Qing Lyu

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RESEARCH INTERESTS

Natural Language Processing, Computational Linguistics, Interpretability, Probing, Trustworthy AI

EDUCATION

University of Pennsylvania, Philadelphia, USA — Aug 2019 – Present
Ph.D. Computer and Information Science — GPA: 4.00/4.00
Advisor: Chris Callison-Burch and Marianna Apidianaki

Tsinghua University, Beijing, China — Sept 2015 – Jul 2019
B.A. English Language and Literature (Linguistics track) — GPA: 3.88/4.00
Advisor: Xiaojing Bai

PUBLICATIONS AND MANUSCRIPTS

Total citations: 475; h-index: 10

[14] **Q. Lyu**, S. Havaldar*, A. Stein*, L. Zhang, D. Rao, E. Wong, M. Apidianaki, C. Callison-Burch. *Faithful Chain-of-Thought Reasoning.*
In submission.

[13] **Q. Lyu**, M. Apidianaki, C. Callison-Burch. *Towards Faithful Model Explanation in NLP: A Survey.*
In submission.

[12] **Q. Lyu**, M. Apidianaki, C. Callison-Burch. *Representation of Lexical Stylistic Features in Language Models' Embedding Space.*
In ***SEM 2023**.

[11] J. M. Ludan†, Y. Meng*†, T. Nguyen*†, S. Shah*†, **Q. Lyu**, M. Apidianaki, C. Callison-Burch. *Explanation-based Finetuning Makes Models More Robust to Spurious Cues.*
In **ACL 2023**.

[10] **Q. Lyu**, H. Zheng, D. Li, L. Zhang, M. Apidianaki, C. Callison-Burch. *Is "My Favorite New Movie" My Favorite Movie? Probing the Understanding of Recursive Noun Phrases.*
In **NAACL 2022**.

[9] A. Srivastava, …, L. Zhang, **Q. Lyu**, C. Callison-Burch, … *Beyond the Imitation Game: Quantifying and extrapolating the capabilities of language models.*
In **TMLR 2022**.

[8] X. Du, Z. Zhang, S. Li, P. Yu, H. Wang, T. Lai, X. Lin, Z. Wang, I. Liu, B. Zhou, H. Wen, M. Li, D. Hannan, J. Lei, H. Kim, R. Dror, H. Wang, M. Regan, Q. Zeng, **Q. Lyu**, C. Yu, C. Edwards, X. Jin, Y. Jiao, G. Kazeminejad, Z. Wang, C. Callison-Burch, M. Bansal, C. Vondrick, J. Han, D. Roth, S. Chang, M. Palmer, H. Ji. *RESIN-11: Schema-guided Event Prediction for 11 Newsworthy Scenarios.*
In **NAACL 2022** (demo track).

[7] S. Zhou*, L. Zhang*, Y. Yang, **Q. Lyu**, G. Neubig, C. Callison-Burch. *Show Me More Details: Discovering Event Hierarchies from WikiHow*.
In **ACL 2022**.

[6] Y. Yang, A. Panagopoulou, **Q. Lyu**, L. Zhang, M. Yatskar, C. Callison-Burch. *Visual Goal-Step Inference using wikiHow*.
In **EMNLP 2021**.

[5] **Q. Lyu**, H. Zhang, E. Sulem, D. Roth. *Zero-shot Event Extraction via Transfer Learning: Challenges and Insights.*
In **ACL 2021.**

[4] **Q. Lyu***, L. Zhang*, C. Callison-Burch. *Goal-Oriented Script Construction*.
In **INLG 2021**.

[3] H. Wen, Y. Lin, T. Lai, X. Pan, S. Li, X. Lin, B. Zhou, M. Li, H. Wang, H. Zhang, X. Yu, A. Dong, Z. Wang, Y. Fung, P. Mishra, **Q. Lyu**, D. Surís, B. Chen, Susan W. Brown, M. Palmer, C. Callison-Burch, C. Vondrick, J. Han, D. Roth, S-F. Chang, H. Ji. *RESIN: A Dockerized Schema-Guided Cross-document Cross-lingual Cross-media Information Extraction and Event Tracking System*.
In **NAACL 2021** (demo track).

