

RUI CHEN

Curriculum Vitae ◇ Personal Website: <https://ruichen.pub/> ◇ ruic3@andrew.cmu.edu · richen@umich.edu

EDUCATION

Ph.D. in Robotics Robotics Institute. Carnegie Mellon University, Pittsburgh.	Sep. 2020 - Present CGPA: 4.13/4.00
M.S. in Electrical and Computer Engineering / Robotics, CV Rackham Graduate School. The University of Michigan, Ann Arbor.	Sep. 2017 - Dec. 2018 CGPA: 3.96/4.00
B.S. in Computer Engineering Joint-Institute, College of Engineering. Dual-Degree Program. Shanghai Jiao Tong University, Shanghai, China - University of Michigan, Ann Arbor, U.S.	Sep. 2013 - Aug. 2017 CGPA: 3.75/4.00

SKILLS AND INTERESTS

Interests	Optimal Control, Probabilistic Graphical Models, Reinforcement Learning, Deep Learning.
Application	Intelligent Manufacturing, Human-Robot Interaction, Autonomous Vehicles.
Skills	Kinova Gen3, Speedgoat, PCL, Cuda, Polysync, ROS, PyTorch, Tensorflow, RTOS, Embedded Systems, Computer Networks, Distributed/Parallel Computing.
Software	Openpose C++, Intel RealSense SDK 2.0, Kinova Kortex C++, Unreal Engine 4 C++.
Languages	C/C++, Python, Matlab, Arduino.

PUBLICATION

- R. Chen**, A. Shek, C. Liu, “Learn from Human Teams: a Probabilistic Solution to Real-Time Collaborative Robot Handling with Dynamic Gesture Commands,” submitted to *IEEE Transactions on Robotics*, 2021.
- R. Chen***, P. Huang*, L. Shi*, “Latent Goal Allocation for Multi-Agent Goal-Conditioned Self-Supervised Imitation Learning,” in *Bayesian Deep Learning workshop, NeurIPS*, 2021.
- R. Chen**, M. Arief, W. Zhang and D. Zhao, “How to Evaluate Proving Grounds for Self-Driving? A Quantitative Approach,” in *IEEE Transactions on Intelligent Transportation Systems (T-ITS)*, vol. 22, no. 9, pp. 5737-5748, Sept. 2021, doi: 10.1109/TITS.2020.2991757.
- 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,” 2019 *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019, pp. 3988-3995, doi: 10.1109/IROS40897.2019.8967983.
- R. Chen**, W. Wang, Z. Zhao, and D. Zhao, “Active Learning for Risk-Sensitive Inverse Reinforcement Learning”, *arXiv*, 2020. Available: <https://arxiv.org/abs/1909.07843>

RESEARCH

Active Set Algorithm for Accelerating Convex Feasible Set Motion Planning April 2021 - Present
Intelligent Control Lab, Robotics Institute *Carnegie Mellon University, Pittsburgh*

- Efficient quadratic programming solver specialized for convex feasible set motion planning.

Composable Robot Insertion Framework for Delicate Manufacturing Sep 2020 - March 2021
Intelligent Control Lab, Robotics Institute *Carnegie Mellon University, Pittsburgh*

- Modular design of perception, control, and learning.

PRACTICAL CONTRIBUTIONS

Convex Feasible Set Library for Motion Planning	April. 2021 - July. 2021
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, Sunnyvale	Jan. 2020 - Aug 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