

Jonathan David Louis May

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RESEARCH INTERESTS Computational Linguistics, Machine Translation,
Machine Learning, Automata Theory

WORK EXPERIENCE **USC Information Sciences Institute**, Marina Del Rey, California
Research Assistant Professor, [Department of Computer Science](#) *July 2016 – present*
Computer Scientist, [Intelligent Systems Division](#) *May 2014 – present*
Projects:
DEEPLANG (PI)
DARPA-LORELEI (Co-PI)
DARPA-BOLT (Broad Operation Language Translation)
IARPA-Metaphor

SDL Language Weaver, Los Angeles, California
Research Scientist *Aug. 2010 – May 2014*
Government Projects Technical Lead:
FP7-FAUST (Feedback Analysis for User-Adaptive Statistical Translation)
DARPA-BOLT (Broad Operation Language Translation)
CTTSO/TSWG-MTIL (Machine Translation for Informal Language)

BBN Technologies, Cambridge, Massachusetts
Staff Scientist, Natural Language Processing group *Sep. 2001 – Jun. 2004*

EDUCATION **University of Southern California**, Los Angeles, California
Ph.D, Computer Science. *Sep. 2004 – Aug. 2010*
Thesis: “Weighted Tree Automata and Transducers for Syntactic Natural Language Processing” (Committee: [Kevin Knight](#) (chair), [Daniel Marcu](#), [David Chiang](#), [Sven Koenig](#), [Shri Narayanan](#), [Fernando Pereira](#))

University of Pennsylvania, Philadelphia, Pennsylvania
M.S.E., Computer and Information Science *Feb. 2000 – May 2001*
B.S.E., Computer Science Engineering. *Sep. 1997 – May 2001*

GRANTS AWARDED “DEEPLANG”. 2015. MITRE-funded. \$97,000.
\$15,000 grant for large-memory, large-disk machine for ISI Natural Language group (with Steve DeNeeffe), 2005

PATENTS “Efficient online domain adaptation”.
F. Hieber and J. May. US 9,213,694. Awarded December 15, 2015.

“Personalized machine translation via online adaptation”.

D. Marcu and J. May. US 9,152,622. Awarded October 6, 2015.

“Modification of annotated bilingual segment pairs in syntax-based machine translation”.

W. Wang and J. May and K. Knight. US 8,825,466. Awarded September 2, 2014.

“Systems and methods for tuning parameters in statistical machine translation”.

M. Hopkins and J. May. US 8,694,303. Awarded April 8, 2014.

PUBLICATIONS

REFEREED CONFERENCE PAPERS

Xiaoman Pan, Boliang Zhang, Jonathan May, Joel Nothman, Kevin Knight and Heng Ji. “Cross-lingual Name Tagging and Linking for 282 Languages”. *Proc. ACL*, 2017. To Appear.

Barret Zoph, Deniz Yuret, Jonathan May and Kevin Knight. “Transfer Learning for Low-Resource Neural Machine Translation”. *Proc. EMNLP*, 2016.

Barret Zoph, Ashish Vaswani, Jonathan May and Kevin Knight. “Simple, Fast Noise-Contrastive Estimation for Large RNN Vocabularies”. *Proc. NAACL*, 2016.

Eunsol Choi, Matic Horvat, Jonathan May, Kevin Knight and Daniel Marcu. “Extracting Structured Scholarly Information from the Machine Translation Literature”. *Proc. LREC*, 2016.

Michael Pust, Ulf Hermjakob, Kevin Knight, Daniel Marcu, and Jonathan May. “Parsing English into Abstract Meaning Representation Using Syntax-Based Machine Translation”. *Proc. EMNLP*, 2015.

Jonathan May, Yassine Benjira, and Abdessamad Echihabi. “An Arabizi-English Social Media Statistical Machine Translation System”. *Proc. AMTA*, 2014.

Alberto Barrón-Cedeño, Lluís Màrquez, Carlos A. Henríquez Q., Lluís Formiga, Enrique Romero, and Jonathan May. “Identifying Useful Human Correction Feedback from an On-line Machine Translation Service”. *Proc. IJCAI*, 2013.

Mark Hopkins and Jonathan May. “Models of Translation Competitions”. *Proc. ACL*, 2013.

Daniel Pighin, Lluís Màrquez, and Jonathan May. “An Analysis (and an Annotated Corpus) of User Responses to Machine Translation Output”. *Proc. LREC*, 2012

Mark Hopkins and Jonathan May. “Tuning as Ranking”. *Proc. EMNLP*, 2011.

Jonathan May, Kevin Knight, and Heiko Vogler. “Efficient Inference Through Cascades of Weighted Tree Transducers”. *Proc. ACL*, 2010.

Jonathan May and Kevin Knight. “Syntactic Re-Alignment Models for Machine Translation”. *Proc. EMNLP*, 2007.

Johanna Högberg, Andreas Maletti, and Jonathan May. “Bisimulation Minimisation for Weighted Tree Automata”. *Proc. International Conference on Developments in Language Theory (DLT)*, 2007.

Johanna Högberg, Andreas Maletti, and Jonathan May. “Backward and Forward Bisimulation Minimisation of Tree Automata”. *Proc. International Conference on Implementation and Application of Automata (CIAA)*, 2007.

Jonathan May and Kevin Knight. “Tiburón: A Weighted Tree Automata Toolkit”. *Proc. International Conference on Implementation and Application of Automata (CIAA)*, 2006.

Jonathan May and Kevin Knight. “A Better N-Best List: Practical Determinization of Weighted Finite Tree Automata”. *Proc. NAACL-HLT*, 2006.

