

RUI CHEN

Curriculum Vitae ◇ Personal Website: <https://ruichen.pub/> ◇ richen@umich.edu · ruichen2@andrew.cmu.edu

EDUCATION

M.S. in Electrical and Computer Engineering / Robotics, CV Sep. 2017 - Dec. 2018
Rackham Graduate School. CGPA: 3.96/4.00
The University of Michigan, Ann Arbor.

B.S. in Computer Engineering Sep. 2013 - Aug. 2017
Joint-Institute, College of Engineering. Dual-Degree Program. CGPA: 3.75/4.00
Shanghai Jiao Tong University, Shanghai, China - University of Michigan, Ann Arbor, U.S.

SKILLS AND INTERESTS

Interests	Reinforcement Learning, Game theory, Inverse Reinforcement Learning, Computer Vision, Cognitive Science, Meta Learning, Deep Learning, Probabilistic Robotics.
Application Skills	Human-Robot Interaction, Autonomous Vehicles, Manufacturing. Kinova Gen3, PCL, Cuda, Polysync, ROS, PyTorch, Tensorflow, RTOS, Embedded Systems, Electronics Design, Computer Networks, Distributed/Parallel Computing.
Software Languages	Kinova Kortex API, Unreal Engine 4 (Editor & C++ Programming), Blender C/C++, Python, Matlab, Arduino.

PUBLICATION

X. Chen, **R. Chen**, Z. Sui, Z. Ye, Y. Liu, R. I. Bahar, and O.C.Jenkins, “GRIP: generative robust inference and perception for semantic robot manipulation in adversarial environments”, in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019. Available: <https://arxiv.org/abs/1903.08352>

R. Chen, W. Wang, Z. Zhao, and D. Zhao, “Active Learning for Risk-Sensitive Inverse Reinforcement Learning”, in *International Conference on Robotics and Automation (ICRA) (In Review)*, 2020. Available: <https://arxiv.org/abs/1909.07843>

R. Chen, M. Arief, and D. Zhao, “How to Evaluate Self-Driving Testing Ground? A Quantitative Approach”, in *IEEE Transactions on Intelligent Transportation Systems (T-ITS) (In Review)*, 2019. Available: <https://arxiv.org/abs/1909.09079>

COMMUNITY CONTRIBUTION

Paper review for *International Conference on Robotics and Automation (ICRA)*, 2020

RESEARCH

Adaptive Human-Robot Collaboration as Sequential Game Sep 2019 - Present
Intelligent Control Lab, Robotics Institute *Carnegie Mellon University, Pittsburgh*

- Incorporating neural processes into sequential games for fast adaptation to unseen human instructions.

Active Learning for Risk-Sensitive Inverse Reinforcement Learning June 2019 - Sep 2019
Safe AI Lab, Mechanical Engineering *Carnegie Mellon University, Pittsburgh*

- 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.

Generative Robust Inference and Perception in Adversarial Environments Sep 2018 - March 2019
Lab 4Progress, Department of EECS *University of Michigan, Ann Arbor*

- First stage Pyramid CNN provides prior knowledge on object labels, locations and aspect ratios.
- Second stage particle filter searches in 6D space with feature-based likelihood function.

Evaluation of CAV testing grounds via generative sample-based optimization April 2019 - Sep 2019
Safe AI Lab, Mechanical Engineering *Carnegie Mellon University, Pittsburgh*

- Evaluating testing capability based on utility of V2V interaction scenarios within testing ground road map.
- Estimating spatial compatibility of traffic encounter primitives via iterated likelihood weighting.

PRACTICAL CONTRIBUTIONS

Cartesian Following Control on Kinova Gen3 Robotic Arm	Oct. 2019 - Nov. 2019
Intel Real-Sense Camera Support for CMU OpenPose Library	Sep. 2019 - Oct. 2019
Automatic driving scenario generator from OSM data in Carla	April 2018 - Aug. 2018
Lincoln MKZ on-track testing with simulated traffic scenarios at Mcity	Jan. 2018 - May 2018
Surface normal prediction from single color image	March 2018 - April 2018
Particle filter SLAM on mobile bot with RPLIDAR	November 2017 - Dec. 2017
Potential Field Path Planning with Self-balancing robot	October 2017 - November 2017
RGBD-based object manipulation using a 6-DOF robotic arm	Sep. 2017 - October 2017

POSITIONS OF RESPONSIBILITY

Research Intern @Baidu USA LLC (future position),	Jan. 2020 - July 2020
Research Intern @Intelligent Control Lab, Robotics Institute, CMU	Sep. 2019 - Present
Research Assistant @Safe AI Lab, Mechanical Engineering, CMU	Feb. 2019 - Sep. 2019
Research Assistant @Lab 4Progress, The University of Michigan, Ann Arbor	Sep. 2018 - Feb. 2019
Research Assistant @Mcity, Ann Arbor	Jan. 2018 - June 2018
Software Intern @NVIDIA, Santa Clara	May 2016 - July 2016
Teaching & Lab Assistant @UM-SJTU, Shanghai Jiao Tong University, Shanghai	March 2015 - July 2016

AWARDS AND HONORS

University Honors, University of Michigan	Dec. 2015, April 2016, April 2017
Dean's List, University of Michigan	Dec. 2015, April 2016, Dec. 2016, April 2017
Excellent assistant class advisor, Shanghai Jiao Tong University	Aug. 2015
Academic Excellence Scholarship, Shanghai Jiao Tong University	Dec. 2014
Dean's List, Shanghai Jiao Tong University	April 2013, April 2014