

CURRICULUM VITAE — ZIRUI ZHAO

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EDUCATION

Xi'an Jiaotong University, Xi'an, P. R. China

August 2016 - June 2020

Bachelor of Engineering in Automation (EECS)

CGPA: 3.84/4.3

Honor Engineering Program, Qian Xuesen Class. Faculty of Electronic and Information Engineering

National University of Singapore, Singapore

July 2018 - August 2018

Visiting student, Computer Science / Tele-robotics.

2018 Summer Workshop, School of Computing.

WORK EXPERIENCE

Carnegie Mellon University, Pittsburgh, U.S.A.

July 2019 - August 2019

· Summer Intern @ Safe AI Lab, The Robotics Institute & Dept. Mechanical Engineering

Xi'an Jiaotong University, Xi'an, P. R. China

September 2017 - Present

· Research Assistant @ Cognitive Architecture Group, Institute of Artificial Intelligence and Robotics

INTERESTS & SKILLS

Interests

Reinforcement Learning, Cognitive Robotics, Robot Perception, Human-Robot Interaction, Control Theory.

Language

Python, C++, MATLAB, L^AT_EX.

Application Tools

TensorFlow, PyTorch, Keras, Scikit-Learn, Numpy, Jupyter, OpenCV, ROS.

Software

Carla, GitLab, GitHub.

PUBLICATION

Z. Zhao, Y. Mao, Y. Ding, P. Ren and N. Zheng, "Visual-Based Semantic SLAM with Landmarks for Large-Scale Outdoor Environment," 2019 2nd China Symposium on Cognitive Computing and Hybrid Intelligence (CCHI), Xian, China, 2019, pp. 149-154.

R. Chen, W. Wang, **Z. Zhao**, D. Zhao, [Active Learning for Risk-Sensitive Inverse Reinforcement Learning](#), Preprint, arXiv, 2019.

RESEARCH

Active Risk-sensitive Inverse Reinforcement Learning

July 2019 - August 2019

Safe AI Lab

Carnegie Mellon University, Pittsburgh, U.S.A.

- Active demonstration querying for faster human risk envelope approximation via disturbance planning.
- Experimental verification in single-step and multi-step setting with simulated car-following task in Carla.

Visual Semantic SLAM for Outdoor Environments

November 2018 - June 2019

Cognitive Architecture Group

Xi'an Jiaotong University, Xi'an, P.R.China

- Accomplished visual semantic SLAM based on PSPNet101 and ORB SLAM.

- The SLAM has implemented with GPS Fusion and topological semantic mapping.

PROJECTS

Multi-Robot Cooperative Navigation

Aug 2018 - Dec 2018

Xi'an Jiaotong University

Xi'an, P.R.China

- This project established a multi-robot navigation and exploration system, which consist of UAVs and UGVs.
- [Video Demo](#)

Tele-robotics & Deep Learning

Jul 2018 - Aug 2018

National University of Singapore

Singapore

- We built an autonomous blind-guide robot by using Raspberry Pi and Arduino. We have also actualized the computer vision task py inception model and Azure service for obstacle classification.

Adversarial Attack of Deep Neural Network

Aug 2018

JD AI Research

Beijing, P.R.China

- Finished the task of Target Black-box attack on deep neural network by using Naive Evolutionary Algorithm.

AWARDS & TITLES

Siyuan Merit Scholarship by Xi'an Jiaotong University, 2017 & 2018 & 2019

Excellent Student by Xi'an Jiaotong University, 2017 & 2018 & 2019

Second Prize of 1989 Mechanical Alumni Scholarship by Xi'an Jiaotong University, 2018

PRIZES

2018 National University Student Innovation Program: Finished Autonomous Logistic UAV and Multi-agents system and got first prize (National Prize).

2018 DAC System Design Contest: Assistant for image processing, model optimization and got rank of 4/21 in GPU platform

2017 China Undergraduate Mathematical Contest in Modelling: First Place of Shaanxi Province

2018 Big Data and Artificial Intelligence Contest: Implemented Deep Convolutional Network SE-ResNet 152 to achieve 98 % accuracy in the contest dataset and got rank of 39/300

2018 Global College Technical Summer Training Camp of JD AI research: Finished the task of Target Black-box attack on deep neural