REFEREED JOURNAL ARTICLES

Wei Wang, Jonathan May, Kevin Knight, and Daniel Marcu. “Re-Structuring, Re-Labeling, and Re-Aligning for Syntax-Based Machine Translation”. *Computational Linguistics*. 36(2). June, 2010.

Johanna Högberg, Andreas Maletti, and Jonathan May. “Backward and Forward Bisimulation Minimisation of Tree Automata”. *Theoretical Computer Science*. 410(37). September, 2009.

Jonathan Graehl, Kevin Knight, and Jonathan May. “Training Tree Transducers”. *Computational Linguistics*, 34(3). September, 2008.

Jonathan May, Ada Brunstein, Prem Natarajan, and Ralph Weischedel. “Surprise! What’s in a Cebuano or Hindi Name?”. *ACM Transactions on Asian Language Information Processing*, 2(3). September, 2003.

REFEREED WORKSHOP PAPERS

Jonathan May and Jay Priyadarshi. “SemEval-2017 Task 9: Abstract Meaning Representation Parsing and Generation”. *Proc. SemEval*, 2017.

Jonathan May. “SemEval-2016 Task 8: Meaning Representation Parsing”. *Proc. SemEval*, 2016.

Jonathan Gordon, Jerry Hobbs, Jonathan May, Michael Mohler, Fabrizio Morbini, Bryan Rink, Marc Tomlinson, and Suzanne Wertheim. “A Corpus of Rich Metaphor Annotation”. *Proc. Workshop on Metaphor in NLP*, 2015.

Jonathan Gordon, Jerry Hobbs, Jonathan May, and Fabrizio Morbini. “High-Precision Abductive Mapping of Multilingual Metaphors”. *Proc. Workshop on Metaphor in NLP*, 2015.

Matthias Büchse, Jonathan May, and Heiko Vogler. “Determinization of Weighted Tree Automata Using Factorizations”. *Proc. ATANLP*, 2009.

BOOK CHAPTER

Kevin Knight and Jonathan May. “Applications of Weighted Automata in Natural Language Processing”. In M. Droste, W. Kuich, and H. Vogler, editors, *Handbook of Weighted Automata*. Springer-Verlag, 2009.

OTHER PUBLICATIONS

Jinxi Xu, Ana Licuanan, Jonathan May, Scott Miller, and Ralph Weischedel. “Answer Selection and Confidence Estimation”. *New Directions in Question Answering, Papers from 2003 AAAI Spring Symposium*, Stanford University, Stanford, CA AAAI Press, 2003.

Jinxi Xu, Ana Licuanan, Jonathan May, Scott Miller, and Ralph Weischedel. “TREC 2002 QA at BBN: Answer Selection and Confidence Estimation”. *Proc. TREC*, 2002.

SOFTWARE Tiburon, a weighted tree automata toolkit that incorporates algorithms from thesis work. Used in several research projects and classes on empirical methods in NLP, and downloaded over 400 times in 31 countries. Downloadable from <http://www.isi.edu/licensed-sw/tiburon>.

PROFESSIONAL ACTIVITY Organizer, Task 9 (AMR Parsing and Generation), [SemEval 2017](#)

Organizer, Task 8 (Meaning Representation Parsing), [SemEval 2016](#)

Social Media Chair for [NAACL HLT 2015](#)

Program Committee, ACL, EMNLP, NAACL, NIPS, AMTA, IJCNLP, CIAA, NACLO

Reviewer, MIT Press, TACL, *Computational Linguistics*

Local Co-Chair for [NAACL HLT 2010](#) (with David Chiang, Jason Riesa, Ed Hovy)

Coordinator, [ISI Natural Language Seminar](#) (2006-7)

INVITED TALKS “How I Learned to Stop Worrying and Love Evaluations”.

Johns Hopkins University, Baltimore, MD *Nov. 2016*

University of Pennsylvania, Philadelphia, PA *Nov. 2016*

“The Machine Learning of Machine Translation”.

University of Southern California, Los Angeles, CA *Aug. 2015*

“Using Syntax-Based Machine Translation to Parse English into Abstract Meaning Representation”.

University of Edinburgh, Edinburgh, UK *Mar. 2015*

“Machine Translation: How it Works, Why it’s Hard, and How To Make it Better”.

Bloomberg, London, UK *Mar. 2015*

University of Edinburgh, Edinburgh, UK *Mar. 2015*

“Toward User-Focused NLP”.

USC-ISI, Marina del Rey, CA *Feb. 2014*

“Models of Translation Competitions”.

USC-ISI, Marina del Rey, CA *Aug. 2013*

“Tuning As Ranking”.

USC-ISI, Marina del Rey, CA *Jul. 2011*

“Natural Language Processing and Weighted Finite-State Machines”.

Umeå University, Umeå, Sweden *Oct. 2008*

“Syntactic Re-Alignment Models for Machine Translation”.

University of California, Berkeley, CA

Apr. 2008

“Bisimulation Minimisation for Weighted Tree Automata”.

Dresden University of Technology, Dresden, Germany

Jun. 2007

HONORS AND
AWARDS

USC School of Engineering Doctoral Fellowship, 2004–2008

University of Pennsylvania, Department of Engineering and Applied Sciences Faculty
Appreciation Award, 2001

Rear Admiral Grace Murray Hopper Endowed Scholarship, 1999–2001

Dean’s List, 1997–1999

MISCELLANEOUS

Outside Interests: Public Transit, Urban Development, Bicycling, Gardening

Date of Birth: August 7, 1978

Citizenship: United States