

# Minqian Liu

☎ +86 15521305104 • ✉ lmqscutcs@gmail.com • 🌐 mqianliu.github.io

## EDUCATION

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### South China University of Technology (SCUT)

Candidate for B.Eng. in Computer Science and Technology

Guangzhou, China

Sept. 2017-Jul. 2021 (expected)

- **Overall GPA: 3.73/4.00**
- **Core Courses:** Probability & Mathematical Statistics(4.0/4.0), Data Structures(4.0/4.0), Computer Organization & Architecture(4.0/4.0), Database System(4.0/4.0), Numerical Methods(4.0/4.0), Introduction to Pattern Recognition(4.0/4.0)

### University of California, Berkeley

Visiting student at Department of Electrical Engineering and Computer Sciences

Berkeley, USA

Jan. 2019-May 2019

- **Overall GPA: 3.67/4.00**
- **Courses:** Discrete Mathematics and Probability Theory (A), Introduction to Artificial Intelligence (A-), Efficient Algorithms and Intractable Problems (B+), Introduction to Machine Learning (audited)

## PUBLICATIONS & MANUSCRIPTS

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### Dynamic Extension Nets for Few-shot Semantic Segmentation

- Lizhao Liu\*, Junyi Cao\*, **Minqian Liu\***, Yong Guo\*, Qi Chen\*(*equal contribution*), Mingkui Tan.
- In *Proceedings of the 28th ACM International Conference on Multimedia*, 2020. [[paper](#)][[code](#)]

### Co-attention Network with Label Embedding for Text Classification

- **Minqian Liu**, Lizhao Liu, Junyi Cao, Qing Du.
- Under review at *Neurocomputing*, 2020.

### Progressive Dialogue State Tracking for Multi-domain Dialogue Systems

- Jiahao Wang, **Minqian Liu**, Xiaojun Quan.
- Under review at *2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*.

## RESEARCH EXPERIENCE

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### Dialogue State Tracking for Medical Consultation Related to COVID-19

Advisor: Prof. Pengtao Xie, University of California, San Diego (Online)

Jul. 2020-Sept. 2020

- Incorporated dialogue state tracking (DST) into a medical dialogue system that provides consultations related to COVID-19, which aims to alleviate the shortage of medical professionals.
- Constructed a DST dataset and designed its ontology based on relevant medical knowledge, e.g., the symptoms and diagnosis of pneumonia, the prescriptions and suggestions from doctors, etc.
- Annotated the dialogues by filling the golden value in each pre-defined slot. Dataset is available [here](#).

### Dynamic Extension Nets for Few-shot Semantic Segmentation

Advisor: Prof. Mingkui Tan, SCUT Machine Intelligence Lab, SCUT

Dec. 2019-Jul. 2020

- Proposed a Dynamic Extension Network that dynamically constructs and maintains a classifier for the novel class by leveraging the knowledge from the base class and the information from novel data.
- Proposed a Guided Attention Module to focus on class-relevant content in the image, and a dynamic extension training algorithm to exploit the knowledge of base classes in an end-to-end manner.
- Conducted extensive experiments to demonstrate the superiority of the proposed method. Achieved state-of-the-art performance on two few-shot semantic segmentation datasets.
- Wrote the paper as co-first author, which is presented as a full paper at *ACM Multimedia 2020*.

### Co-attention Network with Label Embedding for Text Classification

Advisor: Prof. Minghui Tan and Prof. Qing Du, SCUT Machine Intelligence Lab, SCUT Dec. 2019-May 2020

- Proposed a co-attention network that jointly encodes the word sequence and label embedding for text classification to attend to the relevant parts of text and labels.
- Conducted a series of experiments to demonstrate the effectiveness of the proposed method.
- Wrote the paper as first author, which is under review at *Neurocomputing*.

### Progressive Dialogue State Tracking for Multi-domain Dialogue Systems

Advisor: Prof. Xiaojun Quan, Sun Yat-sen University

May 2019-Oct. 2019

- Formalized two important observations in dialogue state tracking: accumulating state triples and adjacent state dependencies. Proposed a progressive domain-slot tracker accordingly.
- Designed experiments to evaluate the proposed method and wrote the paper as second author, which is under review at *ICASSP 2021*.

### Deep Reinforcement Learning under Adversarial Environment

Advisor: Prof. Patrick P. K. Chan, SCUT

Apr. 2019-Mar. 2020

- Read papers on the robustness and security of Deep Q-Learning Network (DQN) under the adversarial environment. Conducted experiments and wrote technical reports.

## PROJECT EXPERIENCE

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### AI Interviewer: Automatic Evaluation System for Interview

Advisor: Prof. Jianming Lv, SCUT

May 2019-Apr. 2020

- Proposed hierarchical keyword-question attention to score interviewees' personality traits.
- Developed a system that evaluates the performance of interviewees based on face-api.js.

### Natural Language Processing with Deep Learning

Advisor: Prof. Christopher Manning, Stanford University (Online)

Jun. 2019-Aug. 2019

- Online curriculum projects and assignments including word vectors, dependency parsing, and neural machine translation. Code is available [here](#).

### Artificial Intelligence

Advisor: Prof. Stuart Russell and Prof. Sergey Levine, UC Berkeley

Jan. 2019-May 2019

- Curriculum projects of the course [Introduction to Artificial Intelligence](#).
- Implemented algorithms including multi-agent search algorithms, game tree, reinforcement learning, probabilistic graphical models, and perceptron algorithm. Code is available [here](#).

### Efficient Algorithm

Advisor: Prof. Luca Trevisan and Prof. Prasad Raghavendra, UC Berkeley

Jan. 2019-May 2019

- Final project of the course [Efficient Algorithm and Intractable Problems](#).
- Designed algorithms (e.g., variants of minimum spanning tree) to achieve specified goals within several constraints. Design document and code are available [here](#).

## HONORS & AWARDS

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- Saliat Technology Innovation Scholarship (Top 10% in Computer Science Department), SCUT. 2020.
- Undergraduate Oversea Study Scholarship (RMB ¥30,000), SCUT. 2019.
- Second Prize Scholarship (Top 15% in Computer Science Department), SCUT. 2018.

## SKILLS

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- **Language Skills:** English (Fluent; TOEFL 102), Chinese (Native)
- **Programming Skills:** Python, C/C++, PyTorch, TensorFlow, LaTeX (Skilled); Java, MATLAB, R (Basic)