# Qingyang Zhong

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## EDUCATION

**Department of Automation (EECS), Tsinghua University** Expected 07/2020
Second Year Overall GPA: **3.63**/4 Rank: 8/165
**Relevant Courses**

- **Mathematics:** Linear Algebra(2)(**A**), Linear Algebra(1)(**A-**), Calculus A(1)(2), Stochastic Mathematical Methods (**A-**), Introduction to Complex Analysis (**A-**), Numerical Analysis and Algorithms.
- **Computer Science:** Computer Languages and Programming, Data Structures, C++ Programme Design and Training, Introduction to Artificial Intelligence, Computer Networks and Applications.
- **Others:** Physics for Scientists and Engineers B(1)(2)(**A**), Fundamentals of Analog Electronics(**A-**), Signals and System Analysis(**A-**), Computational Genome Analysis, Digital Electronics

## COMPUTING SKILLS AND OTHERS

- **Programming languages:** Python, C#, C/C++, MATLAB, VerilogHDL, Assembly Language.
- **Software and Operation Systems:** GitHub, Linux, LaTeX.
- **Languages:** Native in Chinese; Proficient in English (GRE Verbal 157, Quantitative 169)

## WORKING PAPER

- *Course Concept Extraction in MOOC via Explicit/Implicit Representation*, **Xiaochen Wang, Wenzheng Feng, Jie Tang and Qingyang Zhong (Tsinghua University)**

## RESEARCH EXPERIENCE

**Research on Question Template Extraction in MOOC** 09/2018 – Present
*Independent Research, Supervised by Prof. Jie Tang, Knowledge Engineering Group (KEG)*
*Department of Computer Science and Technology, Tsinghua University*

- Aggregated and generalized questions with similar meanings asked by MOOC users to construct template sketch.
- Used Word2Vec model to obtain embeddings and calculated cosine similarity by BoW to match the questions with the most corresponding template.
- Used RNN model and Bert model to improve the classification performance.
- Clustered questions under thresholds to learn new features and draw new templates. (haven't finished)

**Research on Entity Disambiguation in MOOC** 06/2018 – 09/2018
*Independent Research, Supervised by Prof. Jie Tang, Knowledge Engineering Group (KEG)*
*Department of Computer Science and Technology, Tsinghua University*

- Developed annotation tool used to label categories of MOOC users' questions manually.
- Collected question-answer pairs concerning course concept and did data cleaning.
- Used embeddings of information of the courses where the questions were raised to disambiguate entities and improve the performance of current question answering system.

**Research on Course Concept Extraction in MOOC** 02/2018 – 06/2018
*Core group member, Supervised by Prof. Jie Tang, Knowledge Engineering Group (KEG)*
*Department of Computer Science and Technology, Tsinghua University*

- Utilized structured data on Wikipedia to generate explicit representation for concepts.
- Helped design a graph-based propagation method to extract important concepts from MOOCs.

## INTERNSHIP

**TechX Summit 2018** *Academic Leader of Deep Reinforcement Learning* 07/2018

- Worked as teaching assistant of *Deep Reinforcement Learning* course at *TechX Summit*, one of the biggest and most influential STEM summer camp in China.
- Gave seminar talk on the theory of Chatbot.

- Helped students with Hackathon project concerning machine learning and deep learning.

## SELECTED COURSE PROJECTS

**Introduction to Artificial Intelligence (97/100)**
**Search Algorithms Utilization** 11/2018
**Supervised by Associate Prof. Rui Jiang**

- Demonstrated several common path finding algorithms traversing a 2D maze with randomly weighted cells.
- Compared the performance of Breadth First search, Depth First search, Best First search, Bibreadth First search, Dijkstra and A* algorithm in finding the cheapest path.

**Numerical Analysis and Algorithms**
**Development of Facial Image Processing Software** 10/2018
**Supervised by Prof. Jie Zhou**

- Implemented facial image fusion function with TPS and B-Spline algorithm.
- Enhanced the fusing performance with several interpolation methods such as bilinear interpolation.

**Computer Networks and Applications**
**Design of P2P Chat System** 12/2018
**Supervised by Associate Prof. Qingshan Jia**

- Designed a Peer-to-peer chat system for instant messaging based on a central location server. Used hybrid network architecture of Client-server and Peer-to-peer to query the current state of users and set up chat links.
- Provided group chat service and picture display service at the same time.

## EXTRACURRICULAR ACTIVITIES

**Literature and Art Activities**

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|---|---|
| Clarinet of Tsinghua University Symphony Orchestra | 09/2016-Present |
| Gold Prize of Group Instrumental Performance in Beijing University Music Festival | 10/2016 |
| Clarinet Amateur Grade 10 of China Conservatory of Music (Highest amateur level) | 10/2012 |
| Portatone Amateur Grade 10 of Chinese Musicians' Association (Highest amateur level) | 08/2008 |

**Voluntary Work**

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|---|---|
| One-star Volunteer of Beijing | 09/2016-Present |
| Voluntary Work at Orphanage, Canggu, Indonesia | 01/2018 |
| Voluntary Teaching at Primary School, HuangZhong County, Qinghai Province, China | 07/2017 |
| Volunteer of Buddy Program 17, Tsinghua University International Volunteer Association | 09/2018 |
| Organizer of voluntary Info Talk at Alma Mater | 01/2017 |

## AWARDS AND HONORS

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| China National Scholarship (Highest scholarship of the Government of China, top 0.1%) | 2018 |
| Friend of Tsinghua, Guangzhou Pharmaceutical Holdings Limited Scholarship (Academic Excellence Award) | 2017 |
| University Scholarship for Excellent Science and Technology Innovation | 2018 |
| University Scholarship for Excellent Literature and Art Work | 2017, 2018 |
| University Scholarship for Excellent Society Practice Work | 2017 |
| HAGE Scholarship of Department of Automation | 2018 |
| 3rd Prize in 36th Tsinghua Challenge Cup (Competition in Academic and Technology Innovations) | 04/ 2018 |
| 2nd Prize in 7th Tsinghua Innovation Competition (Rank 3rd of all teams) | 05/ 2018 |
| 2nd Prize in Tsinghua Hardware Design Competition | 06/ 2017 |