[2] L. Zhang, **Q. Lyu**, C. Callison-Burch. *Intent Detection with WikiHow*.
In **AACL-IJCNLP 2020**.

[1] L. Zhang*, **Q. Lyu***, C. Callison-Burch. *Reasoning about Goals, Steps, and Temporal Ordering with WikiHow*.
In **EMNLP 2020**; Spotlight presentation at the Workshop on Enormous Language Models at ICLR 2021.

(*: equal contribution. †: undergraduate/master's mentee.)

SERVICES AND ACTIVITIES

- **Program Committee member** of the 9th Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL) 2022
- **Panelist** at WiCS x FemmeHacks CIS PhD Panel 2022
- **Reviewer** for the Beyond the Imitation Game Benchmark (BIG-BENCH), initiated by Google Research 2021
- **Reviewer** for ACL, EMNLP, NAACL, ACL Rolling Review (ARR), … 2021 –
- **Co-organizer** of CLUNCH, Penn's NLP seminar series 2020

TEACHING EXPERIENCE

- **Teaching Assistant — Computational Linguistics** Fall 2021
  CIS 530: graduate level University of Pennsylvania
- **Teaching Assistant — Applied Machine Learning** Fall 2019
  CIS 419/519: undergraduate/graduate level University of Pennsylvania
- **Teaching Assistant — Computational Linguistics** Fall 2018
  undergraduate level Tsinghua University

INDUSTRY EXPERIENCE

Research Intern May 2023 – Aug 2023
Allen Institute for Artificial Intelligence (AI2), AllenNLP Seattle, USA
• Project: Teachable Chain-of-Thought Reasoning (ongoing).

Research Intern May 2022 – Aug 2022
Tencent, AI Lab Seattle, USA
• Designed an algorithm to generate post-hoc Natural Language explanations for generative Language Models, using proxies of faithfulness and plausibility as training objectives.
• Our method outperforms existing baselines in terms of both faithfulness and plausibility through empirical evaluation.

Algorithm Intern Sept 2018 – Oct 2018
Tomorrow Advancing Life (TAL) Education Group, AI Lab Beijing, China
• Developed a Linear Dynamical Systems (LDS)-based model to predict the student dropout rate in online courses.
• Our model improved the dropout prediction F1 score by 20% over the existing system, and was officially integrated into the online learning platform.

MENTORSHIP

During my PhD study, I mentored the following undergrad/master's students:

Josh Magnus Ludan Sept 2022 –

- Published 1 first-author paper at ACL 2023
- Won the 2023 Penn MSE in Data Science Best Practicum Award

Yixuan Meng Sept 2022 –

- Published 1 co-second-author paper at ACL 2023
- Won the 2023 Penn Engineering Master's Outstanding Research Award
- Currently participating in the IARPA HIATUS program

Tai Nguyen Sept 2022 –

- Published 1 co-second-author paper at ACL 2023
- Currently participating in the IARPA HIATUS program, as the student leader of the Penn team

Saurabh Shah Sept 2022 – May 2023

- Published 1 co-second-author paper at ACL 2023

HONORS

Excellent Graduation Thesis Award, Tsinghua University 2019

National Scholarship, Chinese Ministries of Education and Finance 2018

3rd Place at "Sentiment analysis of Chinese Metaphor", Shared Task at the 17th China National Conference on Computational Linguistics (CCL 2018) 2018

Jiang Nanxiang Scholarship, Tsinghua University 2017

Merit-based Scholarship of all school years, Tsinghua University 2015 – 2019

First Prize (Individual Contest), National Linguistics Olympiad (NOL) 2014

SKILLS

Programming Skills

Python, C/C++, SQL, MATLAB, HTML, Javascript

Language Skills

Chinese (native), English (proficient), French (conversational)

TEST SCORES

GRE (2018): Verbal 168, Quantitative 170, Analytical Writing 4.0

TOEFL (2018): Reading 30, Listening 30, Speaking 29, Writing 30