

QIUCHI LI

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EDUCATION

University of Padua

Ph.D in Engineering

Department of Information Engineering

October 2017 - Present

Tsinghua University

Bachelor of Engineering

Department of Electronic Engineering

September 2011 - July 2015

RESEARCH INTERESTS

My general research interests are Information Retrieval (IR), Natural Language Processing (NLP) and Machine Learning (ML).

I am currently working on investigating Quantum-theoretic frameworks for language understanding, which consists of implementing various quantum-inspired approaches to build complex-valued representations for textual and multimodal data, and addressing downstream IR and NLP tasks by instrumenting quantum-like processes with neural networks or tensor networks with complex-valued components. The approaches are expected to have decent performance and high extent of interpretability on different tasks.

RESEARCH EXPERIENCES

Visiting Researcher, University of Montreal, Canada

January 2020 - Present

- Quantum-inspired models for multimodal sentiment analysis
- Advisor: Prof. Christina Lioma

Visiting Researcher, University of Copenhagen, Denmark

August 2019 - December 2019

- Quantum-inspired models for multimodal sentiment analysis
- Advisor: Prof. Christina Lioma

Visiting Researcher, Beijing Institute of Technology, China

January 2019 - March 2019

- Quantum-inspired models for sentiment analysis
- Advisor: Prof. Dawei Song

Early-stage Researcher (ESR), University of Padua, Italy

October 2017 - Present

- Investigation of quantum-theoretic frameworks for accessing and retrieving multimodal data.
- Advisor: Prof. Massimo Melucci

Research Student, the Open University, UK

October 2015 - October 2017

- Recommendation of software change locations based on input non-source code artefacts, using IR and Machine Learning approaches.
- Advisor: Prof. Bashar Nuseibeh and Prof. Yijun Yu

Visiting Student, Tianjin University, China

August 2014 - September 2015

- Investigation of quantum-inspired models for session search task in IR.
- Advisor: Prof. Dawei Song

Research Program, Tsinghua University, China

October 2014 - July 2015

- Opinion Mining and Sentiment Analysis, supported in part by the National High-Tech. R&D Program of China (863 Program) under Grant 2012AA011004, in part by the National Natural Science Funds of China under Grant 61170197.
- Advisor: Prof. Ji Wu

SELECTED PUBLICATIONS

- Benyou Wang, Donghao Zhao, Christina Lioma, **Qiuchi Li**, Peng Zhang, and Jakob Grue Simonsen. “Encoding Word Order in Complex Embeddings,” *International Conference on Learning Representations (ICLR)*, 2020.
- Yazhou Zhang, **Qiuchi Li**, Dawei Song, Peng Zhang, and Panpan Wang. “Quantum-Inspired Interactive Networks for Conversational Sentiment Analysis,” *International Joint Conferences on Artificial Intelligence Organization (IJCAI)*, 2019.
- Chen Zhang, **Qiuchi Li**, and Dawei Song. “Aspect-Based Sentiment Classification with Aspect-Specific Graph Convolutional Networks,” *International Conference on Empirical Methods in Natural Language Processing and the 9th International Joint Conference on Natural Language Processing (EMNLP-IJCNLP)*, 2019.
- Chen Zhang, **Qiuchi Li**, and Dawei Song. “Syntax-Aware Aspect-Level Sentiment Classification with Proximity-Weighted Convolution Network,” *International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR)*, 2019.
- **Qiuchi Li**, Benyou Wang, and Massimo Melucci. “CNM: An Interpretable Complex-Valued Network for Matching,” *The North American Chapter of the Association for Computational Linguistics (NAACL)*, 2019.
- Benyou Wang*, **Qiuchi Li***, Massimo Melucci, and Dawei Song. “Semantic Hilbert Space for Text Representation Learning,” *The Web Conference (WWW)*, 2019. (*Equal Contribution)
- **Qiuchi Li**, Massimo Melucci, and Prayag Tiwari. “Quantum Language Model-Based Query Expansion,” *International Conference on Theory of Information Retrieval (ICTIR)*, 2018
- **Qiuchi Li**, Jingfei Li, Peng Zhang, and Dawei Song. “Modeling Multi-Query Retrieval Tasks Using Density Matrix Transformation,” *International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR)*, 2015.

AWARDS AND HONOURS

- **Proceedings co-chair** of Italian Information Retrieval Workshop (IIR) *September 2019*
- **Best Explainable NLP Paper Award** of the 2019 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL) *June 2019*
- **Proceedings co-chair** of ACM SIGIR International Conference on the Theory of Information Retrieval (ICTIR) *September 2018*
- **Second Prize** in the 15th “Challenge Cup” science and technology innovation competition for college students *April 2013*
- **Outstanding Student Scholarship** of Tsinghua University *November 2012*

SKILLS

- **Languages:** Mandarin/English
- **Toolbox/Software:** PyTorch, TensorFlow, Keras, CUDA, cuDNN, LATEX
- **Programming Languages:** Python, MATLAB, R, C/C++, Java, Verilog