JIUHONG XIAO

917-353-3447 ◇ jx1190@nyu.edu ◇ https://xjh19971.github.io/

EDUCATION

New York University Jan 2020 - Present
M.S. in Computer Science GPA: 3.93/4.0

University of Science and Technology Beijing Sep 2015 - Jun 2019
B.Eng. in Intelligence Science and Technology GPA: 3.65/4.0, Major GPA: 3.81/4.0

RESEARCH INTEREST

Computer Vision, Deep reinforcement learning, Multi-view perception.

PUBLICATIONS

Multi-Robot Collaborative Perception with Graph Neural Networks 2021
Yang Zhou, Jiuhong Xiao, Yue Zhou, Giuseppe Loianno
Under review.

Toward Coordination Control of Multiple Fish-Like Robots: Real-Time Vision-Based Pose Estimation and Tracking via Deep Neural Networks 2021
Tianhao Zhang, Jiuhong Xiao, Liang Li, Chen Wang, Guangming Xie
IEEE/CAA Journal of Automatica Sinica, vol. 8, no. 12, pp. 1964-1976, December 2021.

Image Encryption Algorithm Based on Memristive BAM Neural Networks 2018
Jiuhong Xiao, Weiping Wang, Meiqi Wang
IEEE 3rd International Conference on Data Science in Cyberspace, p205-212, July 16, 2018.

The Stability of Memristive Multidirectional Associative Memory Neural Networks With Time-varying Delays in the Leakage Terms via Sampled-data Control 2018
Weiping Wang, Xin Yu, Xiong Luo, Long Wang, Lixiang Li, Juergen Kurths, Wenbing Zhao, Jiuhong Xiao
PLOS ONE, Volume: 13, Issue: 9, Pages: e0204002, September 24, 2018.

EXPERIENCE

Amazon May 2021 - Aug 2021
Applied Scientist Intern
• Developed a compression method specific to face images, achieving **5x** compress ratio than High Efficiency Video Coding (HEVC) format.
• Jointly optimized compression model with downstream tasks to avoid significant degradation on downstream performance.

New York University May 2020 - May 2021
Research Assistant
• Implemented self-driving policy training based on generated maps inferred from past driving data, reducing the cost of lane annotation and increasing the generalization of training for different lane layouts.

Intelligent Biomimetic Design Laboratory, Peking University Jun 2019 - Jan 2020
Research Assistant
• Implemented a fish pose estimation method fusing top-down and bottom-up paradigms, increasing by **7.9%** and **10.9%** mAP compared with classical methods using single paradigm.
• Developed a fish pose tracking system based on keypoint matching, reducing tracking error by **72.7%**.

• Built a robotic fish dataset with over **1300** annotated frames as the benchmark for robotic fish pose estimation and the foundation of fish group control.

PROJECTS

Multi-robot Perception with Graph Convolution Network Sep 2020 - Dec 2020
Advisors: Rob Fergus.
• Developed a GNN-based system to improve the perception ability of a single robot by sharing information across the robot network.

GPU Accelerated Applications with CUDA and OpenMP Sep 2020 - Dec 2020
Advisors: Mohamed Zahran.
• Compared the performance of different GPU-friendly algorithms on CUDA and OpenMP-GPU.

Autodetection: An End-to-end Autonomous Driving Detection System Jan 2020 - May 2020
Advisors: Yann LeCun, Alfredo Canziani.
• Won the **2nd** place of general ranking on roadmap prediction and object detection task.
• Built an end-to-end autonomous driving detection system to predict bird-view roadmap and objects from multi-view images without measurement of camera parameters.
• Improved model performance with feature pyramid network and self-supervised learning by **7.72%** mAP on roadmap and **14.35%** mAP on detection.

A Survey of Bayesian Methods for Deep Learning Jan 2020 - May 2020
Advisor: Joan Bruna.
• Surveyed recent works that apply principles of Bayesian inference to deep learning and noted special applications of Bayesian deep learning.
• Implemented PyTorch version of Bayesian methods like SGLD, Deep Ensembles, and MCDropout.

TECHNICAL SKILLS

Programming	C/C++, Java, Python, Matlab, SQL.
Platform/tools	Opencv, Pytorch, MySQL, CUDA.

HONORS AND AWARDS

Excellent Award of Undergraduate Thesis	2019
Third Prize, Chinese College Students Intelligence Design Contest	2018
Peoples Scholarship, USTB	2015 - 2018
First Prize, Mathematical Modeling Competition, Beijing	2017
Excellence Award, Boer National College Students Innovation Entrepreneurship Competition, Beijing	2017
Second Prize, Sensor Design Competition, USTB	2016
Third Prize, iCAN International Contest of Innovation, China	2016