Sicong Jiang

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Education

Georgia Institute of Technology Aug. 2019 – May. 2021
MS Electrical and Computer Engineering, GPA 3.7/4 *Atlanta, GA*

Northeastern University Sep. 2015 – May. 2019
BS Engineering in Automation, GPA 89.1/100, Top 3% *Shenyang, China*

Research Experience

Cognitive Robotics and AI Lab, Kent State Univercity July. 2020 – Present
Summer Research Intern, Advisor: Rui Liu *Kent, OH*

Adversarial Attack Mitigation for Safe Tracking Formation of Multi-Robot System

- Focused on improving the mitigation ability of multi-agent system against different kinds of attacks.
- Utilized accessible sensor data to analyze the type and mode of attacks
- Designed the attack mitigation mechanisms for different kinds of attacks to improve the stability of UAV formations.

Intellient Vision and Automation Lab, Georgia Tech Aug. 2019 – Present
Research Assistant, Advisor: Patricio A. Vela *Atlanta, GA*

An Improved Multi-Agent Exploration Strategy with Deep Reinforcement Learning

- Applied MADDPG policy to traditional frontier-based exploration algorithms in multi-agent system to increase the exploration efficiency and accuracy.
- Created a benchmark with several metrics to evaluate the performance of different multi-agent exploration algorithms.

The State Key Laboratory of Automation for Process Industries May. 2018 – Jul. 2018
Undergraduate Research Assistant, Advisor: Ping Zhou *Shenyang, China*

Robust Random Vector Functional-Link Network (RVFLN) Modeling of Molten Iron Quality

- Developed a pre-trained model with Auto Encoder (AE) and stochastic neural network to predict the quality index of hot-rolled steel with high accuracy.
- Improved the model robustness by using the Denoising Auto Encoder (DAE) to obtain clean data.

Robotics Automation and Vision Laboratory, Northeastern University Apr. 2017 – May. 2018
Research Assistant, Advisor: Yunzhou Zhang *Shenyang, China*

Long-term Tracking Algorithm with Multi-Feature Fusion and Detector

- Developed a long-term tracking algorithm by using the filtered deep features and designed the re-detection mechanism to solve the drift problem in visual tracking.
- Combined the correlation filter based tracker with YOLO/SSD detector to get better tracking performance.
- Applied the tracking algorithm on turtlebots and designed experiments to test their performance in the real environment.

Publications

- Zhang J, **Jiang S**, Zhang Y, et al. Long-term tracking algorithm using deep features and a single shot multibox detector[J]. Journal of Electronic Imaging, 2018, 27(5): 053019.
- **Jiang S**, Zhang J, Zhang Y, et al. Long-term tracking algorithm with the combination of multi-feature fusion and YOLO[C]//Chinese Conference on Image and Graphics Technologies. Springer, Singapore, 2018: 390-402.
- Bao J, Zhang Y, Zhang Y, Liu T, Zheng R, **Jiang S**. Long-term Tracking Based on Spatio-Temporal Context Model[C]//2018 IEEE International Conference on Information and Automation (ICIA). IEEE, 2018: 1611-1616.
- **Jiang S**, Wang R, Liu R, et al. Adversarial Attack Mitigation for Safe TrackingFormation of Multi-Robot Systems. (To be submitted)

Awards

2019 Outstanding Graduates of Northeastearn University (Top 3%)

2019 Most Influential Graduates in Northeastern University (Top 3%)

2017 National First Prize of China Undergraduate Mathematical Contest in Modeling (Top 1%)

2017 First Prize of Liaoning Province in China Undergraduate Mathematical Contest in Modeling (Top 5%)

2016 - 2019 First&Second-class Scholarship in Northeastearn University (4 times)

Skills

Techniques Control Theory, Statistical Machine Learning, Object Detection, Robotic Dynamics, Data Mining

Programming Language Python, JAVA, MATLAB, R

Libraries & Frameworks ROS, Simulink, Scikit-Learn, OpenCV/AI, Pytorch, Tensorflow

Standardized Tests

TOEFL 104
R: 28 L: 26 S: 22 W: 28

GRE 322
V: 152 + Q: 170 + AW: 3.5