JIUHONG XIAO

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EDUCATION

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

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

PUBLICATIONS

TAB-IOL: Real-Time Pose Estimation and Tracking for Multiple Fish-Like Robots 2020
Tianhao Zhang, Jiuhong Xiao*, Liang Li, Chen Wang, Wei Wang, Guangming Xie*
Under review.

Real-time Pose Estimation and Tracking of Multiple Fish-like Robots: A Marker-less Method using Deep Neural Networks 2020
Tianhao Zhang, Jiuhong Xiao*, Liang Li, Chen Wang, Wei Wang, Guangming Xie*
Under review.

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 (DSC 2018), 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 Xiao 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

New York University Fri 2020 - Present
Research Assistant
• Developed a self-supervised learning model for object detection from multi-view images, researching on using an architectural energy based model to exploit unlabeled data.
• Implemented self-driving policy training based on vector maps generated 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.

AbleCloud, Beijing Jun 2018 - Aug 2018
Product Intern
• Participated in the development of mobile APP for smart lamp project, implementing schedule and monitor function by **Android Studio** and AbleCloud PaaS Platform.

• Compiled technical documents of car network APIs and provided technical support for users and developers.

University of Science and Technology Beijing *2016 - 2017*
Tutor of Arduino
• Taught Arduino programming to high school students and leaded a section to develop Arduino-based projects with MP3 modules and LED modules.

PROJECTS

Autodetection: An End-to-end Autonomous Driving Detection System Jan 2020 - Fri 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 - Fri 2020
Advisor: Joan Bruna.
• Surveyed recent works that apply principles of Bayesian inference to deep learning, and made note of notable applications of Bayesian deep learning.
• Implemented pytorch version of Bayesian methods like SGLD, Deep Ensembles and MCDropout.

Object Identification System Based on Speech Feedback Oct 2018 - Dec 2018
• Developed object detecting system on **Tensorflow** to predict objects without predefined categories.
• Implemented the users speech feedback program to improve the accuracy or added new categories based on Baidu speech recognition APIs.

CT Image Reconstruction System Apr 2017
• Implemented an algorithm to find the center and rotation of CT scanner from one projected image and reconstruct CT image based on the filtered back-projection algorithm on **MATLAB**.

TECHNICAL SKILLS

Programming	C/C++, Java, Python, Matlab, SQL.
Platform/tools	Opencv, Tensorflow, Keras, Pytorch, MySQL, Android Studio

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