

Zhenqiao Song

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Education

Fudan University

○ M.S. in Computer Science. Advisor: Prof. Xiaoqing Zheng

Xiamen University

○ B.S. in Computer Science. Advisor: Prof. Jinsong Su

Shanghai, China

Sep. 2017-Jun. 2020

Xiamen, China

Sep. 2013-Jun. 2017

Research Interests

My research interests lie in the general area of natural language processing. I used to study applications on **generative modeling** and **cross-lingual representation learning**. Currently, I focus on **efficient generative modeling**, *e.g.*, multilingual text generation and parallel multilingual translation.

Research Experience

Bytedance AI lab

Researcher and Engineer advised by Dr. Hao Zhou and Dr. Lei Li, MLNLC team.

Shanghai, China

Jun. 2019- Now

- Works on learning efficient neural generative models on large-scale discrete and unstructured data
 - **Parallel Multilingual Translation via Contextualized Self Switching**
 - Propose a **non-autoregressive multilingual neural machine translation model**, which simultaneously learns aligned cross-lingual representations and a better parallel multilingual translation model.
 - Outperform multilingual transformer on all datasets with a 6.1x faster decoding speed in inference.
 - **Multilingual Natural Language Generation via Large-scale Pretraining**
 - **Pretrain a multilingual transformer** with large-scale parallel and monolingual data, which performs well in many downstream tasks and scenarios.
 - **Pretrain a multilingual parallel generation model** with large-scale parallel data, which performs competitively with mBART.
 - **Triangular Bidword Generation for Sponsored Search Auction**
 - Propose a **triangular generation model**, which takes the high-quality data of paired <query, Ad> as a supervision signal to indirectly guide the bidword generation from both Ad and query in the triangle.
 - Bidwords generated in the triangular training framework are more relevant and diverse than those by Transformer.

Fudan University Natural Language Processing Group

Student Researcher advised by Prof. Xiaoqing Zheng

Shanghai, China

Sep. 2017-Jun. 2020

- Worked on text generation and cross-lingual representation learning
 - **Generating responses with a specific emotion in dialog**
 - Propose an emotional dialogue system (EmoDS) that can generate the meaningful responses with a coherent structure for a post, and meanwhile express the desired emotion explicitly or implicitly.
 - Experimental results show that the proposed model can generate more relevant, diverse and emotional responses than baselines.
 - **Jointly Learning Bilingual Word Embeddings and Alignments**
 - Propose a method to learn bilingual word embeddings and alignments jointly, in which both the tasks are reinforced mutually and can benefit from each other.
 - Embeddings produced by this method perform well in many downstream tasks, such as bilingual word induction, cross-lingual document classification and alignment error rate.

Laboratory of Information Processing and Intelligent Control

Xiamen, China

Sep. 2013-Jun. 2017

Student Researcher advised by Prof. Jinsong Su

- Worked on cross-lingual representation learning and statistical machine translation
 - **Exploring Implicit Semantic Constraints for Bilingual Word Embeddings**
 - Propose a method to exploit implicit constraints into learning bilingual word embeddings.
 - Embeddings learned by this method significantly improve the statistical machine translation performance.

Publications

- [1] **Zhenqiao Song**, Xiaoqing Zheng, Lu Liu, Mu Xu, and Xuan-Jing Huang. "Generating responses with a specific emotion in dialog". In: *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL)*. 2019, pp. 3685–3695.
- [2] **Zhenqiao Song**, Jiaze Chen, Hao Zhou, and Lei Li. "Triangular Bidword Generation for Sponsored Search Auction". In: *Proceedings of the 14th ACM International Conference on Web Search and Data Mining (WSDM)*. 2021, pp. 707–715.
- [3] **Zhenqiao Song**, Hao Zhou, Jingjing Xu, Lihua Qian, and Lei Li. "Non-Autoregressive Models are Better Multilingual Translators". In: *Submitted to ICLR 2022*.
- [4] **Zhenqiao Song**, Xiaoqing Zheng, and Xuanjing Huang. "Jointly Learning Bilingual Word Embeddings and Alignments". In: *Journal of Machine translation* (2021).
- [5] Jinsong Su, **Zhenqiao Song**, Yaojie Lu, Mu Xu, Changxing Wu, and Yidong Chen. "Exploring Implicit Semantic Constraints for Bilingual Word Embeddings". In: *Neural Processing Letters* 48.2 (2018), pp. 1073–1088.
- [6] Yiran Chen, **Zhenqiao Song**, Xianze Wu, Danqing Wang, Jingjing Xu, Jiaze Chen, Hao Zhou, and Lei Li. "MTG: A Benchmarking Suite for Multilingual Text Generation". In: *arXiv preprint arXiv:2108.07140* (2021).
- [7] Lu Liu, **Zhenqiao Song**, and Xiaoqing Zheng. "Improving Coreference Resolution by Leveraging Entity-Centric Features with Graph Neural Networks and Second-order Inference". In: *arXiv preprint arXiv:2009.04639* (2020).

Honors and Awards

- National Scholarship. 2020
- Shanghai Outstanding Graduate. 2020
- Fudan University Excellent Scholarship. 2017&2018&2019
- Xiamen University Excellent Scholarship. 2013-2017

Academic Services

- Conference Reviewer: ACL 2020, EMNLP 2020

Teaching

- Teaching Assistant at Fudan University: Data Structures and Algorithms; Linear Algebra

Skill Set

- Machine Learning API: Tensorflow, Pytorch