Xiaoshan Lin

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Education

- **University of Minnesota, Twin Cities**
  - PhD candidate in Aerospace Engineering and Mechanics *Sept. 2020 – present*
  - Coursework in Robotics, Learning, Optimization and Control (Dynamic Systems Theory, Reinforcement Learning, Nonlinear Optimization, Optimal and Robust Control, Machine Learning, Deep Learning, Robot Motion Planning, Nonlinear Control, Introduction to Robotics, Robust Multivariable Control Design, Learning from Data, etc.)
- **Shanghai Jiao Tong University**
  - B.S. in Mechanical Engineering, Zhiyuan Honors Program in Engineering *Sept. 2015 – June 2019*

Publications

- **Xiaoshan Lin**, Yasin Yazıcıoğlu, and Derya Aksaray. "Robust Planning for Persistent Surveillance with Energy-Constrained UAVs and Mobile Charging Stations." *IEEE Robotics and Automation Letters (presented at ICRA),* 2022.
- **Xiaoshan Lin***, Abbasali Koochakzadeh*, Yasin Yazicioglu, and Derya Aksaray. "Reinforcement Learning Under Probabilistic Spatio-Temporal Constraints with Time Windows." *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). IEEE, 2023.*

Professional Experience

- **Research Intern,** Mitsubishi Electric Research Laboratories *Host: Abraham Vinod* *Nov. 2023 – Apr. 2024*
  - Conducted research on environment monitoring with energy-constrained UAVs and mobile charging stations
  - Conducted experiments using TurtleBot and Crazyflie platforms to validate the proposed approach
- **Research Assistant,** University of Minnesota *Advisor: Prof. Derya Aksaray | CORIES Lab* *Sept. 2020 – present*
  - Thesis topic: Constrained planning and learning for robotic systems
  - Developed a robust planning algorithm for routing energy-constrained UAVs and mobile charging stations
  - Developed an algorithm that ensures satisfaction of temporal logic constraints during reinforcement learning
  - Working on planning and learning with temporal logic constraints for multi-robot systems
- **Teaching Assistant,** University of Minnesota *Sept. 2020 – present*
  - Led weekly discussion sections for Statics and Dynamics
  - Graded homework and held office hours for Mechanics of Flight, Aeromechanics Laboratory, Computer Methods, Linear Control Systems, and Statics and Dynamics.
- **Control Engineer Intern,** Flexiv Robotics Ltd. *Sept. 2018 – Jul. 2019*
  - Implemented Python and C++ code for Hand-eye calibration and planning of a robotic manipulator
- **Research Intern,** University of Pennsylvania *Advisor: Prof. Mark Yim | GRASP Lab* *Jun. 2018 – Sept. 2018*
  - Designed an optimal tracking controller and implemented embedded codes for a cable-driven manipulator
  - Designed a circuit board that integrates a microcontroller and sensors

Skills

- C/C++, MATLAB, Python, ROS, PyTorch, Gym, Gazebo, Mbed OS, Arduino, SOLIDWORKS, MATLAB Simulink

Honors and Awards

- Honorable Mentions for NASA's The Trash-to-Gas Ash Management Challenge *2022*
- John and Jane Dunning Copper Fellowship of University of Minnesota *2021*
- Academic Excellence Scholarship of Shanghai Jiao Tong University *2016, 2017, 2018*
- Honors Scholarship of Zhiyuan Program in Engineering *2016, 2017*