

# 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	AMHERST, MA, US
<b>Ph.D. in Computer Science</b>	<i>Start in Sept 2018</i>
Advisor: Prof. W. Bruce Croft, ACM Fellow	
University of Massachusetts Amherst	AMHERST, MA, US
<b>M.S. in Computer Science</b>	<i>Sept 2017 – Present</i>
Advisor: Prof. W. Bruce Croft, ACM Fellow	
Dalian University of Technology	DALIAN, CHINA
<b>B.E. in Computer Science and Technology</b>	<i>Sept 2013 – Jul 2017</i>

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## Internship Experience

Tencent	SHENZHEN, CHINA
<b>Software Engineer Intern (Backend)</b>	<i>Jul 2016 – Aug 2016</i>
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. I also collaborated with team members on various product demands including an automatic alerting system for outstanding assignments for our customer service team. I accumulated tremendous first-hand experience of how to code on an industry level including robust programming and large-scale agile design & architecture.	

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## Research Experience

Center for Intelligent Information Retrieval, UMass Amherst	AMHERST, MA, US
<b>M.S./Ph.D. Student</b>	<i>Sept 2017 – Present</i>
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 <i>MSDialog</i> on multi-turn QA dialogs and characterized the patterns of user intent dynamics in information-seeking conversations, which could be useful to design guidelines of conversational search systems. We are also working on building interactive relevance feedback models for answers to improve the performance of information retrieval systems with limited interaction bandwidth.	
DUTIR Lab, Dalian University of Technology	DALIAN, CHINA
<b>Undergraduate Research Assistant</b>	<i>Dec 2016 – Jun 2017</i>
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.	
DUTNLP Lab, Dalian University of Technology	DALIAN, CHINA
<b>Undergraduate Research Assistant</b>	<i>Jul 2015 – Sept 2015</i>
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. **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**.
2. 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**.
3. 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**.
4. 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**.
5. **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**.
6. 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++, L<sup>A</sup>T<sub>E</sub>X
  - 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, 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*).