Luzhe Sun

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EDUCATION BACKGROUND

University of Chicago **Chicago, US**
Master Program in Computer Science *Sept 2021 - Mar 2023(expected)*
GPA: 3.77/4.00, Core Course: Discrete Math(A) Algorithm(A) Machine Learning(A)

Xiamen University **Xiamen, China**
Bachelor of Software Engineering *Sept 2017 - Jul 2021*
Overall GPA: 3.74/4.00 Top:4/125 Major GPA: 3.92/4.00

PUBLICATIONS

- Xing Ai, **Luzhe Sun**, Junchi Yan, Zhihong Zhang and Edwin Hancock **Decompositional Quantum Graph Neural Network** (Posted to TPAMI, Under Review)

RESEARCH EXPERIENCE

Shared Autonomy on Robotics Trajectory — Research Assistant **Jun 2022-Present**
*Advisor: Matthew R. Walter — Director, Robot Intelligence through Perception Laboratory at **TTIC***

- Robot trajectory prediction using diffusion models and visualization in simulator
- User manipulation correction using conditional diffusion model
- Shrank noise level over observation and action to preserve user intention

Directed Acyclic Graph Learning — Research Assistant **March 2022 - Jun 2022**
*Advisor: Bryon Aragam — Assistant Professor, Booth School of Business at the **University of Chicago***

- Used marginal normalization flow to predict distribution of single vertex
- Used GAN to distinguish the mimic data by normalization flow and real distribution

Deep Multi-Fidelity Gaussian Process — Research Assistant **Jun 2020 - Dec 2020**
*Advisor: Guang Lin — Director,Data Science Consulting Service, Associate Professor, **Purdue University***

- Combining deep neural network methods with multi-dimensional Gaussian process to improve the Co-Kriging method
- Constructed the multi-fidelity deep Gaussian process prediction framework
- Modified the network structure and loss function, and improved the R2 score of the prediction result from a negative number to 0.61

National Grid PUE Prediction Based on Massive Data — Research Assistant **Feb 2019 - May 2020**
*Advisor: Zhihong Zhang — Associate Professor, **Xiamen University***

- Used LSTM framework to predict PUE value from serialized data with an accuracy rate of 0.98.
- Used reinforcement learning to provide equipment adjustment plans with a predictive PUE.

Quantum Graph Neural Network — Research Assistant **Jun 2019 - Jan 2020**
*Advisor: Zhihong Zhang — Associate Professor, **Xiamen University***

- Constructed and adjusted the quantum bit circuit; Tested the impact of different circuit structures on the mutag dataset
- Reconstructed the pooling layer of quantum graph neural network and develop subgraph cutting method to process graph on quantum framework
- Redesigned the encode layer. Increased the accuracy from 0.62 to 0.91

SKILLS

- **Language**: Mandarin Chinese (Native), English (Proficient)
- **Programming**: Python, C/C++, SQL, Java, Assembly, HTML, CSS
- **Coding Frameworks**: PyTorch, TensorFlow, SpringBoot, Quantum Computing
- **Tools/Platform**: Git, Docker, Xcode, MATLAB, Navicat, Unity, Postman

AWARDS & ACHIEVEMENTS

- Outstanding Graduates Student, Xiamen University 2021
- **National Scholarship** (Top 0.2% nationwide), Chinese Ministry of Education 2020
- **National Scholarship** (Top 0.2% nationwide), Chinese Ministry of Education 2019
- **National Second Prize** for China Undergraduate Mathematical Contest in Modeling 2019
- **National Third Prize** for China Students Service Outsourcing Competition 2019
- Huang Xilie Scholarship of Xiamen University in 2019 (2/200) 2019
- The First Prize Scholarship, Xiamen University 2018
- Xiamen University Social Work Scholarship 2018

LEADERSHIP EXPERIENCE

- Student Union, Software School — Vice President Jun 2018 - Oct 2019
- Publicity Center, Software School — Center Leader Jun 2018 - Oct 2019
- Debate Team, Software School — Team Leader May 2018 - Jun 2019
- Class Three of Software School (Undergraduates of 2017) — Monitor Oct 2017 - Jun 2021

VOLUNTEER EXPERIENCE

4th China "Internet +" College Students Innovation and Entrepreneurship Competition
Leader of Volunteers in Computer Science Department 2019
- Coordinated the layout of the venue. Determined statistics and on-site scheduling of branch venues.
- Assisted the IT department of the competition in providing information technology support.
- Adjusted the hardware equipment of the competition. Volunteer hours are over 100 hours.

Xiamen University "Deep Love for Medicine"
Volunteer Activity Sponsor 2018
- Communicated with the hospital to manage the schedule and labor for 28 volunteers.
- Helped patients to go through the registration, reimbursement and payment process faster and easier.
- Proposed improvement plan for hospital signage.