

Junxian He

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Research Interests: I am generally interested in natural language processing and machine learning. My research pursues multi-purpose natural language generation in a controllable (interpretable), knowledgeable, and sustainable way.

EDUCATION

Carnegie Mellon University, Pittsburgh, the United States

Sep. 2017 - present

- **Ph.D. in Language Technologies** (expected in May 2022)
- Advisor: Prof. *Graham Neubig* and Prof. *Taylor Berg-Kirkpatrick*
- Overall GPA: **4.0 / 4.0**

Shanghai Jiao Tong University (SJTU), Shanghai, China

Sep. 2013 - Jul. 2017

- **B.Eng. in Electronic Engineering**
- Rank: **1/176**; Overall GPA: **92.4/100**

RESEARCH EXPERIENCE

- **Research Assistant**, Carnegie Mellon University

Sep. 2017 - present

Advisor: Prof. *Graham Neubig* and Prof. *Taylor Berg-Kirkpatrick*

- **Research Intern**, Salesforce Research

May. 2020 - Aug. 2020

Mentor: Bryan McCann

- **Research Intern**, Facebook AI Research

May. 2019 - Aug. 2019

Mentor: Dr. *Jiatao Gu* and Dr. *Marc'Aurelio Ranzato*

- **Visiting Scholar**, Carnegie Mellon University

Oct. 2016 - Feb. 2017

Advisor: Prof. *Eric Xing*

- **Visiting Scholar**, University of Illinois Urbana-Champaign

Jul. 2016 - Sep. 2016

Advisor: Prof. *Kevin Chang*

PUBLICATIONS

* denotes equal contribution.

- [1] **J. He***, C. Zhou*, X. Ma, T. Berg-Kirkpatrick, G. Neubig. *Towards a Unified View of Parameter-Efficient Transfer Learning*. Preprint 2021
- [2] **J. He**, G. Neubig, T. Berg-Kirkpatrick. *Efficient Nearest Neighbor Language Models*. Conference on Empirical Methods in Natural Language Processing (EMNLP), 2021.
- [3] J. Shen, P. Chen, M. Le, **J. He**, J. Gu, M. Ott, M. Auli, M. Ranzato. *The Source-Target Domain Mismatch Problem in Machine Translation*. Conference of the European Chapter of the Association for Computational Linguistics (EACL), 2021.
- [4] R. Su, S. Rijhwani, H. Zhu, **J. He**, X. Wang, Y. Bisk, G. Neubig. *Dependency Induction Through the Lens of Visual Perception*. The SIGNLL Conference on Computational Natural Language Learning (CoNLL), 2021
- [5] **J. He**, W. Kryciski, B. McCann, N. Rajani, C. Xiong. *CTRLsum: Towards Generic Controllable Text Summarization*. Preprint 2020
- [6] **J. He**, T. Berg-Kirkpatrick, G. Neubig. *Learning Sparse Prototypes for Text Generation*. Conference on Neural Information Processing Systems (NeurIPS), 2020.
- [7] **J. He***, J. Gu*, J. Shen, M. Ranzato. *Revisiting Self-Training for Neural Sequence Generation*. International Conference on Learning Representations (ICLR), 2020.

- [8] **J. He***, X. Wang*, G. Neubig, T. Berg-Kirkpatrick. *A Probabilistic Formulation of Unsupervised Text Style Transfer*. International Conference on Learning Representations (ICLR), 2020. **Spotlight**.
- [9] B. Li, H. Zhou, **J. He**, M. Wang, Y. Yang, L. Li. *On the Sentence Embeddings from BERT for Semantic Textual Similarity*. Conference on Empirical Methods in Natural Language Processing (EMNLP), 2020.
- [10] **J. He**, D. Spokoyny, G. Neubig, T. Berg-Kirkpatrick. *Lagging Inference Networks and Posterior Collapse in Variational Autoencoders*. International Conference on Learning Representations (ICLR), 2019.
- [11] **J. He**, Z. Zhang, T. Berg-Kirkpatrick, G. Neubig. *Cross-Lingual Syntactic Transfer through Unsupervised Adaptation of Invertible Projections*. Annual Conference of the Association for Computational Linguistics (ACL), 2019.
- [12] B. Li*, **J. He***, T. Berg-Kirkpatrick, G. Neubig, Y. Yang, *A Surprisingly Effective Fix for Latent Variable Modeling of Text*. Conference on Empirical Methods in Natural Language Processing (EMNLP), 2019.
- [13] Y. -H. Lin, C. -Y. Chen, J. Lee, Z. Li, Y. Zhang, M. Xia, S. Rijhwani, **J. He**, Z. Zhang, X. Ma, A. Anastasopoulos, P. Littell, G. Neubig. *Choosing Transfer Languages for Cross-Lingual Learning*. Annual Conference of the Association for Computational Linguistics (ACL), 2019.
- [14] Z. Hu, H. Shi, B. Tan, W. Wang, Z. Yang, T. Zhao, **J. He**, L. Qin, D. Wang, X. Ma, Z. Liu, X. Liang, W. Zhu, D. S. Sachan, E. P. Xing. *Texar: A modularized, versatile, and extensible toolkit for text generation*. Annual Conference of the Association for Computational Linguistics (ACL) Demo Track, 2019. **Best Demo Paper Nomination**.
- [15] **J. He**, G. Neubig, T. Berg-Kirkpatrick. *Unsupervised Learning of Syntactic Structure with Invertible Neural Projections*. Conference on Empirical Methods in Natural Language Processing (EMNLP), 2018.
- [16] P. Yin, C. Zhou, **J. He**, G. Neubig. *StructVAE: Tree-structured Latent Variable Models for Semi-supervised Semantic Parsing*. Annual Conference of the Association for Computational Linguistics (ACL), 2018.
- [17] **J. He***, Z. Hu*, T. Berg-Kirkpatrick, Y. Huang, E. P. Xing. *Efficient Correlated Topic Modeling with Topic Embedding*. ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), 2017.
- [18] **J. He**, Ying Huang, Changfeng Liu, Jiaming Shen, Yuting Jia, Xinbing Wang. *Text Network Exploration via Heterogeneous Web of Topics*. International Conference on Data Mining Workshops, 2016

TEACHING EXPERIENCE

Teaching Assistant , Carnegie Mellon University 11747 Neural Networks for NLP.	Spring 2019
Teaching Assistant , Carnegie Mellon University 10708 Probabilistic Graphical Models.	Spring 2020

AWARDS AND HONORS

Baidu PhD Fellowship (awarded 10 Chinese PhD Students across the world)	2020
2021 Global Top 100 Chinese Rising Stars in Artificial Intelligence	2021
Outstanding Undergraduate Thesis (top 1%)	2017
National Scholarship in China (top 2%)	2014, 2015, and 2016
Academic Excellence Scholarship in SJTU (top 1%)	2015