

Lane O.B. Schwartz, Ph.D

Assistant Professor

*Department of Linguistics
University of Illinois at Urbana-Champaign*

EMPLOYMENT HISTORY	<p><i>Research Scientist</i> Dayton, Ohio</p> <p>Design and execute large-scale machine translation research over a broad range of high- and low-resource language pairs. Research and develop novel cognitive and computational models of human language in the context of statistical machine translation. Conduct research in collaborative human-machine systems for interactive translation in consultation with human translators at the National Air and Space Intelligence Center. Regular contributor to Moses, the leading phrase-based machine translation system.</p>	<p>Air Force Research Laboratory October 2010 – August 2014</p>
	<p><i>Visiting Researcher</i> Baltimore, Maryland</p> <p>Conducted research in semantically- and syntactically-informed statistical machine translation at the JHU Center of Excellence. Leadership role in the development of Joshua, a state-of-the-art syntax-based statistical machine translation system at the JHU Center for Speech and Language Processing.</p>	<p>Johns Hopkins University June 2008 – July 2010</p>
	<p><i>Research Fellow / Teaching Assistant</i> Minneapolis, Minnesota</p> <p>Engaged in the design of cognitive models of human language and the implementation of algorithms for processing these models computationally. My research applied these models to semantically-driven spoken language interfaces built on incremental speech recognition, incremental parsing, and grounded semantic interpretation components. Teaching responsibilities included design of homework and student lab exercises in addition to lecture and grading duties.</p>	<p>University of Minnesota August 2005 – May 2009</p>
	<p><i>Software Engineer</i> Rochester, Minnesota</p> <p>Professional experience developing and testing complex test scenarios for parallel grid computing environments. Duties included leadership role in final testing of major IBM grid computing platform, including post-test analysis and review.</p>	<p>IBM May 2003 – August 2005</p>
	<p><i>Adjunct Faculty in Computer Science</i> Des Moines, Iowa</p> <p>Taught undergraduate-level Computer Science at Des Moines campus of William Penn University. Responsibilities included all aspects of course design in addition to lecturing and grading duties.</p>	<p>William Penn University Spring 2003</p>
HONORS	<p><i>Gates Cambridge Scholar</i> Cambridge, England</p> <p>One of only 40 U.S. recipients, selected by the Gates Cambridge Trust on the basis of my strong capacity for leadership and passionate commitment to improving the lives of others. This highly competitive distinction provides for fully-funded graduate study at the University of Cambridge.</p>	<p>University of Cambridge September 2001</p>

EDUCATION

University of Minnesota

Ph.D in Computer Science. February 2012.

M.S. in Computer Science. August 2010.

University of Cambridge

M.Phil in Computer Speech, Text & Internet Technology. July 2002.

Luther College

B.A. in Computer Science, *summa cum laude*. May 2001.

University of Nottingham

International study in Computer Science. September 1999 – June 2000.

THESES

**An Incremental Syntactic Language Model
for Statistical Phrase-based Translation**

Lane Schwartz. Advisors: William Schuler and Chris Callison-Burch.

Ph.D Thesis — University of Minnesota. Feb 2012.

Lexical Acquisition from Corpora

Lane Schwartz. Advisor: Ann Copestake.

Master's Thesis — University of Cambridge. July 2002.

JOURNAL
ARTICLES

Better Splitting Algorithms for Parallel Corpus Processing

Lane Schwartz

The Prague Bulletin of Mathematical Linguistics. Vol. 98. Oct 2012.

**Broad-Coverage Incremental Parsing using
Human-Like Memory Constraints**

William Schuler, Samir AbdelRahman, Tim Miller, Lane Schwartz

Journal of Computational Linguistics. Vol. 36:1. Mar 2010.

**Hierarchical Phrase-based Grammar Extraction in Joshua:
Suffix Arrays and Prefix Trees**

Lane Schwartz and Chris Callison-Burch

The Prague Bulletin of Mathematical Linguistics. Vol. 93. Jan 2010.

**A Framework for Fast Incremental Interpretation
during Speech Decoding**

William Schuler, Stephen Wu, Lane Schwartz

Journal of Computational Linguistics. Vol. 35:3. Sep 2009.

REFEREED
CONFERENCE
PAPERS

**Incremental Syntactic Language Models
for Phrase-based Translation**

Lane Schwartz, Chris Callison-Burch, William Schuler, Stephen Wu
Proceedings of the 49th Annual Meeting of the Association for Computational Linguistics (ACL'11). Jun 2011.

