

# Wenjie Lin

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## EDUCATION

**Columbia University** M.S. in Mechanical Engineering (Robotics and Control), GPA: 3.67/4.0 Sept. 2021-Dec. 2022

- Coursework: Robotics Studio, Artificial Intelligence, Reinforcement Learning, Robot Learning, Evolutionary Algorithm, Introduction to Robotics, Data Science for Mechanical Systems, Digital Signal Processing, Modern Control Theory, Digital Control

**University of Science and Technology Beijing (USTB)** B.E. in Safety Engineering, GPA: 3.75/4.0 Aug. 2016-June. 2020

**UC Berkeley/UCLA Exchange Program** in Mechanical Engineering, GPA: 3.91/4.0, 3.85/4.0 Jan. 2019-Aug. 2019

- Relevant Undergraduate Coursework: Dynamic System and Feedback, Creative Robot Design and Production, Intelligent Control Theory, Mechanical Design, Mechanical Vibration, Elementary Fluid Mechanics, Thermophysics for Applications, Solid Mechanics

## PUBLICATIONS AND PROFESSIONAL ACTIVITIES

### Publications

- Lin, Wenjie. **Deep Reinforcement Learning based Haptic Enhancement for Tele-Diagnosis**. In *FUZZ-IEEE. WCCI*, 2022 (Oral)
- Yang, Zhiyuan, Lin Li, Hao Yuan, Yuhao Dong, Kunniang Liu, Lan Lan, Wenjie Lin et al. **Evaluation of Smart Energy Management Systems and Novel UV-Oriented Solution for Integration, Resilience, Inclusiveness and Sustainability**. In *IEEE International Conference on Universal Village (UV)*. 2020

### Reviewer for Conferences

- IEEE International Conference on Universal Village (UV)

## RESEARCH EXPERIENCE

**Vogelsberger Group: CSGF, MIT** (With PI: Prof. Mark Vogelsberger) Sept. 2022-present

- Involving in the simulation and prediction of the splashback boundary of haloes using IllustrisTNG and machine learning.

**Human Robotics, Imperial College London** (With Dr. Ziwei Wang) Sept. 2021-Feb. 2022

- Proposed a deep RL-based haptic enhancement framework to facilitate remote palpation without installing force sensors on telesurgery robot.
- Lead-authored the paper “**Deep Reinforcement Learning based Haptic Enhancement for Tele-Diagnosis**” published on WCCI, 2022.

**Robotics And Rehabilitation (RoAR) Lab, Columbia University** (With Xupeng Ai, PI: Prof. Sunil Agrawal) Feb. 2022-May. 2022

- Developed two methods (audio and brightness) for synchronizing multi-view physical-therapy videos for physiologists to analyze the effect of rehabilitation for children with cerebral palsy.
- Improved the algorithms and minimized the error for audio method to 50ms and for brightness to 500ms.
- Proposed a systematic solution to multi-view videos synchronization for rehabilitation analysis including deep learning method.

**Universal Village Society, MIT** (With PI: Dr. Yajun Fang) May. 2019-present

- Constructed a preliminary system connecting energy system with other subsystems, by finding out and analyzing interaction factors of subsystems
- Co-authored the paper “**Evaluation of Energy Systems and Novel UV-Oriented Solution for Integration, Resilience, Inclusiveness & Sustainability**” published on IEEE, the 5th International Conference on Universal Village.
- Working paper: “**Primary Hyperhidrosis: A Review of Current Diagnosis and Management and Potential Engineering and Social Interventions**”, Wenjie Lin, Yajun Fang. Target Conference: IEEE-UV 2022.

## SELECTED PROJECTS

- **Birdman and LarvaBot** (MECE4611 Robotics Studio Instructed by Prof. Hod Lipson) [\[Video\]](#)
- **OctopusBot** (MECS4510 Evolutionary Computation and Design Automation Instructed by Prof. Hod Lipson) [\[Video\]](#)
- **Boxing Robot** (MECE4602 Intro to Robotics Instructed by Prof. Sunil Agrawal) [\[Video\]](#)
- **Mecanum Wheel-based Intelligent Board Eraser** (College Student Research Project of USTB)

## HONORS AND AWARDS

Outstanding Graduate of USTB Jun. 2020

The People's Scholarship of China Oct. 2019

## SKILLSET AND INTERESTS

Language & Tools: C++/C, Python, MATLAB, CAD, ROS, Gazebo/Pybullet, PyTorch/TensorFlow, Adobe PR/AE/PS

Academic Interests: Robotics and Control, UAV, Machine Learning, Computer Vision, Safe Reinforcement learning, SLAM

Hobbies: Wake Surfing, Tennis, Basketball, Reading, Guitar, Singing