WANYU DU

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RESEARCH INTERESTS

My research interest is natural language generation. In particular, I am interested in conversation modeling, few-shot learning, interactive and iterative text generation, open-domain dialogue generation & evaluation, and reinforcement learning for dialogue systems.

EDUCATION

University of Virginia (UVa), US   Aug 2020 - Present
PhD student in Computer Science, Advisor: Yangfeng Ji

University of Virginia (UVa), US   Aug 2018 - May 2020
Master of Science in Computer Science, Advisor: Yangfeng Ji

Dongbei University of Finance and Economics (DUFE), China   Aug 2014 - Jul 2018
Bachelor of Management in E-Commerce (Top 1%)

RESEARCH EXPERIENCE

Research Assistant - UVa ILP Lab   Jan 2019 - Present
Advised by Yangfeng Ji

· Proposed a two-phase self-training algorithm for few-shot task-oriented dialogue generation.
· Developed a controlled text generation method for open-domain dialogue generation, which controls the generation of Transformer-based pre-trained language models under the low-data setting.
· Designed a novel variational encoder-decoder model with Gaussian Process Priors for text generation with high quality and diversity.
· Investigated efficient reinforcement learning algorithms for paraphrase generation.

NLP Research Intern - Grammarly Engineering   Jun 2021 - Dec 2021
Advised by Dongyeop Kang, Vipul Raheja

· Proposed a novel approach to model human iterative text revision behaviors.
· Constructed new data resources for iterative text revision tasks.
· Designed human-in-the-loop iterative text revision systems.

NLP Research Intern - Tencent AI Lab   Jun 2020 - Dec 2020
Advised by Liwei Wang, Yangfeng Ji

· Proposed a novel evaluation dimension, communicative intent flow, to evaluate the coherence between interactive conversations in open-domain dialogues.
· Designed a communicative intent annotation schema and conducted crowd-sourcing human annotations on two benchmark open-domain dialogue datasets.

PUBLICATIONS

1. **Wanyu Du**, Hanjie Chen, Yangfeng Ji. Self-training with Two-phase Self-augmentation for Few-shot Dialogue Generation, *In Findings of the Association for Computational Linguistics: EMNLP 2022*, 2022.

2. Jianqiao Zhao*, Yanyang Li*, **Wanyu Du***, Yangfeng Ji, Dong Yu, Michael R. Lyu, Liwei Wang. FlowEval: A Consensus-Based Dialogue Evaluation Framework Using Segment Act Flows, *In Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP 2022)*, 2022.

3. Zae Myung Kim, **Wanyu Du**, Vipul Raheja, Dhruv Kumar, Dongyeop Kang. Improving Iterative Text Revision by Learning Where to Edit from Other Revision Tasks, *In Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP 2022)*, 2022.

4. Hanjie Chen, **Wanyu Du**, Yangfeng Ji. Explaining Predictive Uncertainty by Looking Back at Model Explanations, *preprint*, 2022.

5. **Wanyu Du**, Vipul Raheja, Dhruv Kumar, Zae Myung Kim, Melissa Lopez, Dongyeop Kang. Understanding Iterative Revision from Human-Written Text, *In Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (ACL 2022)*, 2022.

6. **Wanyu Du***, Zae Myung Kim*, Vipul Raheja, Dhruv Kumar, Dongyeop Kang. Read, Revise, Repeat: A System Demonstration for Human-in-the-loop Iterative Text Revision, *In Proceedings of the First Workshop on Intelligent and Interactive Writing Assistants (In2Writing 2022)* - **Best Paper Award**, 2022.

7. **Wanyu Du**, Jianqiao Zhao, Liwei Wang and Yangfeng Ji. Diverse Text Generation via Variational Encoder-Decoder Models with Gaussian Process Priors, *ACL 2022 6th Workshop on Structured Prediction for NLP (SPNLP 2022)*, 2022.

8. **Wanyu Du** and Yangfeng Ji. SideControl: Controlled Open-domain Dialogue Generation via Additive Side Networks, *In Findings of the Association for Computational Linguistics: EMNLP 2021*, 2021.

9. Sebastian Gehrmann et al., The GEM Benchmark: Natural Language Generation, its Evaluation and Metrics, *In Proceedings of the 1st Workshop on Natural Language Generation, Evaluation, and Metrics (GEM 2021)*, 2021.

10. Stephanie Schoch, **Wanyu Du**, Yangfeng Ji. Contextualizing Variation in Text Style Transfer Datasets, *In Proceedings of the 14th International Conference on Natural Language Generation (INLG 2021)*, 2021.

11. **Wanyu Du** and Yangfeng Ji. An Empirical Comparison on Imitation Learning and Reinforcement Learning for Paraphrase Generation, *In Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing (EMNLP 2019)*, 2019.

12. Xinyu Wang, Tsan-Ming Choi, Xiaohang Yue, Mengji Zhang, and **Wanyu Du**. An Effective Optimization Algorithm for Application Mapping in Network-on-Chip Designs, *IEEE Transactions on Industrial Electronics*, 2019.

HONORS AND AWARDS

Best Paper Award at the First In2Writing Workshop	2022
UVa Computer Science Scholar Fellowship	2020
UVa Academic Excellence Fellowship	2018
DUFE Outstanding Graduates	2018
DUFE First Place Scholarship	2014-2018
National Data Driven Innovation Research Competition: National 2nd Prize	2018
Mitsubishi UFJ Trust Scholarship	2017
Citi Financial Innovation Application Competition: National 3rd Prize	2016

SERVICE

Reviewer	ACL, EMNLP, NAACL, ARR	2020-2022
Organizing team member	GEM Workshop at ACL 2021	2021
Invited talk	"Efficient Learning Algorithms for Paraphrase Generation" at UVa AIML Seminar	2019

TEACHING

CS 4501 Reinforcement Learning, Teaching Assistant	2022
CS 6316 Machine Learning, Teaching Assistant	2022
CS 6501 Interpretable Machine Learning, Teaching Assistant	2022
CS 6501 Natural Language Processing, Teaching Assistant	2021

TECHNICAL SKILLS

Programming Language	Python, Java, C, SQL
Software & Tools	Pytorch, Tensorflow, MATLAB, Neo4j