

Michael Auli

Contact Details

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Current Position

2012 – Present

Post Doc Researcher, Microsoft Research
Deep learning-based models for machine translation
Large-scale discriminative models for translation

Education

- 2008-2011 **Doctor of Philosophy (PhD)**, Natural Language Processing
University of Edinburgh, United Kingdom
Advisors: Philipp Koehn and Adam Lopez
Thesis: Integrated CCG Parsing and Supertagging
- 2004-2008 **Bachelor of Science (BSc)** in Artificial Intelligence
University of Edinburgh, United Kingdom
First class honours, Class Medal Prize
Dissertation: Syntactical Reordering for Statistical Machine Translation
Outside courses in business studies and psychology

Research Interests

- Natural Language Processing, (CCG) parsing, tagging, statistical machine translation
- Applied machine learning, structured prediction, supervised learning, approximate inference, dual decomposition, belief propagation
- Large-scale discriminative training
- Deep learning, recurrent neural networks

Awards and Honours

- **Outstanding Paper Award.** Prize for best 8 papers (1.3% of submissions) at the Conference on the Empirical Methods of Natural Language Processing, 2011
- EPSRC Doctoral Fellowship for Outstanding PhD students 2008-2012 (living stipend & fees)
- ESRC Doctoral Fellowship for Outstanding graduate students (MSc + PhD living stipend & fees, 18% of applications successful)
- Class Medal Prize for best overall academic performance in undergraduate degree
- Roland Berger Strategy Consultants: Student-Club Membership (top 5% interns)

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Refereed Publications

Large Scale Expected BLEU Training of Phrase-based Reordering Models

Michael Auli, Michel Galley, Jianfeng Gao.

In *Proceedings of the Conference on the Empirical Methods of Natural Language Processing (EMNLP)*, October 2014.

Decoder Integration and Expected BLEU Training for Recurrent Neural Network Language Models.

Michael Auli, Jianfeng Gao.

In *Proceedings of the Annual Meeting of the Association of Computational Linguistics (ACL)*, June 2014.

[Acceptance rate: 26%]

Minimum Translation Modeling with Recurrent Neural Networks.

Yuening Hu, **Michael Auli**, Qin Gao, Jianfeng Gao.

In *Proceedings of the European Chapter of the Association of the Computational Linguistics (EACL)*, April 2014.

[Acceptance rate: 25%]

Joint Language and Translation Modeling with Recurrent Neural Networks.

Michael Auli, Michel Galley, Chris Quirk, Geoffrey Zweig.

In *Proceedings of the Conference on the Empirical Methods of Natural Language Processing (EMNLP)*, October 2013.

[Acceptance rate: 28%]

Training a Log-Linear Parser with Loss Functions via Softmax-Margin.

Michael Auli and Adam Lopez.

In *Proceedings of the Conference on the Empirical Methods of Natural Language Processing (EMNLP)*, July 2011.

Outstanding Paper Award [1.3% of submissions]

[Acceptance rate for oral presentations: 15%]

A Comparison of Loopy Belief Propagation and Dual Decomposition for Integrated CCG Supertagging and Parsing.

Michael Auli and Adam Lopez.

In *Proceedings of the Annual Meeting of the Association of Computational Linguistics (ACL)*, June 2011.

[Acceptance rate for oral presentation: 18%]

Efficient CCG Parsing: A* versus Adaptive Supertagging.

Michael Auli and Adam Lopez.

In *Proceedings of the Annual Meeting of the Association of Computational Linguistics (ACL)*, June 2011.

[Acceptance rate for poster presentation: 26%]

A Systematic Analysis of Translation Model Search Spaces.

Michael Auli, Adam Lopez, Hieu Hoang, and Philipp Koehn.

In *Proceedings of the Workshop on Statistical Machine Translation (WMT)*, March 2009.

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Thesis / Proposals

Michael Auli. Integrated Supertagging and Parsing. PhD Thesis, University of Edinburgh. Dec 2012.

Michael Auli. CCG-based Models for Statistical Machine Translation. PhD Proposal, University of Edinburgh. May 2009.

Invited Talks

1. *University of Washington*, July 2014, Seattle. Host: Yoav Artzi/Luke Zettlemoyer
2. *University of Washington*, Nov 2012, Seattle. Host: Luke Zettlemoyer
3. *Microsoft Research*, May 2012, Redmond. Host: Chris Quirk
4. *IBM Research*, Dec 2011, Yorktown Heights. Host: Yaser Al-onazian
5. *SDL Language Weaver*, Dec 2011, Los Angeles. Host: Markus Dreyer
6. *SRI International*, Dec 2011, Menlo Park. Host: Xinglong Wang
7. *Raytheon BBN Technologies*, Nov 2011, Boston. Host: Lance Ramshaw
8. *Carnegie Mellon University*, June 2011. Host: Chris Dyer
9. *Johns Hopkins University*, June 2011. Host: Adam Lopez
10. *University of Cambridge*, May 2011. Host: Stephen Clark

Professional Activities

- Program Committee Member / Reviewer:
 - The International Conference of the Association on Computational Linguistics (ACL, 2012, 2013, 2014)
 - The North American Conference on Computational Linguistics (NAACL-HLT 2012, 2013)
 - The Conference of the European Chapter of Association of Computational Linguistics (EACL 2014)
 - The Conference on Empirical Methods in Natural Language Processing (EMNLP 2013, 2014)
- Coordinator of the University of Edinburgh Machine Seminar (June - Dec 2010)
- Teaching: Tutor of first year course about data and analysis, University of Edinburgh, Spring 2010
- Student representative for most of my undergraduate course

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Employment and Research Experience

2012 – Present	Post Doc Researcher Microsoft Research, Redmond, WA, USA Deep Learning-based Statistical Machine Translation
May 2011 – June 2011	Visiting Scholar HLT COE (Human Language Technology Center of Excellence) Johns Hopkins University, MD, USA Research on CCG grammar induction with Adam Lopez
June 2009 – Aug 2009	Visiting Research Assistant Information Sciences Institute University of Southern California, Los Angeles, CA, USA Working with Kevin Knight on tree-to-string word alignment

Consulting, Internships and Other Employment

June 2008 – Aug 2008	Roland Berger Strategy Consultants Munich, Germany Internship Assisted in restructuring project of DAX30 company. Main tasks: progress reporting and presentation of results;
Jun 2007 – Aug 2007	UBS Investment Bank London, United Kingdom Internship in IT Completion of assigned project in 60% of scheduled time allowed me to move from infrastructure division to fixed income trading IT
June 2006 – Dec 2007	NCR Teradata Corporation Vienna, Austria Freelance Consultant Assisted in software-migration project at client-site; responsibility for 15% of project. Tasks included adapting, testing and support during critical times for system migration
Aug 2003 – May 2004	Ministry of Defence Vienna, Austria Military Service Gained insight into work of army human resources department while developing and supporting bespoke software
May 2003 – June 2003	IBM, Vienna Austria, work placement Manager of student group study on alternatives to IBM's e-commerce products

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June 2001	Printcom, Vienna Austria, work placement Placement at a middle-sized print service-provider, IT division
Aug 1999	National Health Insurance, Vienna, Austria, work placement

Languages

English (fluent), German (native)

Personal

Citizenship: Austria