Xinye Xiong

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Education

Shanghai Jiao Tong University Sep 2021 - June 2023
Master of Applied Statistics *Cum. GPA.* 3.63/4.0

Southern University of Science and Technology Sep 2017 - Jun 2021
Bachelor of Mathematics and Applied Mathematics *Cum. GPA.* 3.82/4.0

Research Experience

Multi-Robot System Sep 2022 - Present
The Intelligent Robotics and Machine Vision Lab *Shanghai, China*

- An integrated task assignment, path planning, and coordination problem was applied for large-scale robot networks with uncertainties, reaching multiple objectives.
- During multi-robot task allocation, prioritize tasks with significant influence on the entire system and formulate the problem of critical subset identification mathematically and statistically.
- Apply traffic flow learning to enhance large-scale Multi-Robot cooperative path planning under uncertainties.

Graph Neural Network Sep 2021 - Apr 2023
Shanghai Jiao Tong University *Shanghai, China*

- To address the sparsity of mutation datasets, design a graph denoising model to locate the best one or more mutation site(s) on proteins.
- Effectively reduce the cost of cancer diagnosis by integrating CNN and GNN to design a stomach disease detection model.
- Present a comprehensive review of biological molecules' representations, systems' representations, and geometric deep learning models at different levels.

Computer Vision Sep 2020 - Jan 2022
Southern University of Science and Technology *Shenzhen, Guangdong, China*

- Traffic Sign Detection and Recognition: Detect the locations of traffic signs in a video and identify their meaning in real time.
- Auto Color: Apply GAN to change the colors of different objects in a single image

Differential Equation Sep 2019 - Jun 2021
Southern University of Science and Technology *Shenzhen, Guangdong, China*

- Numerical Calculation on Fluid Partial Differential Equations.
- Ordinary Differential Equations on Infectious Disease Model: Build multiple ODE models to predict the number of people infected by different infectious diseases and make COVID-19 predictions.

Photoacoustic Imaging Jun 2018 - Oct 2018
Southern University of Science and Technology *Shenzhen, Guangdong, China*

Intern Experience

AI Software Intern Oct 2021 - Mar 2022
Taize Chiptech *Shanghai, China*

- ResNet-18 on FPGA: Design essential forward propagation functions and stack them to run on FPGA.
- VLIW Compiler Development: Cooperate with fulfilling AI operator library in assembly language.
- Fixed Issue: ResNet-18 running results on FPGA were inconsistent with those generated by PyTorch.

Publications

- Xinye Xiong, Xingyao Han, Zhe Liu, Hesheng Wang, "Exhaustiveness Does Not Necessarily Mean Better: Selective Task Planning for Multi-robot Systems." *Under Review*.
- Xingyao Han, Siyuan Chen, Xinye Xiong, Shunbo Zhou, Zhe Liu, "Traffic Flow Learning Enhanced Large-Scale Multi-Robot Cooperative Path Planning Under Uncertainties." *Under Review*.
- X Xiong, B Zhou, YG Wang, "Graph Representation Learning for Interactive Biomolecule Systems." *Under Review*.
- B Zhou, O Lv, K Yi, X Xiong, P Tan, L Hong, YG Wang, "Lightweight Equivariant Graph Representation Learning for Protein Engineering." *Machine Learning for Structural Biology Workshop, NeurIPS 2022.*
- Y Shen, B Zhou, X Xiong, R Gao, YG Wang, "How Graph Neural Networks Enhance Convolutional Neural Networks Towards Mining the Topological Structures from Histology." *ICML Workshop on Computational Biology 8*

Awards & Honors

Academic Scholarship of Shanghai Jiao Tong University
Shanghai Jiao Tong University *2021 - 2023*

Outstanding Graduate of the Faculty of Science
Southern University of Science and Technology *2021*

Outstanding Graduate of the Mathematics Department
Southern University of Science and Technology *2021*

The first prize of SUSTech Outstanding Student Scholarship
Southern University of Science and Technology *2019 - 2021*

Sports Star of the Shuren College of SUSTech
Southern University of Science and Technology *2020*

Third Prize in Mathematical Contest in Modeling for Chinese University Students
China Association for Industrial and Applied Mathematics *2019*

Others

- **Programming Languages**: Python, R, Matlab, C, C++, Java, Julia,
- **Athletics**: Member of the Women's Soccer Team of SJTU, Captain of the Women's Soccer Team of SUSTech Shuren College.
- **WFAXSJTU Club Organizer**: We are the first team in China to promote walking soccer, a sport similar to soccer but forbidden from running. We established the club to attract people with relative physical strength, such as senior citizens, to exercise more through soccer.
- **See more information on https://xinyexiong.github.io/**