

# Junxian He

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**Research Interests:** I am generally interested in natural language processing and machine learning.

## EDUCATION

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**Carnegie Mellon University**, Pittsburgh, the United States

*Sep. 2017 - present*

- **Ph.D. in Language Technologies**, School of Computer Science, (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

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- **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

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\* denotes equal contribution.

- [1] **J. He\***, C. Zhou\*, X. Ma, T. Berg-Kirkpatrick, G. Neubig. *Towards a Unified View of Parameter-Efficient Transfer Learning*. International Conference on Learning Representations (ICLR), 2022. **Spotlight (5%)**.
- [2] F. Xu, **J. He**, G. Neubig, V. Hellendoorn. *Capturing Structural Locality in Non-parametric Language Models*. International Conference on Learning Representations (ICLR), 2022.
- [3] **J. He**, G. Neubig, T. Berg-Kirkpatrick. *Efficient Nearest Neighbor Language Models*. Conference on Empirical Methods in Natural Language Processing (EMNLP), 2021.
- [4] 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.
- [5] 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.
- [6] **J. He**, W. Kryciski, B. McCann, N. Rajani, C. Xiong. *CTRLsum: Towards Generic Controllable Text Summarization*. Preprint 2020.
- [7] **J. He**, T. Berg-Kirkpatrick, G. Neubig. *Learning Sparse Prototypes for Text Generation*. Conference on Neural Information Processing Systems (NeurIPS), 2020.

- [8] **J. He\***, J. Gu\*, J. Shen, M. Ranzato. *Revisiting Self-Training for Neural Sequence Generation*. International Conference on Learning Representations (ICLR), 2020.
- [9] **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 (5%)**.
- [10] 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.
- [11] **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.
- [12] **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.
- [13] 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.
- [14] 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.
- [15] 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**.
- [16] **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.
- [17] 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.
- [18] **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.
- [19] **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

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<b>Teaching Assistant</b> , Carnegie Mellon University 11747 Neural Networks for NLP.	<i>Spring 2019</i>
<b>Teaching Assistant</b> , Carnegie Mellon University 10708 Probabilistic Graphical Models.	<i>Spring 2020</i>

## AWARDS AND HONORS

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