

# Chen Qu

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Center for Intelligent Information Retrieval  
College of Information and Computer Sciences  
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## Education

University of Massachusetts Amherst

**Ph.D. in Computer Science**

Advisor: Prof. W. Bruce Croft, ACM Fellow

AMHERST, MA, US

Sep. 2018 – Jun. 2021 (expected)

University of Massachusetts Amherst

**M.S. in Computer Science (GPA: 3.917/4.0)**

Advisor: Prof. W. Bruce Croft, ACM Fellow

AMHERST, MA, US

Sep. 2017 – May 2020

Dalian University of Technology

**B.E. in Computer Science and Technology**

DALIAN, CHINA

Sep. 2013 – Jul. 2017

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## Internship Experience

Google Research

**Research Intern (Natural Language Understanding)**

Host and co-hosts: Dr. Weize Kong, Dr. Liu Yang, and Dr. Mingyang Zhang

I am working as a research intern on natural language understanding at Google Research.

MOUNTAIN VIEW, CA, US

May 2020 – Aug. 2020

Microsoft Research

**Research Intern (Information Retrieval)**

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.

REDMOND, WA, US

May 2019 – Aug. 2019

Alibaba Group

**Research Intern (Natural Language Processing)**

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.

HANGZHOU, CHINA

May 2018 – Aug. 2018

Tencent

**Software Engineer Intern (Backend)**

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.

SHENZHEN, CHINA

Jul 2016 – Aug. 2016

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## Research Experience

Center for Intelligent Information Retrieval, UMass Amherst

**M.S./Ph.D. Student and Research Assistant**

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.

AMHERST, MA, US

Sep. 2017 – Present

DUT Information Retrieval Lab, Dalian University of Technology

**Undergraduate Research Assistant**

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.

DALIAN, CHINA

Dec. 2016 – Jun. 2017

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.

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## 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.
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## 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.

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## 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)

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## Technical Skills

- **Programming:**

- Proficient: Python
- Skillful:  $\text{\LaTeX}$ , 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.

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## 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)

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## Teaching

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

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## Languages

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