# Yi Chen

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## 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)*

## 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 ICRA 2021*. (*ACCEPTED*)

## Research Experience

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

- *Masters Researcher* *Advisor: Prof. "Max" Yi Ren*
  - Researched in game-based human-robot interaction (HRI) in Autonomous Vehicles, improving safety & efficiency.
  - Conducted autonomous vehicle simulation with Python on Bayesian network algorithm with Pytorch value network.
  - Proven the effectiveness and robustness of human-aware empathetic agents in incomplete information games.

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

- *Undergraduate Researcher* *Advisor: Prof. Kui-Yuan Chan*
  - Developed Autonomous navigation system on Nvidia TX1 Linux platform, equipped with LIDAR, camera and IMU.
  - 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.

## 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** **BOSCH** ***SEP 2018~FEB 2019***

- In charge of engineering graphs and utilizing 3D printer to create mock-up for design inspection for manufacturing.
- Conducted reliability tests during security camera development stage following IK and IP commercial standard.
- Coordinated tasks between mechanical design team and product testing team for design validation and feedback.

## Academic Projects

**ASU MULTI-ROBOT SYSTEM UAV PROJECT** ***SPRING 2020***

- Developed aerial vehicle simulation environment with ROS, Gazebo, Mavlink, for exploration systems testing.
- Simulated multi-robot collaboration to optimally accomplish tasks in conjunction with Gazebo and MATLAB.

**ASU VEHICLE DYNAMICS CONTROL PROJECT** ***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.

## 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

## Course Highlights

- Artificial Intelligence, Adaptive Control, Multi-robot systems, Game theory, Applied Electronics, Exploration Systems