XIAOZHOU ZHANG

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Education

- **University of Pennsylvania** — Philadelphia, PA
  M.S.E. in Robotics; GPA: 4.00/4.00 — *May 2021*
  M.S.E. in Computer and Information Science; GPA: 4.00/4.00 — *May 2021*
- **Mao Yisheng Honors College, Southwest Jiaotong University** — Chengdu, China
  B.E. in Mechanical Engineering; GPA: 3.60/4.00; Ranking: 1/21(Honors Class) — *Jun 2018*

Experience

- **iFLYTEK** — Suzhou, China
  Computer Vision Research Intern — *Jun 2019 - Aug 2019*
  - Leveraged Mask R-CNN on x-ray machine for prohibited items detection
  - Implemented human keypoint detection by extending Mask R-CNN with such branch
- **GRASP Lab** — Philadelphia, PA
  Research Assistant: HRI platform Quori — *Spring 2018*
  - Assisted with design of arm module which mimics ball joint of human shoulder
  - Set up SLAM packages for autonomous navigation to human visitors
- **Chengdu Shimmer Duckweed Technology Co. Ltd** — Chengdu, China
  Co-founder/Chief Technology Officer — *May 2017 - Aug 2018*
  - Developed product Duckweed for treating algae bloom and monitoring water quality
  - Designed and built hardware structures, sensing circuit module with temperature and PH sensors
  - Programmed STC microcontroller and data transmission module with SIM900A GPRS DTU
  - Obtained **Patent for Inventions #201710328765.1** and **Patent for Utility Models #201720518974.8**

Projects

- **F1/10 Autonomous Car Racing** — Philadelphia, PA
  End to End Framework for 1:10 Scaled RC Car Autonomous Rracing — *Fall 2019*
  - Localized RC car using particle filter in global map created by Google Cartographer
  - Implemented real time collision-free path planning with Informed RRT*
  - Implemented raceline optimization using Covariance Matrix Adaptation Evolution Strategy
  - Developed MPC pipeline with waypoint tracking and obstacle avoidance on CVXGEN
- **Quadrotor Planning and Vision** — Philadelphia, PA
  End to End Framework for Autonomous Quadrotor Navigation — *Spring 2019*
  - Implemented path planning with A* and Dijkstra's algorithm
  - Generated minimum snap trajectory for tracking
  - Implemented pose estimation by VIO and optical flow
  - Estimated and updated pose and velocity with Extended Kalman Filter
- **Serial Manipulator Kinematics and Planning** — Philadelphia, PA
  Introduction to Robotics Course Project — *Fall 2018*
  - Formulated foward, inverse and velocity kinematics of 5 DOF Lynx robot
  - Collision-free path planning with RRT and Artificial Potential Field
  - Implemented A* and D* search algorithom on 2D map

Skills & Relevant Courses

- **Programming**: C++, Python, MATLAB, JAVA, C
- **Platforms and Libraries**: ROS, Pytorch, OpenAI-Gym
- **Courses**: Autonomous Car Racing, Advanced Machine Perception, Advanced Robotics, Data-Driven Modeling, Reinforcement Learning