seminar, Department of Linguistics, UCLA. July 24
- *Morphology and Tractability*. Fong, S. & A.M. Di Scullo. Asymmetry Conference. UQAM, Montréal, Canada. May 7–10
- *Ghosts, Shadows and Resultatives: The Lexical Representation of Verbs*. Colloquium on Computational Linguistics, University of Maryland at College Park. May 2
- *The PAPPI System: Overview and Recent Developments*. Department of Computer Science, University of Tokyo, Tokyo, Japan. 2000  
December 12
- *The PAPPI System: Overview and Demonstration*. Princeton University Linguistics Program Seminar, Princeton, NJ. November 30
- *Two Types of Non-Subcategorized Objects: Shadows and Ghosts*. The Eleventh Computational Linguistics in the Netherlands Meeting (CLIN-2000), Tilburg, Holland. November 3

- *The Verb Lexicon and Semantic Templates*. Institute for Language and Speech Processing (ILSP), Athens, Greece. September 19

## Grant Activity

- Co-PI on *Asymmetry at the Interfaces*. Amount: CDN\$2.5M, 6.25% effort. Social Sciences and Humanities Research Council of Canada (SSHRC). Project Director: Anna Maria Di Sciullo. Lead institution: University of Québec at Montréal (UQAM). 2004–2009
- Collaborateur (Consultant) Computational Morphology. *Les asymétries des langues naturelles et leur traitement par les systèmes de performance*. Amount: CDN\$1.8M, 5% effort. Social Sciences and Humanities Research Council of Canada (SSHRC). Project Director: Anna Maria Di Sciullo, University of Québec at Montréal (UQAM), 2000–2003
- Cooperative Member (Consultant) Natural Language Parsing in Japanese. *Researching and Verifying an Advanced Theory of Human Language*. Amount: ¥300M, 5% effort. Grant-in Aid for Center of Excellence (COE) Research. Japanese Ministry of Education, Science and Culture. Research Leader: Kazuko Inoue. Graduate School of Language Sciences, Kanda University of International Studies (KUIS), Chiba, Japan. 1998–2000

## Internships

- IBM T.J. Watson Research Center. Hawthorne. N.Y. 1986–1987  
Prototype qualitative reasoning system for computer system performance diagnosis.
- Daresbury Nuclear Physics Laboratory. Science and Engineering Research Council of Great Britain (SERC). Warrington. England. 1983  
Implementation of relational database management package

## Awards

- IBM Graduate Fellow Award. EECS. MIT, Cambridge MA. 1987–1990
- J.F. Kennedy Scholar. Kennedy Memorial Trust. MIT, Cambridge MA 1984–1986
- Governors' Prize in Computing Science. Imperial College. London UK. 1984
- IBM Prize in Computing Science. Imperial College. London UK. 1984
- Arthur Anderson Prize in Computing Science. Imperial College. London UK. 1983