Chendi Lin

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EDUCATION

CARNEGIE MELLON UNIVERSITY
School of Computer Science
MS in Robotics
Research Assistant in: Advanced Agent-Robotics Technology Lab
May 2020 | Pittsburgh, PA
Overall GPA: 4.13/4.0

UNIVERSITY OF ILLINOIS, AT URBANA - CHAMPAIGN
College of Engineering
BS in Engineering Mechanics
Minor: Computer Science & Math
Conc. in Computational Mechanics
May 2018 | Urbana, IL
Overall GPA: 3.97 / 4.0

PUBLICATIONS

C.Lin et al., Online Connectivity-aware Dynamic Distribution for HeterogeneousMulti-Robot Systems. In IROS 2020 (Submitted).

C.Lin et al., Attitude Control System Complexity Reduction via Tailored Viscoelastic Damping Co-Design. In 2018 AAS GNC, Breckenridge, CO, Feb 2018.

C.Lin et al., Efficient Optimal Surface Texture Design Using Linearization. In ISSMO 12th World Congress of Structural and Multidisciplinary Optimisation, Braunschweig, Germany, Jun 2017.

SKILLS

PROGRAMMING
Matlab • Python • C++ • ROS
Java • LaTeX • Clojure • C#

COURSEWORK

Motion Planning
Deep RL and Control
Computer Vision
Kinematics, Dynamic Systems, and Control
Virtual Reality

AWARDS

2018 Bronze Tablet (University Honor)
2018 Fred B. Seely Award
2017 Seichi Konzo Memorial Award
2016 Honorable Mention in MCM

WORK EXPERIENCE

UBER ATG Software Engineering Intern
May 2019 – August 2019 | Pittsburgh, PA

- Worked on path optimization in motion planning team
- Designed and implemented path planner V2.0 used in the car currently
- Improved the robustness of the path planner to fix the failure modes. The planning tests that were impossible to solve previously can be passed now

NATIONAL CENTER FOR SUPERCOMPUTING APPLICATIONS
Research Internship
August 2016 – May 2018 | Urbana, IL

- Utilized the entropy change in phase transformation of shape memory alloy as environmental friendly refrigerators
- Classified the shape memory alloys
- Adopted various optimization algorithms, fitting methods, and Ising model simulation to find the most efficient alloy composition with Python

ACADEMIC PROJECTS

MOTION PLANNING COURSE | "Guided RRT-Connect"
August 2019 – December 2019 | Carnegie Mellon University

- Applied Multi-armed Bandits and Reinforcement Learning (DDPG) to improve the efficiency of RRT-Connect
- Compared the performance of both methods with the original RRT-Connect numerically and in simulation

COMPUTER VISION COURSE
August 2018 – December 2018 | Carnegie Mellon University

- Extracted features using traditional Bag of Words method and pre-trained deep network
- Collected interest points and matched points, with which 3D models can be reconstructed and objects can be tracked with Lucas-Kanade method

ARTIFICIAL INTELLIGENCE COURSE
August 2017 – December 2017 | University of Illinois, at Urbana - Champaign

- Applied BFS, DFS, greedy, and A* to solve mazes and constraint satisfaction problems (CSP)
- Classified data with Naive Bayes and reinforcement learning
- Implemented single-player and two-player Pong games with Q-learning

RESEARCH EXPERIENCE

MOTION PLANNING FOR MULTI-ROBOT SYSTEMS
Advised by Prof. Katia Sycara
September 2018 – May 2020 | Carnegie Mellon University

- Studied motion and behavior planning problems for multi-robot and swarm systems with various graph and tree searching methods
- Generating plans that restrict the risk of energy depletion while guaranteeing the targets' visitations
- Developed a novel connectivity-aware multi-robot redistribution approach that accounts for exploration, dynamic task allocation, and connectivity maintenance for a heterogeneous robot team
- Simulated the planning results on RVIZ and Gazebo ROS