Kaishuai Xu

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Education

The Hong Kong Polytechnic University (PolyU) *Sept. 2021 –*
PhD Student in Computer Science, guided by Prof. Wenjie Li Hong Kong, China

- Focusing on medical dialogue systems, LLM empowered applications, conversational AI;

Huazhong University of Science and Technology (HUST) *Sept. 2017 – June 2020*
Master of Management Science and Engineering, guided by Prof. Yukun Bao Wuhan, China

- Focusing on time series forecasting; Cumulative GPA: 88.49/100; Courses: Matrix theory, Deep Learning;

Huazhong University of Science and Technology (HUST) *Sept. 2013 – June 2017*
Bachelor of Management in Management Science at Qiming College Wuhan, China

- Cumulative GPA: 3.91/4 (3/19*); Courses: C++ programming, Linear algebra, Mathematical Analysis I&II;
- (Students at Qiming College are selected from 120+ people who have passed the examinations and interviews and are trained with academic orientation)

Publications

- **Learning to Align Multi-Faceted Evaluation: A Unified and Robust Framework. Kaishuai Xu**, Tiezheng Yu, Wenjun Hou, Yi Cheng, Liangyou Li, Xin Jiang, Lifeng Shang, Qun Liu, Wenjie Li. *Submit to ACL 2025*.
- **Integrative Decoding: Improve Factuality via Implicit Self-consistency.** Yi Cheng, Xiao Liang, Yeyun Gong, Wen Xiao, Song Wang, Yuji Zhang, Wenjun Hou, **Kaishuai Xu**, Wenge Liu, Wenjie Li, Jian Jiao, Qi Chen, Peng Cheng, Wayne Xiong. *ICLR 2025*.
- **Memory-Augmented Multimodal LLMs for Surgical VQA via Self-Contained Inquiry.** Wenjun Hou, **Kaishuai Xu**, Yi Cheng, Yan Hu, Wenjie Li, Jiang Liu.
- **Subtle Errors Matter: Preference Learning via Error-injected Self-editing. Kaishuai Xu**, Tiezheng Yu, Wenjun Hou, Yi Cheng, Chak Tou Leong, Liangyou Li, Xin Jiang, Lifeng Shang, Qun Liu, Wenjie Li. *Submit to ACL 2025*.
- **Large Language Models for Disease Diagnosis: A Scoping Review.** Shuang Zhou, Zidu Xu, Mian Zhang, Chunpu Xu, Yawen Guo, Zaifu Zhan, Sirui Ding, Jiashuo Wang, **Kaishuai Xu**, Yi Fang, Liqiao Xia, Jeremy Yeung, Daochen Zha, Mingquan Lin, Rui Zhang.
- **AutoPal: Autonomous Adaptation to Users for Personal AI Companisonship.** Yi Cheng, Wenge Liu, **Kaishuai Xu**, Wenjun Hou, Yi Ouyang, Chak Tou Leong, Xian Wu, Yefeng Zheng.
- **No Two Devils Alike: Unveiling Distinct Mechanisms of Fine-tuning Attacks.** Chak Tou Leong, Yi Cheng, **Kaishuai Xu**, Jian Wang, Hanlin Wang, Wenjie Li.
- **ICON: Improving Inter-Report Consistency of Radiology Report Generation via Lesion-aware Mix-up Augmentation.** Wenjun Hou, Yi Cheng, **Kaishuai Xu**, Yan Hu, Wenjie Li, Jiang Liu. *In Findings of the Conference on Empirical Methods in Natural Language Processing: EMNLP 2024*.
- **Reasoning Like a Doctor: Improving Medical Dialogue Systems via Diagnostic Reasoning Process Alignment. Kaishuai Xu**, Yi Cheng, Wenjun Hou, Qiaoyu Tan, Wenjie Li. *In Findings of the Association for Computational Linguistics: ACL 2024*.
- **When LLMs Meet Acoustic Landmarks: An Efficient Approach to Integrate Speech into Large Language Models for Depression Detection.** Xiangyu Zhang, Hexin Liu, **Kaishuai Xu**, Qiquan Zhang, Daijiao Liu, Beena Ahmed, Julien Epps. *In Proceedings of the Conference on Empirical Methods in Natural Language Processing: EMNLP 2024.*
- **Medical Dialogue Generation via Intuitive-then-Analytical Differential Diagnosis. Kaishuai Xu**, Wenjun Hou, Yi Cheng, Jian Wang, Wenjie Li.
- **RECAP: Towards Precise Radiology Report Generation via Dynamic Disease Progression Reasoning.** Wenjun Hou, Yi Cheng, **Kaishuai Xu**, Wenjie Li, Jiang Liu. *In Findings of the Conference on Empirical Methods in Natural Language Processing: EMNLP 2023*.

- **Medical Dialogue Generation via Dual Flow Modeling. Kaishuai Xu**, Wenjun Hou, Yi Cheng, Jian Wang, Wenjie Li. *In Findings of the Association for Computational Linguistics: ACL 2023*.
- **ORGAN: Observation-Guided Radiology Report Generation via Tree Reasoning.** Wenjun Hou, **Kaishuai Xu**, Yi Cheng, Wenjie Li, Jiang Liu. *In Proceedings of the Annual Meeting of the Association for Computational Linguistics: ACL 2023*.
- **Research on Probabilistic Load Forecasting for Regional Residential Users Based on Single Value Cluster Analysis.** Chengwen Xia, **Kaishuai Xu**, Yukun, Bao, Rui Pan, Yuanbin Deng. *Electric Power Information and Communication Technology*. 2021.
- **POLYU at TREC 2020 Conversational Assistant Track: Query Reformulation with Heuristic Topic Phrases Discovery. Kaishuai Xu**, Wenjie Li, Yongqi Li. *TREC 2020*.

Work Experience

Research Intern *June 2024 –*
Noah's Ark Lab, Huawei Hong Kong Research Center Hong Kong, China

- Mathematical reasoning;
- Robust evaluation;

Data Analyst Intern *July 2019 – Sept. 2019*
AliExpress, Alibaba Group Hangzhou, China

- Participated in the construction of a public opinion system, responsible for tag extraction and classification in social texts;
- Participated in GMV forecasting and analysis, responsible for predicting GMV in the next 7 days;

Research Experience

TREC CAsT 2020 (guided by Prof. Wenjie Li, PolyU) *2020*

- Developed a rule-based conversational search framework with fine-tuning through BERT;
- Developed a web demo of the search framework;

The 2019 Online Projected-based Machine Learning Research Program Developing Fake News Detection Algorithms (guided by Mike Tamir, UC Berkeley) *2019*

- Developed an end-to-end pipeline that accomplishes fake news detection;

Regional Load Forecasting for the State Grid of China (guided by Prof. Yukun Bao, HUST) *2018*

- Monthly maximum and minimum load forecasting for Hubei, Hunan, Henan, and Jiangxi provinces;
- Focusing on the time windows, which consist of Jun. - Sept. (summer) and Nov. - Mar. (winter);

Leadership & Awards

- **Innovation Award (5/123, as a team leader)**. Global Optimization Challenge 2018, JD.com, Inc. *2018*
- **Academic Scholarship (Master, First Prize)**. HUST. *2018, 2017*
- **Academic Excellence Scholarship (Bachelor)**. HUST. *2016, 2015*

Skills

English Proficiency - TOEFL: 103 (R:26, L:25, S:26, W:26), GRE: 321+3

Languages - Python, C++, MATLAB

Frameworks - Pytorch, Transformers (Hugging Face), Tensorflow