

YIFAN GAO

Ph.D. Candidate, Natural Language Processing, Machine Learning

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EDUCATION

The Chinese University of Hong Kong

Hong Kong SAR

Ph.D. Candidate in Computer Science and Engineering

2017 – 2021 (expected)

Advisors: [Irwin King](#) (IEEE Fellow, ACM Distinguished Member), [Michael R. Lyu](#) (IEEE, ACM, AAAS Fellow)

Thesis Committee: [Yufei Tao](#) (Chair), [Jeffrey Xu Yu](#), [Hsin-Hsi Chen](#)

Ph.D. Thesis: Teaching Machine to Ask and Answer Questions: Knowledge Assessment and Information Acquisition in Reading Comprehension

Beihang University

Beijing, China

B.Eng. in Electronic and Information Engineering

2013 – 2017

Excellent Undergraduate Award (15 out of 300), National Scholarship (6 out of 300)

Technische Universität Darmstadt

Darmstadt, Germany

Exchange Student in Computer Science

2016 Fall

EXPERIENCE

Applied Scientist Intern, Amazon Search (A9.com)

March 2021 – June 2021

Collaborators: Qingyu Yin, Zheng Li, Bing Yin

Palo Alto, CA, USA (virtually)

- Worked on multilingual keyphrase generation using Amazon dataset
- Submitted one paper to a top venue and filed one patent

Applied Scientist Intern, Amazon Web Services (AWS) AI

July 2020 – September 2020

Collaborators: Henghui Zhu, Cicero dos Santos, Zhiguo Wang, Ramesh Nallapati

New York City, NY, USA (virtually)

- Investigated the query ambiguity problem in open-domain question answering
- Proposed a novel generative evidence fusion approach to find multiple interpretations for ambiguous questions
- Published [one paper in ACL 2021](#), ranked 1st on the [AmbigQA Leaderboard](#), and filed one patent

Research Intern, Salesforce Research

October 2019 – January 2020

Collaborators: Chien-Sheng (Jason) Wu, Shafiq Joty, Steven C.H. Hoi

Singapore

- Worked on implicative reasoning in conversational machine reading
- Proposed a new framework to explicitly track entailment states in multi-turn interactions for implicative reasoning
- Published [one paper in ACL 2020](#), ranked 1st on the [ShARC Leaderboard](#) (Nov. 2019), and filed one patent

Research Intern, Tencent AI Lab

May 2018 – August 2019

Collaborators: Lidong Bing, Piji Li

Shenzhen, China

- Performed research on question generation in machine reading comprehension
- Published several first-author papers in [conversational question generation \(ACL 2019\)](#), [difficulty controllable question generation \(IJCAI 2019\)](#), and [distractor generation \(AAAI 2019\)](#)

PUBLICATIONS & PREPRINTS

1. **Yifan Gao**, Henghui Zhu, Patrick Ng, Cicero Nogueira dos Santos, Zhiguo Wang, Feng Nan, Dejiao Zhang, Ramesh Nallapati, Andrew O. Arnold, Bing Xiang, [Answering Ambiguous Questions through Generative Evidence Fusion and Round-Trip Prediction](#), in **ACL 2021**, [code].
2. **Yifan Gao**, Chien-Sheng Wu, Jingjing Li, Shafiq Joty, Steven C.H. Hoi, Caiming Xiong, Irwin King, Michael R. Lyu, [Discern: Discourse-Aware Entailment Reasoning Network for Conversational Machine Reading](#), in **EMNLP 2020**, [code].
3. **Yifan Gao**, Chien-Sheng Wu, Shafiq Joty, Caiming Xiong, Richard Socher, Irwin King, Michael R. Lyu, Steven C.H. Hoi, [Explicit Memory Tracker with Coarse-to-Fine Reasoning for Conversational Machine Reading](#), in **ACL 2020**, [code].
4. **Yifan Gao**, Piji Li, Irwin King, Michael R. Lyu, [Interconnected Question Generation with Coreference Alignment and Conversation Flow Modeling](#), in **ACL 2019**, [code].
5. Jingjing Li*, **Yifan Gao***, Lidong Bing, Irwin King, Michael R. Lyu (* indicates equal contribution), [Improving Question Generation With to the Point Context](#), in **EMNLP 2019**.
6. **Yifan Gao**, Piji Li, Wei Bi, Xiaojiang Liu, Michael R. Lyu, Irwin King, [Dialogue Generation on Infrequent Sentence Functions via Structured Meta-Learning](#), in **Findings of ACL: EMNLP 2020**.

7. **Yifan Gao**, Lidong Bing, Wang Chen, Irwin King, Michael R. Lyu, [Difficulty Controllable Generation of Reading Comprehension Questions](#), in **IJCAI 2019**.
8. **Yifan Gao**, Lidong Bing, Piji Li, Irwin King and Michael R. Lyu, [Generating Distractors for Reading Comprehension Questions from Real Examinations](#), in **AAAI 2019**, [[code](#)].
9. Wang Chen, **Yifan Gao**, Jiani Zhang, Irwin King, Michael R. Lyu, [Title-Guided Encoding for Keyphrase Generation](#), in **AAAI 2019**.
10. Yan Xu, Zhengyang Shen, Xin Zhang, **Yifan Gao**, Shujian Deng, Yipei Wang, Yubo Fan, Eric I-Chao Chang, [Learning Multi-level Features For Sensor-based Human Action Recognition](#), in Pervasive and Mobile Computing 40 (2017): 324-338.
11. **Yifan Gao**, Jingjing Li, Michael R. Lyu, Irwin King, [Open-Retrieval Conversational Machine Reading](#), in **arXiv:2102.08633, 2021**.

PROFESSIONAL SERVICES

Journal Reviewer: ACM Transactions on Intelligent Systems and Technology (TIST), Neurocomputing, Neural Networks
Conference Program Committee Member: AAI (2019, 2020, 2021,2022), ACL (2020,2021), ACL Rolling Review, EMNLP (2020,2021), ICLR (2021,2022), ICML (2020,2021), IJCNN (2020,2021), IJCAI (2021-Senior,2022), NAACL (2021), NeurIPS (2021)
Membership: Association for Computational Linguistics (2018 – present), Association for the Advancement of Artificial Intelligence (2019)

SKILLS

Languages & Deep Learning Frameworks: Python, C/C++ , Matlab, PyTorch, TensorFlow, Keras
Developer Tools: Git, Docker, Google Cloud Platform, AWS (EC2, EFS, S3, SageMaker), PyCharm
Libraries: Huggingface Transformers, OpenNMT-py, TorchText