

NING SHI

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RESEARCH INTERESTS

My research interests lie in the broad area of computational linguistics, natural language processing, reinforcement learning, and their applications. In particular, from the perspective of human cognition, I'm interested in the extent to which neural networks can do the same (or even better?) as humans to understand the world systematically. More information can be found on my homepage¹.

EDUCATION

| | |
|---|---|
| University of Alberta Doctor of Philosophy in Computing Science | <i>Sep. 2022 - May 2026 (Expected)</i> <i>GPA: 4.0/4.0</i> |
| Georgia Institute of Technology Master of Science in Computer Science | <i>Aug. 2019 - May 2022</i> <i>GPA: 4.0/4.0</i> |
| Syracuse University Master of Science in Applied Data Science | <i>Oct. 2018 - May 2021</i> <i>GPA: 4.0/4.0</i> |
| New York University Master of Science in Management and Systems | <i>Sep. 2016 - May 2018</i> <i>GPA: 3.9/4.0</i> |
| Donghua University Bachelor of Management in Electronic Commerce | <i>Sep. 2010 - Jun. 2014</i> |

PUBLICATIONS

Peer-reviewed Conferences and Workshops

- [C.1] Xiang Zhang, Senyu Li, Bradley Hauer, **Ning Shi**, and Grzegorz Kondrak. 2023. Don't Trust ChatGPT when your Question is not in English: A Study of Multilingual Abilities and Types of LLMs. In Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing, pages 7915–7927, Singapore. Association for Computational Linguistics. (Oral)
- [C.2] Yangyi Chen, Hongcheng Gao, Ganqu Cui, Lifan Yuan, Dehan Kong, Hanlu Wu, **Ning Shi**, Bo Yuan, Longtao Huang, Hui Xue, Zhiyuan Liu, Maosong Sun, and Heng Ji. 2023. From Adversarial Arms Race to Model-centric Evaluation: Motivating a Unified Automatic Robustness Evaluation Framework. In Findings of the Association for Computational Linguistics: ACL 2023, pages 9607–9632, Toronto, Canada. Association for Computational Linguistics.
- [C.3] Michael Ogezi, Bradley Hauer, Talgat Omarov, **Ning Shi**, and Grzegorz Kondrak. 2023. UAlberta at SemEval-2023 Task 1: Context Augmentation and Translation for Multilingual Visual Word Sense Disambiguation. In Proceedings of the 17th International Workshop on Semantic Evaluation (SemEval-2023), pages 2043–2051, Toronto, Canada. Association for Computational Linguistics.
- [C.4] Xiang Zhang, **Ning Shi**, Bradley Hauer, and Grzegorz Kondrak. 2023. Bridging the Gap Between BabelNet and HowNet: Unsupervised Sense Alignment and Sememe Prediction. In Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics, pages 2789–2798, Dubrovnik, Croatia. Association for Computational Linguistics. (Oral)
- [C.5] **Ning Shi**, Boxin Wang, Wei Wang, Xiangyu Liu, and Zhouhan Lin. 2022. Revisit Systematic Generalization via Meaningful Learning. In Proceedings of the Fifth BlackboxNLP Workshop on Analyzing and Interpreting Neural Networks for NLP, pages 62–79, Abu Dhabi, United Arab Emirates (Hybrid). Association for Computational Linguistics.

¹<https://sites.google.com/ualberta.ca/shining>

- [C.6] **Ning Shi**, Bin Tang, Bo Yuan, Longtao Huang, Yewen Pu, Jie Fu, and Zhouhan Lin. 2022. Text Editing as Imitation Game. In Findings of the Association for Computational Linguistics: EMNLP 2022, pages 1583–1594, Abu Dhabi, United Arab Emirates. Association for Computational Linguistics.
- [C.7] Zihan Zhang, Jinfeng Li, **Ning Shi**, Bo Yuan, Xiangyu Liu, Rong Zhang, Hui Xue, Donghong Sun, and Chao Zhang. 2022. RoChBert: Towards Robust BERT Fine-tuning for Chinese. In Findings of the Association for Computational Linguistics: EMNLP 2022, pages 3502–3516, Abu Dhabi, United Arab Emirates. Association for Computational Linguistics.
- [C.8] **Ning Shi**, Wei Wang, Boxin Wang, Jinfeng Li, Xiangyu Liu, and Zhouhan Lin. 2021. Incorporating External POS Tagger for Punctuation Restoration. In Proceedings of Interspeech 2021, pages 1987-1991, doi: 10.21437/Interspeech.2021-1708.
- [C.9] Wei Wang, Boxin Wang, **Ning Shi**, Jinfeng Li, Bingyu Zhu, Xiangyu Liu, and Rong Zhang. 2021. Counterfactual Adversarial Learning with Representation Interpolation. In Findings of the Association for Computational Linguistics: EMNLP 2021, pages 4809–4820, Punta Cana, Dominican Republic. Association for Computational Linguistics.
- [C.10] **Ning Shi**, Ziheng Zeng, Haotian Zhang, and Yichen Gong. 2020. Recurrent Inference in Text Editing. In Findings of the Association for Computational Linguistics: EMNLP 2020, pages 1758–1769, Online. Association for Computational Linguistics.

