Yi Chen

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Technical Skills

- **Programming:** Python, C++, C#, HTML, MATLAB, Simulink, Linux, ROS, Gazebo, GitHub, Arduino, Raspberry Pi
- **Design:** AutoCAD, AutoLISP, ANSYS, Pro/e (Creo), Inventor, SOLIDWORKS, LabView
- **Manufacturing:** 3D-Printing, Laser Cutting, Computer Integrated MF, CNC, Welding, Lathe, Aluminum Casting

Publications

- **Yi Chen**; L. Zhang; T. Merry; S. Amatya; W.L. Zhang; Y. Ren, "*When Shall I Be Empathetic? The Utility of Empathetic Parameter Estimation in Multi-Agent Interactions*", *IEEE International Conference on Robotics and Automation (ICRA), 2021*. (*ACCEPTED*)

Research Experience

DESIGN INFORMATICS LAB, ASU ***JAN 2020~PRESENT***

- Researched in parameter estimation and motion prediction in autonomous driving, improving safety & efficiency.
- Conducted autonomous vehicle simulation with Python on Bayesian network algorithm with Pytorch value network.
- Proven the effectiveness and robustness of intention-aware empathetic agents in incomplete information games.

NTU AUTONOMOUS RACECAR PROJECT ***JAN 2017~DEC 2017***

- Developed Autonomous navigation and SLAM on Nvidia TX1 with Linux, with LIDAR, camera and IMU deployed.
- Enhanced equipment safety and improved battery life for longer test duration with mechanisms and circuits design.
- Utilized OpenCV and YOLO for onboard camera object detection, deployed LIDAR for SLAM and motion planning.

Academic Projects

MULTI-ROBOT SYSTEM UAV PROJECT (GITHUB) ***SPRING 2020***

- Developed aerial vehicle simulation with ROS, Gazebo, Mavlink, solved optimization problem for task allocation.
- Simulated multi-robot collaboration to optimally accomplish tasks in conjunction in Gazebo/ROS and MATLAB.

ADAPTIVE CONTROL PROJECT (GITHUB) ***SPRING 2020***

- Implemented and designed adaptive controllers including LQG, PPC, MRAC and PID switching with SIMULINK.
- Performed system identification and online adaptation, incorporated modifications such as dead-zone, projection, etc.

VEHICLE DYNAMICS CONTROL PROJECT (GITHUB) ***FALL 2019***

- Constructed and designed various types of controllers for vehicle dynamics with MATLAB and SIMULINK.
- Evaluated and presented the pros and cons of different controllers in lane-changing and lane-following scenarios.

Professional Experience

IT & MANUFACTURING LAB ASSISTANT **FULTON SCHL OF ENGR, ASU** ***AUG 2019~MAY 2020***

- Optimized operation of 3D printers and Computer Integrated Manufacturing systems during busy semesters.
- Communicated closely with students and faculty to schedule tasks and to meet high manufacturing demands.

IP CAMERA INTERN **ROBERT BOSCH** ***SEP 2018~FEB 2019***

- Specialized in engineering graphs for exploded model drawing, dimension drawing with Creo for product design.
- Conducted various product tests for IP camera development following IK (IEC62262), IP code (IEC60529).
- Improved laboratory operation by documenting parts inventory and scheduling the manufacturing time slots.

Education

Arizona State University **Tempe, AZ** ***Aug 2019~May 2021***

- *Master of Science in Robotics and Autonomous System*

National Taiwan University **Taipei, Taiwan** ***Sep 2014~Jun 2018***

- *Bachelor of Science in Mechanical Engineering (ME)*