Chen Qu

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Center for Intelligent Information Retrieval
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Education

University of Massachusetts Amherst — Amherst, MA, US
Ph.D. in Computer Science — *Sep. 2018 – Jun. 2021 (expected)*
Advisor: Prof. W. Bruce Croft, ACM Fellow

University of Massachusetts Amherst — Amherst, MA, US
M.S. in Computer Science (GPA: 3.917/4.0) — *Sep. 2017 – May 2020*
Advisor: Prof. W. Bruce Croft, ACM Fellow

Dalian University of Technology — Dalian, China
B.E. in Computer Science and Technology — *Sep. 2013 – Jul. 2017*

Internship Experience

Google Research — Mountain View, CA, US
Research Intern (Natural Language Understanding) — *May 2020 – Sep. 2020*
Host and co-hosts: Dr. Weize Kong, Dr. Liu Yang, and Dr. Mingyang Zhang
I worked as a research intern on natural language understanding at Google Research.

Microsoft Research — Redmond, WA, US
Research Intern (Information Retrieval) — *May 2019 – Aug. 2019*
Mentor: Dr. Chenyan Xiong
I worked as a research intern on information retrieval at the Information and Data Sciences group at Microsoft Research. I worked on conversational search and document ranking.

Alibaba Group — Hangzhou, China
Research Intern (Natural Language Processing) — *May 2018 – Aug. 2018*
Mentors: Dr. Feng Ji and Dr. Minghui Qiu
I worked as a research intern on natural language processing at the AliMe team at Alibaba Group. AliMe is a conversational assistant designed mainly for customer service in the E-commerce domain. I worked on reinforcement learning and transfer learning for retrieval-based question answering.

Tencent — Shenzhen, China
Software Engineer Intern (Backend) — *Jul 2016 – Aug. 2016*
I worked as a software engineer intern at the Mobile Internet Group in Tencent. I worked on a large-scale web crawler and the backend of a Content Management System using C++ to manage a knowledge base for a personal assistant App.

Research Experience

Center for Intelligent Information Retrieval, UMass Amherst — Amherst, MA, US
M.S./Ph.D. Student and Research Assistant — *Sep. 2017 – Present*
Advisor: Prof. W. Bruce Croft
I am working with Prof. W. Bruce Croft on information retrieval and conversational search. I focus on history modeling for the conversational information seeking process, including history modeling for intent prediction, conversational question answering, and conversational document ranking.

DUT Information Retrieval Lab, Dalian University of Technology — Dalian, China
Undergraduate Research Assistant — *Dec. 2016 – Jun. 2017*
Advisors: Dr. Kan Xu and Prof. Yuan Lin
I worked with Dr. Kan Xu and Prof. Yuan Lin on information retrieval and learning to rank. We proposed and implemented a query expansion method based on word embedding. We also developed and integrated several feature generation methods for documents reranking in a patent retrieval system with promising results on TREC-CHEM dataset.

DUT Natural Language Processing Lab, Dalian University of Technology — Dalian, China
Undergraduate Research Assistant — *Jul. 2015 – Sep. 2015*
Advisor: Prof. Lishuang Li
I worked with Prof. Lishuang Li on natural language processing and named-entity recognition. We created a system to recognize chemical names in patents using Conditional Random Fields (CRFs). We used Python to extract more than two dozen of high-quality features for the learning and testing process. We participated in BioCreative evaluation and received high F-scores.

