

# 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

**M.S./Ph.D. program in Computer Science**

Advisor: Prof. W. Bruce Croft, ACM Fellow

AMHERST, MA, US

Sept 2017 – Present

Dalian University of Technology

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

DALIAN, CHINA

Sept 2013 – Jul 2017

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## Internship Experience

Alibaba Group

**Research Intern (Natural Language Processing)**

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. It is able to take voice and text input, incorporate context to QA, and support multi-round interactions. I worked on DNN based supervised 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, conversational search, and question answering. We built a benchmark dataset called *MSDialog* on multi-turn QA dialogs and characterized the patterns of user intent dynamics in information-seeking conversations. We also built a user intent prediction model to effectively detect user intent in information-seeking conversations.

AMHERST, MA, US

Sept 2017 – Present

DUT Information Retrieval Lab, Dalian University of Technology

**Undergraduate Research Assistant**

Advisor: 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

DUT Natural Language Processing Lab, Dalian University of Technology

**Undergraduate Research Assistant**

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.

DALIAN, CHINA

Jul 2015 – Sept 2015

## Publications

1. **Chen Qu**, Feng Ji, Minghui Qiu, Liu Yang, Zhiyu Min, Haiqing Chen, Jun Huang and W. Bruce Croft. Learning to Selectively Transfer: Reinforced Transfer Learning for Deep Text Matching. Accepted to the 12th ACM International Conference on Web Search and Data Mining (**WSDM 2019**), **Full Paper**.
  2. **Chen Qu**, Liu Yang, W. Bruce Croft, Johanne R Trippas, Yongfeng Zhang, Minghui Qiu. Analyzing and Characterizing User Intent in Information-seeking Conversations, In Proceedings of the 41th International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR 2018**), Ann Arbor, Michigan, U.S.A. July 8-12, 2018. **Short Paper**.
  3. Liu Yang, Minghui Qiu, **Chen Qu**, Jiafeng Guo, Yongfeng Zhang, W. Bruce Croft, Jun Huang, Haiqing Chen. Response Ranking with Deep Matching Networks and External Knowledge in Information-seeking Conversation Systems, In Proceedings of the 41th International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR 2018**), Ann Arbor, Michigan, U.S.A. July 8-12, 2018. **Full Paper**.
  4. Kan Xu, Yuan Lin, **Chen Qu**, Bo Xu and Hongfei Lin, Research on Query Expansion Methods in Patent Retrieval Using Word Embedding. In proceedings of 23rd China Conference on Information Retrieval (**CCIR 2017**). Shanghai, China, July 12-14, 2017. **Short Paper**.
  5. Yuankai Guo, Shiyi Zhao, **Chen Qu** and Lishuang Li, Recognition of Chemical Entity Mention in Patents Using Feature-rich CRF. In proceedings of the BioCreative V.5 Challenge Evaluation Workshop (**BioCreative V.5**). Barcelona, Spain, April 26-27, 2017. **Short Paper**.
  6. **Chen Qu**, Tianfu Zheng and Liuke Jin, FRCRF: A Feature-rich CRF-based Solution for Chemical Entity Mention in Patent Task. In proceedings of the Fifth BioCreative Challenge Evaluation Workshop (**BioCreative V**). Sevilla, Spain, September 9-11, 2015. **Short Paper**.
  7. Zhenchao Jiang, Liuke Jin, Lishuang Li, Meiyue Qin, **Chen Qu**, Jieqiong Zheng and Degen Huang, A CRD-WEL System for Chemical-disease Relations Extraction. In proceedings of the Fifth BioCreative Challenge Evaluation Workshop (**BioCreative V**). Sevilla, Spain, September 9-11, 2015. **Full Paper**.
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## Technical Skills

- **Programming:**
    - Proficient: Python, SQL
    - Skillful: Java, C/C++,  $\text{\LaTeX}$
    - Experienced: JavaScript, HTML, CSS, PHP, MATLAB, Android Developing
  - **Systems:** Linux/Unix, Windows, MySQL
  - **Frameworks & Tools:** Numpy&SciPy, Pandas, Scikit-learn, TensorFlow, Keras, NLTK, CRF++, RankLib.
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## Selected Courses

- University of Massachusetts Amherst:** Neural Networks, Machine Learning, Information Retrieval, Advanced Algorithm, Advanced Information Assurance, Software Engineering
- 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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## Languages

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