QIUCHI LI

(+39)3884622889 ⋄ qiuchili@dei.unipd.it
Via Giovanni Gradenigo 6/B, Padua, Italy, 35131 PD
qiuchili.github.io

EDUCATION

University of Padua *October 2017 - Present*
Ph.D in Engineering
Department of Information Engineering

Tsinghua University *September 2011 - July 2015*
Bachelor of Engineering
Department of Electronic Engineering

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 Student, Tsinghua University, China *October 2014 - July 2015*

- Opinion mining and sentiment analysis on micro-blog data.
- Advisor: Prof. Ji Wu

Research Student, North Carolina State University, USA *June 2014 - August 2014*

- Investigation on new evaluation metrics for casual inference algorithms on Gene expression data.
- Advisor: Prof. Nagiza Samatova

RESEARCH PROJECTS

Quantum Information Access and Retrieval Theory (QUARTZ) *October 2017 - September 2020*

- Supported by the European Union's Horizon 2020 research and innovation programme under the Marie Skodowska-Curie grant agreement No. 721321.
- Role: Early-stage Researcher (ESR)

Quantum Information Access and Retrieval Theory and Applications *April 2018 - January 2021*

- Intergovernmental Cooperation and Innovation Program supported by the China Innovation Funding 2017YFE0111900.
- Role: Researcher

Retrieving New Vulnerability Information from Evolving Software Development *October 2015 - October 2017*

- Funded by the department of Computing & Communications, Open University
- Role: Researcher

A Finger-touch Interactive System based on Structured Light *September 2013 - June 2014*

- Funded by Tsinghua Student Training Research (SRT) Program.
- Role: Student Researcher

SELECTED PUBLICATIONS

- **Qiuchi Li**, Alessandro Stefani, Giovanni Toto, Emanuele Di Buccio, Massimo Melucci. "Towards Multimodal Sentiment Analysis Inspired by the Quantum Theoretical Framework, " to appear at *International Conference on Multimedia Information Processing and Retrieval (MIPR)*, 2020.
- Cheng Zhang, **Qiuchi Li**, Lingyu Hua and Dawei Song."Assessing the Memory Ability of Recurrent Neural Networks," to appear at *European Conference on Artificial Intelligence (ECAI)*, 2020.
- 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

EXTRA-CURRICULUM ACTIVITIES

- **GO:** Second-class athletes of China, Tsinghua University Go Team Member, Co-Champion of the 43rd London Open Go Tournament
- **Jianzi (Shuttlecock):** Finalist of the 8th National Traditional Sports Games in Beijing, Champion & Record Setter of Tsinghua University Freshmen Sports Meeting
- **Bridge:** 10th place in the Bridge Championship for High School Students, Beijing, China