Zhexin Shen

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EDUCATION

Department of Physics and Materials, East China Normal University (ECNU), Shanghai, China Sep 2017 - Present
Bachelor of Science in Physics (expected in 07/2021) Major GPA: 86/100 (Ranking top 15%)
Elite Class of Physics – thirty students selected from all admitted students entering in 2017
Core Courses: Methods of Mathematical Physics (A+), College Mathematics I (99/100 A), College Mathematics II (95/100 A), Linear Algebra (97/100 A), Computer Language and Programming in C (94/100 A), Chaotic Dynamics Foundation and Its Applications in Brain Functions (92/100 A-), Fundamentals of Algorithm and Program Design in Python, Analysis
School of Physics and Astronomy, Shanghai Jiao Tong University (SJTU), Shanghai, China Jan 2019 – Jun 2019
Exchange Student Program, only 3 students selected from Department of Physics and Materials, East China Normal University
Computational Physics (A-), Quantum Mechanics, Electrodynamics

TOEFL: Total 108/120 (Reading 29, Listening 29, Speaking 23, Writing 27)

RESEARCH EXPERIENCES

Proficiency Aware for Mixed Aerial and Ground Robot Teaming | Kent State University | Summer Intern Jul 2019 – Sep 2019
Advisor: Rui Liu, Assistant Professor at College of Aeronautics and Engineering, Kent State University

- Proposed a proficiency aware MADRL method to exploit the potential of a mixed aerial-ground team
- Developed a reinforcement learning-based mixed aerial and ground robots cooperation framework with dynamic decision-making models
- Designed a simulator integrated with different vehicle models and multiple scenarios which simplifies controlling of different vehicles [Lab] [Paper]

Simulating Collective Motion with Kilobots | Shanghai Jiao Tong University | Research Assistant Jan 2019 - Present
Advisor: Hepeng Zhang, Professor at School of Physics and Astronomy, Shanghai Jiao Tong University

- Used kilobots to simulate fluid-related phenomena across scales from micrometers to kilometers
- Designed kilobots having "phototaxis"
- Used screen to display moving light-spots which allows kilobots to follow them
- Coded to processes the positions and velocities data and controls kilobots by moving light-spots.
- Studied the pattern of kilobots under specific conditions such as moving light waves, corrugated channels, and asymmetric gears. [Lab]

Satellite Laser Ranging | East China Normal University | Research Assistant Oct 2018 – Oct 2019
Advisor: Guang Wu, Researcher at State Key Laboratory of Precision Spectroscopy, East China Normal University

- Researched and applied coincidence photon-counting laser ranging technique on drawing trajectory of a satellite
- Drew trajectories of several satellites
- Designed an algorithm that distinguishes signals from noises and controls the emitter's direction to follow the satellite

LEADERSHIP AND ACTIVITIES

STEM Program | Cambridge Innovation Center &MIT, Media Lab | Participant Jul 2018 - Aug 2018

- Developed STEM skills
- Presented a final project applying STEM to an entrepreneurial and innovative new venture
- Visited the City Science Research Group at MIT Media Lab

SKILLS

ROS & Gazebo Numerical Analysis

Deep Learning with Python (PyTorch), Matlab

Programming Languages: C, Matlab, python Office Applications: Latex (Overleaf), Microsoft Office, Solidworks, ANSYS,