Preprint

- [P.1] Xiang Zhang, Senyu Li, Zijun Wu, **Ning Shi**. 2023. Lost in Translation: When GPT-4V Can’t See Eye to Eye with Text. A Vision-Language-Consistency Analysis of VLLMs and Beyond. arXiv:2310.12520.
- [P.2] Zekun Wang, Ge Zhang, Kexin Yang, **Ning Shi**, Wangchunshu Zhou, Shaochun Hao, Guangzheng Xiong, Yizhi Li, Mong Yuan Sim, Xiuying Chen, Qingqing Zhu, Zhenzhu Yang, Adam Nik, Qi Liu, Chenghua Lin, Shi Wang, Ruiibo Liu, Wenhu Chen, Ke Xu, Dayiheng Liu, Yike Guo, Jie Fu. 2023. Interactive Natural Language Processing. arXiv preprint arXiv:2305.13246.

In Submission

- [S.1] Logan Woudstra, Moyo Dawodu, Frances Igwe, **Ning Shi**, Bradley Hauer, Grzegorz Kondrak. 2024. Leveraging Multilinguality to Identify Emotional and Polar Synsets in WordNet.
- [S.2] **Ning Shi**, Bradley Hauer, Grzegorz Kondrak. 2024. Lexical Substitution via Causal Language Modeling.
- [S.3] **Ning Shi**, Grzegorz Kondrak. 2024. Beyond Semantic Equivalence: Paraphrase Identification = Textual Entailment Recognition.
- [S.4] **Ning Shi**, Zijun Wu, Lili Mou, Grzegorz Kondrak. 2024. Action Controlled Paraphrasing.
- [S.5] Michael Ogezi, **Ning Shi**. 2024. Negative Prompt Optimization for Text-To-Image Generation

EXPERIENCE

| | |
|---|---|
| Alberta Machine Intelligence Institute (Amii) <i>Research Assistant, Supervised by Prof. Grzegorz Kondrak</i> | Edmonton, Canada <i>Sep. 2022 - Present</i> |
| University of Alberta <i>Teaching Assistant</i> <i>CMPUT 174, CMPUT 261, CMPUT 331, CMPUT 399, CMPUT 650</i> | Edmonton, Canada <i>Sep. 2022 - Present</i> |
| Beijing Academy of Artificial Intelligence (BAAI) <i>Research Intern, Advised by Dr. Jie Fu</i> | Beijing, China <i>Aug. 2022 - Aug. 2023</i> |
| Alibaba Artificial Intelligence Governance Laboratory (AAIG) <i>Senior Algorithm Engineer (Algorithm Engineer II)</i> | Hangzhou, China <i>Nov. 2020 - Jul. 2022</i> |
| Shining Lab <i>Founder, Advised by Prof. Zhouhan Lin</i> | Shanghai, China <i>Sep. 2019 - Present</i> |

Learnable, Inc.
Machine Learning Engineer

Boston, United States
Sep. 2018 - Sep. 2020

Pythagoras Investment Management LLC
Algorithm Engineer Intern

New York City, United States
Dec. 2017 - May 2018

China Net Cloud (Shanghai) Co., Ltd
Project Manager

Shanghai, China
Mar. 2014 - Jun. 2016

TALKS

Inspiring Natural Language Processing with Human Cognition
Alberta Machine Intelligence Institute (Amii) AI Seminar

Dec. 23rd, 2022

Text Editing as Imitation Game
the Second GEM in EMNLP 2022

Dec. 7th 2022

Recurrent Inference in Text Editing
the Fourth SPNLP in EMNLP 2020

Nov. 20th 2020

SERVICES

Mentor: UR2PhD (CRA)²

Volunteer: ACL 2023, ARR Support Team

Reviewer: ACL 2023, ARR 2021-2023, EMNLP 2022-2023, ICLR 2024, ICML 2022-2023, NeurIPS 2022-2023, SemEval 2023, ENLSP 2023, Electronic Commerce Research, Information Processing and Management

Secondary Reviewer: LREC-COLING 2024, EMNLP 2023, EMNLP-IJCNLP 2019, Canadian AI 2023, CAWL 2023, Transactions of the Association for Computational Linguistics

AWARDS

Alberta Graduate Excellence Scholarship
Alberta, Canada

Nov. 29th, 2023

GSA Academic Travel Grant
Graduate Students' Association, University of Alberta

Jul. 27th, 2023

Full Doctoral Scholarship
Dept. of Computing Science, University of Alberta

Sep. 2022 - May 2026

Graduate Research Assistantship Fellowship
Dept. of Computing Science, University of Alberta

Sep. 2022 - May 2026

²<https://cra.org/ur2phd/>