School of Engineering and Applied Science
Harvard University,
Cambridge, MA

Phone: (215) 317-8089
srush@seas.harvard.edu
http://nlp.seas.harvard.edu
@harvardnlp

ALEXANDER M. RUSH

Appointment

Harvard University School of Engineering and Applied Sciences
2015-. Assistant Professor of Computer Science

Facebook Artificial Intelligence Research Lab
2015. Post-Doctoral Fellowship
Advisor: Yann LeCunn

Education

Massachusetts Institute of Technology
2009-2014. Ph.D, Computer Science.
Advisor: Michael Collins
Dissertation: *Relaxation Methods for Natural Language Decoding.*

Columbia University
2011-2014. Visiting Scholar, Department of Computer Science.

Harvard University
2007. B.A., Computer Science. (Magna Cum Laude With Highest Honors.)

Grants and Awards

2012 Best Paper Award, North American Association of Computational Linguistics.

2010 Best Paper Award, Empirical Methods in Natural Language Processing.

2009 Graduate Research Fellow, National Science Foundation.

2006 Outstanding Undergraduate Award Finalist, Computing Research Association.

Recent Publications

Yuntian Deng*, Yoon Kim*, Justin Chiu, Demi Guo, Alexander M. Rush. *Latent Alignment and Variational Attention.* *In submission*

Sam Wiseman, Alexander Rush. *Learning Neural Templates for Text Generation.* *EMNLP 2018*

Sebastian Gehrmann, Yuntian Deng, Alexander Rush. *Bottom-Up Abstractive Summarization.* *EMNLP 2018*

Luke Melas-Kyriazi, George Han, Alexander Rush. *Training for Diversity in Image Paragraph Captioning.* *EMNLP 2018 (Short)*

Luong Hoang, Sam Wiseman, Alexander Rush. *Entity Tracking Improves Cloze-style Reading Comprehension.* *EMNLP 2018 (Short)*

Hendrik Strobelt, Sebastian Gehrmann, Michael Behrisch, Adam Perer, Hanspeter Pfister, Alexander M. Rush. *Seq2Seq-Vis: A Visual Debugging Tool for Sequence-to-Sequence Models .* *VAST 2018, EMNLP-BlackBox 2018 (Best Paper - Honorable Mention)*

Alexander M. Rush. *The Annotated Transformer.* *ACL NLP-OSS 2018*

Jean Senellart, Dakun Zhang, Bo Wang, Guillaume Klein, J.P. Ramatchandirin, Josep Crego, Alexander M. Rush. *OpenNMT System Description for WNMT 2018: 800 words/sec on a single-core CPU.* *WNMT 2018 (First-Place CPU Speed/Memory)*

Yoon Kim, Sam Wiseman, Andrew C. Miller, David Sontag, Alexander M. Rush. *Semi-Amortized Variational Autoencoders.* *ICML 2018*

Brandon Reagen, Udit Gupta, Robert Adolf, Michael M. Mitzenmacher, Alexander M. Rush, Gu-Yeon Wei, David Brooks. *Compressing Deep Neural Networks with Probabilistic Data Structures.* *ICML 2018, SysML 2018*

Alexander M. Rush and Slav Petrov, *Vine Pruning for Efficient Multi-Pass Dependency Parsing*. Proceedings of NAACL 2012. [Best Paper Award]

Terry Koo, Alexander M. Rush, Michael Collins, Tommi Jaakkola, and David Sontag. *Dual Decomposition for Parsing with Non-Projective Head Automata*. Proceedings of EMNLP 2010. [Best Paper Award]

Patents

Techniques for discriminative dependency parsing (Google). Slav Petrov, Alexander M. Rush, 2015.

Efficient parsing with structured prediction cascades (Google). Slav Petrov, Alexander M. Rush, 2013

Determining user affinity towards applications on a social networking website (Facebook., Thomas S. Whitnah, Alexander M. Rush, Ding Zhou, Ruchi Sangvhi, 2010.

Industry

Lead Engineer (Platform Team), *Facebook*, June 2007 – August 2009, Palo Alto, CA.

Open-Source

Variational Attention - fast training for latent var. attention (e.g. hard attention) with accuracy like soft attention

Seq2Seq Vis - Interaction with seq2seq translation dynamics.

OpenNMT - Open-source neural machine translation system.

The Annotated Transformer - Line-by-Line PyTorch implementation of the Transformer