

Luzhe Sun

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🔗 Github link

🌐 Website link

EDUCATION BACKGROUND

University of Chicago

Master Program in Computer Science

GPA: 3.77/4.00, Core Course: Discrete Math(A) Algorithm(A) Machine Learning(A)

Chicago, US

Sept 2021 - Mar 2023(expected)

Xiamen University

Bachelor of Software Engineering

Overall GPA: 3.74/4.00 Top:4/125 Major GPA: 3.92/4.00

Xiamen, China

Sept 2017 - Jul 2021

PUBLICATIONS

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

RESEARCH EXPERIENCE

Diffusion Planning on Robotics Trajectory | Research Assistant

Jun 2022-Present

Advisor: Matthew Walter | Director, Robot Intelligence through Perception Laboratory at TTIC

- Object position tracking using DINO and real time mapping to UR5 robot arm world coordinates
- Robot trajectory prediction using diffusion models and visualisation of the results in simulation environments such as Ravens, ur5
- Exploring the effect of fixed target states, demonstration field of view length and other properties on the predicted trajectory of diffusion models based on maze2d

Directed Acyclic Graph Learning | Research Assistant

March 2022 - Jun 2022

Advisor: Bryon Aragam | Assistant Professor, Booth School of Business at the University of Chicago

- Use marginal normalization flow to predict distribution of single vertex
- Use 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

- Combine deep neural network methods with multi-dimensional Gaussian process to improve the Co-Kriging method
- Construct the multi-fidelity deep Gaussian process prediction framework
- Modify the network structure and loss function, and improve 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

- Built an LSTM neural network and used the serialized input to predict the PUE value with an accuracy rate of 0.98.
- Use 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

- Construct and adjust the quantum bit circuit; Test the impact of different circuit structures on the mutag dataset
- Reconstruct the pooling layer of quantum graph neural network and develop subgraph cutting method to process graph on quantum framework
- Redesign the encode layer. Increase the accuracy from 0.62 to 0.91

SELECTED PROJECTS

- Pocket Book** | Swift *link* 2022
- iOS expense software developed by Xcode-SwiftUI, used to record income and expenditure, date, etc.
 - Analyze user income and expenditure, sort and visualize consumption categories.
- Job Seeking Database** | SQL, PYTHON, HTML *link* 2022
- Construct a Hiring-Applying database system with SQLite
 - Build a website to enable users to query and modify visually
- Data Science Project** | Python *link* 2022
- Numpy Decision Tree, Numpy CNN(CIFAR-10), Numpy Soft Margin SVM
 - Implement Skip List, Bloom Filters, Interval Tree, Local Search, R-Tree
- Lite Mall** | Java, SpringBoot *link* 2019
- An online mall constructed by Java SpringBoot, including front-end and back-end
 - Provide completed design diagram document and code.
- AI Travel Assistant** | Swift, Python *link* 2019
- Image recognition based attraction introduction, photo recognition text translation
 - Restaurant and accommodation recommendations and rating system

SKILLS

- **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** of China Undergraduate Mathematical Contest in Modeling 2019
- **National Third Prize** of 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
- Coordinate the layout of the venue. Result statistics and on-site scheduling of branch venues.
 - Assist the IT department of the competition to provide information technology support.

- Adjust the hardware equipment of the competition. Volunteer hours are over 100 hours.

Xiamen University "Deep Love for Medicine"

Volunteer Activity Sponsor

2018

- Communicate with the hospital to establish a summer division of labor for 28 volunteers.
- Help patients to go through the registration, reimbursement and payment process faster and easier.
- Propose improvement plan for hospital signage.