**Positive Effects of Redundant Descriptions in an
Interactive Semantic Speech Interface**

Lane Schwartz, Luan Nguyen, Andrew Exley, William Schuler
International Conference on Intelligent User Interfaces (IUI'09). Jan 2009.

Multi-Source Translation Methods

Lane Schwartz
Conference of the Association for Machine Translation in the Americas (AMTA'08).
Oct 2008.

**Toward a Psycholinguistically-Motivated
Model of Language Processing**

William Schuler, Samir AbdelRahman, Tim Miller, Lane Schwartz
International Conference on Computational Linguistics (COLING'08). Aug 2008.

Referential Semantic Language Modeling for Data-Poor Domains

Stephen Wu, Lane Schwartz, William Schuler
International Conference on Acoustics, Speech, and Signal Processing (ICASSP'08).
Apr 2008.

**Exploiting Referential Context in Spoken Language Interfaces
for Data-Poor Domains**

Stephen Wu, Lane Schwartz, William Schuler
International Conference on Intelligent User Interfaces (IUI'08). Jan 2008.

REFEREED
WORKSHOP
PAPERS

The MIT-LL/AFRL IWSLT-2013 MT System

Michael Kazi, Michael Coury, Elizabeth Salesky, Jessica Ray, Wade Shen,
Terry Gleason, Tim Anderson, Grant Erdmann, Lane Schwartz, Brian Ore, Raymond
Slyh, Jeremy Gwinnup, Katherine Young, Michael Hutt
International Workshop on Spoken Language Translation (IWSLT'13). Dec 2013.

**Joshua 2.0: A Toolkit for Parsing-Based Machine Translation with
Syntax, Semirings, Discriminative Training and Other Goodies**

Zhifei Li, Chris Callison-Burch, Chris Dyer, Juri Ganitkevitch, Ann Irvine, Sanjeev Khu-
danpur, Lane Schwartz, Wren Thornton, Ziyuan Wang, Jonathan Weese, Omar Zaidan
ACL Fifth Workshop on Statistical Machine Translation (WMT'10). Jul 2010.

**Reproducible Results in Parsing-Based Machine Translation:
The JHU Shared Task Submission**

Lane Schwartz

ACL Fifth Workshop on Statistical Machine Translation (WMT'10). Jul 2010.

**Demonstration of Joshua: An Open Source Toolkit
for Parsing-Based Machine Translation**

Zhifei Li, Chris Callison-Burch, Chris Dyer, Juri Ganitkevitch, Ann Irvine, Sanjeev Khudanpur, Lane Schwartz, Wren Thornton, Jonathan Weese, Omar Zaidan
Association for Computational Linguistics (ACL'09) Software Demonstrations. Aug 2009.

**Joshua: An Open Source Toolkit
for Parsing-Based Machine Translation**

Zhifei Li, Chris Callison-Burch, Chris Dyer, Juri Ganitkevitch, Ann Irvine, Sanjeev Khudanpur, Lane Schwartz, Wren Thornton, Jonathan Weese, Omar Zaidan
EACL Fourth Workshop on Statistical Machine Translation (WMT'09). Mar 2009.

**Incremental Semantic Models for
Continuous Context-Sensitive Speech Recognition**

Tim Miller, Lane Schwartz, William Schuler

Workshop on Semantic Representation of Spoken Language (SRSL'07). Nov 2007.

ACADEMIC
SERVICE

Served on Scholarship Selection Panel:

2013 Gates Cambridge Trust, United States Scholar Interviews

Served as Program Committee Peer Reviewer:

2013, 2011, 2010 Empirical Methods in Natural Language Processing (EMNLP)
2013 International Joint Conference on Natural Language Processing (IJCNLP)
2013 Machine Translation Summit (MT Summit)
2013 North American Association for Computational Linguistics (NAACL)
2013 Recent Advances in Natural Language Processing (RANLP)
2012, 2010 International Conference on Computational Linguistics (COLING)
2009 IEICE Transactions on Information Systems

Served as Mentor to Graduate Students:

2013, 2012 Air Force Research Laboratory / Dayton Area Graduate Studies
Student-Faculty Research Fellowship Program (DAGSI)
2013, 2012 Association for Computational Linguistics
Student Research Workshop (ACL-SRW)