

# WANYU DU

✉ wd5jq@virginia.edu; 🌐 wyu-du.github.io; 🐦 @WanyuDu

## RESEARCH INTERESTS

---

Natural Language Processing, Human-AI Collaborative Writing, Reinforcement Learning.

## EDUCATION

---

**University of Virginia (UVa)** Aug. 2020 - May 2024 (Expected)  
Ph.D. candidate in Computer Science  
Advisor: Yangfeng Ji  
Thesis proposal title: “Towards Controllable and Data-Efficient Natural Language Generation”  
**University of Virginia (UVa)** Aug. 2018 - May 2020  
Master of Science in Computer Science  
Advisor: Yangfeng Ji  
**Dongbei University of Finance and Economics (DUFE)** Aug. 2014 - Jul. 2018  
Bachelor of Management in E-Commerce

## EXPERIENCE

---

**Research Assistant - UVa ILP Lab** Charlottesville, VA  
*Advised by Yangfeng Ji* Jan. 2019 - Present

- Developed a hybrid reward function that approximates experts’ preference to align large language models in generating faithful and informative responses.
- Proposed an uncertainty-based self-training algorithm for few-shot task-oriented dialogue generation.
- Developed an additive side network for controllable text generation.
- Designed a variational encoder-decoder model with Gaussian Process priors for text generation with high quality and diversity.
- Investigated efficient reinforcement learning algorithms for paraphrase generation.

**Applied Scientist Intern - Amazon Web Services (AWS) AI** New York, NY  
*Advised by Song Feng, James Gung, Yi Zhang, Saab Mansour* May 2023 - Aug. 2023

- Developed a prompt-based controllable text generation method to simulate diverse dialogue flows.
- Controlled task-oriented dialogue generation with simulated dialogue flows.
- Performed parameter-efficient fine-tuning with large language models on augmented simulation datasets.

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

- Proposed a multi-domain edit intention taxonomy to comprehensively model user edit behaviors.
- Constructed a 31K multi-domain and multi-granularity dataset for iterative text revision tasks.
- Designed a human-in-the-loop iterative text revision system and analyzed the human-AI collaborative text revision behaviors.

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

- Proposed an open-domain dialogue evaluation metric with communicative intent flow to evaluate the coherence between interactive conversations.
- Designed a communicative intent taxonomy and conducted crowd-sourcing human annotations on two benchmark open-domain dialogue datasets.

## PUBLICATIONS

---

- [1] Blending Reward Functions via Few Expert Demonstrations for Faithful and Accurate Knowledge-Grounded Dialogue Generation  
**Wanyu Du**, Yangfeng Ji.  
*arXiv preprint*, 2023.
- [2] Explaining Predictive Uncertainty by Looking Back at Model Explanations  
Hanjie Chen, **Wanyu Du**, Yangfeng Ji.  
*AAAI Workshop on Uncertainty Reasoning and Quantification in Decision Making*, 2023.
- [3] Self-training with Two-phase Self-augmentation for Few-shot Dialogue Generation  
**Wanyu Du**, Hanjie Chen, Yangfeng Ji.  
*In Findings of the Association for Computational Linguistics: EMNLP 2022*, 2022.
- [4] FlowEval: A Consensus-Based Dialogue Evaluation Framework Using Segment Act Flows  
Jianqiao Zhao\*, Yanyang Li\*, **Wanyu Du\***, Yangfeng Ji, Dong Yu, Michael R. Lyu, Liwei Wang.  
*In Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP 2022)*, 2022.
- [5] Improving Iterative Text Revision by Learning Where to Edit from Other Revision Tasks  
Zae Myung Kim, **Wanyu Du**, Vipul Raheja, Dhruv Kumar, Dongyeop Kang.  
*In Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (EMNLP 2022)*, 2022.
- [6] Understanding Iterative Revision from Human-Written Text  
**Wanyu Du**, Vipul Raheja, Dhruv Kumar, Zae Myung Kim, Melissa Lopez, Dongyeop Kang.  
*In Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (ACL 2022)*, 2022.
- [7] Read, Revise, Repeat: A System Demonstration for Human-in-the-loop Iterative Text Revision - **Best Paper Award**  
**Wanyu Du\***, Zae Myung Kim\*, Vipul Raheja, Dhruv Kumar, Dongyeop Kang.  
*In Proceedings of the First Workshop on Intelligent and Interactive Writing Assistants (In2Writing 2022)*, 2022.
- [8] Diverse Text Generation via Variational Encoder-Decoder Models with Gaussian Process Priors  
**Wanyu Du**, Jianqiao Zhao, Liwei Wang and Yangfeng Ji.  
*ACL 2022 6th Workshop on Structured Prediction for NLP*, 2022.
- [9] SideControl: Controlled Open-domain Dialogue Generation via Additive Side Networks  
**Wanyu Du** and Yangfeng Ji.  
*In Findings of the Association for Computational Linguistics: EMNLP 2021*, 2021.
- [10] The GEM Benchmark: Natural Language Generation, its Evaluation and Metrics  
Sebastian Gehrmann et al.  
*In Proceedings of the 1st Workshop on Natural Language Generation, Evaluation, and Metrics*, 2021.
- [11] Contextualizing Variation in Text Style Transfer Datasets  
Stephanie Schoch, **Wanyu Du**, Yangfeng Ji.  
*In Proceedings of the 14th International Conference on Natural Language Generation (INLG 2021)*, 2021.
- [12] An Empirical Comparison on Imitation Learning and Reinforcement Learning for Paraphrase Generation  
**Wanyu Du** and Yangfeng Ji.  
*In Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing (EMNLP 2019)*, 2019.

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

## HONORS AND AWARDS

---

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

## SERVICE

---

Program Committee	EMNLP, DialDoc Workshop, In2Writing Workshop	2022-2023
Reviewer	ACL, EMNLP, NAACL, CoNLL, ACL Rolling Review	2020-2023
Organizing Team Member	GEM Workshop at ACL 2021	2021

## 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

---

<b>Programming Language</b>	Python, Java, C, SQL
<b>Software &amp; Tools</b>	Pytorch, Tensorflow, MATLAB, Neo4j