Publications

1. Open-Retrieval Conversational Question Answering. **SIGIR 2020**. Full Paper.
   Chen Qu, Liu Yang, Cen Chen, Minghui Qiu, W. Bruce Croft and Mohit Iyyer.
2. Contextual Re-Ranking with Behavior Aware Transformers. **SIGIR 2020**. Short Paper.
   Chen Qu, Chenyan Xiong, Yizhe Zhang, Corby Rosset, W. Bruce Croft and Paul Bennett.
3. IART: Intent-aware Response Ranking with Transformers in Information-seeking Conversation Systems. **WWW 2020**. Short Paper.
   Liu Yang, Minghui Qiu, **Chen Qu**, Cen Chen, Jiafeng Guo, Yongfeng Zhang, W. Bruce Croft and Haiqing Chen.
4. Attentive History Selection for Conversational Question Answering. **CIKM 2019**. Full Paper.
   Chen Qu, Liu Yang, Minghui Qiu, Yongfeng Zhang, Cen Chen, W. Bruce Croft and Mohit Iyyer.
5. A Hybrid Retrieval-Generation Neural Conversation Model. **CIKM 2019**. Full Paper.
   Liu Yang, Junjie Hu, Minghui Qiu, **Chen Qu**, Jianfeng Gao, W. Bruce Croft, Xiaodong Liu, Yelong Shen and Jingjing Liu.
6. BERT with History Answer Embedding for Conversational Question Answering. **SIGIR 2019**. Short Paper.
   Chen Qu, Liu Yang, Minghui Qiu, W. Bruce Croft, Yongfeng Zhang and Mohit Iyyer.
7. User Intent Prediction in Information-seeking Conversations. **CHIIR 2019**. Full Paper.
   Chen Qu, Liu Yang, Bruce Croft, Yongfeng Zhang, Johanne R Trippas and Minghui Qiu.
8. Answer Interaction in Non-factoid Question Answering Systems. **CHIIR 2019**. Short Paper.
   Chen Qu, Liu Yang, W. Bruce Croft, Falk Scholer and Yongfeng Zhang.
9. Learning to Selectively Transfer: Reinforced Transfer Learning for Deep Text Matching. **WSDM 2019**. Full Paper.
   Chen Qu, Feng Ji, Minghui Qiu, Liu Yang, Zhiyu Min, Haiqing Chen, Jun Huang and W. Bruce Croft.
10. Analyzing and Characterizing User Intent in Information-seeking Conversations. **SIGIR 2018**. Short Paper.
    Chen Qu, Liu Yang, W. Bruce Croft, Johanne R Trippas, Yongfeng Zhang, Minghui Qiu.
11. Response Ranking with Deep Matching Networks and External Knowledge in Information-seeking Conversation Systems. **SIGIR 2018**. Full Paper.
    Liu Yang, Minghui Qiu, **Chen Qu**, Jiafeng Guo, Yongfeng Zhang, W. Bruce Croft, Jun Huang, Haiqing Chen.

Honors and Awards

Outstanding Synthesis Project Award. 2020.
Passed portfolio with distinction. 2020.
W. Bruce Croft Graduate Scholarship in Computer Science. 2019.
SIGIR Student Travel Grant: SIGIR 2020, CIKM 2019, CHIIR 2019, and SIGIR 2018.

Professional Services

Program Committee Member 2020: CIKM 2020, ECIR 2020

Program Committee Member 2019: DAPA@WSDM 2019, EARS@SIGIR 2019

Conference Reviewer: KDD 2019-2020, AAAI 2019, NAACL 2019, ICTIR 2018

Invited Journal Reviewer: ACM Transactions on Information Systems (TOIS)

Technical Skills

- **Programming**:
  - Proficient: Python
  - Skillful: LaTeX, C++, SQL,
  - Experienced: Java, JavaScript, HTML, CSS, PHP, MATLAB, Android Developing
- **Systems**: Linux/Unix, Windows, MySQL
- **Frameworks & Tools**: TensorFlow, PyTorch, Jupyter Notebook, Numpy&SciPy, Pandas, Scikit-learn, Keras, NLTK, CRF++, RankLib.

Selected Courses

University of Massachusetts Amherst: Neural Networks, Machine Learning, Information Retrieval, Advanced Algorithms, Advanced Information Assurance, Software Engineering, Distributed Operating Systems

Dalian University of Technology: Mathematical Analysis for Engineering, Linear Algebra and Analytic Geometry, Discrete Mathematics, Compile Principles, Computer Network, Computer Organization Principles, Object-oriented Programming, Operating Systems, Principle of Database System, Hardware Comprehensive Training, Computer System Structure, Software Comprehensive Training, Introduction to Linux, Artificial Intelligence, Computer Graphics, Digital Image Processing

Independent Coursework: Applied Machine Learning in Python (Coursera), Text Mining and Analytics (Coursera), Machine Learning (Coursera)

Teaching

Teaching Assistant (TA): CS646 Information Retrieval (Fall 2020), a graduate-level course at UMass Amherst.

Languages

Chinese *(mother tongue)*, English *(full professional proficiency)*.