Wenjie Lin

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EDUCATION

Purdue University Ph.D. Student in Computer and Information Technology, GPA: 3.81/4 Aug. 2023-May. 2028

- Coursework: ECE695 Generative Model, ECE60146 Deep Learning, ECE695 Optimization for Deep Learning, CS501 Computing for Science and Engineering, CNIT 581 Machine Learning for Smart Sensing, CNIT 625 Research Methods for Computing, CNIT 699 Research PhD Thesis

Columbia University M.S. in Mechanical Engineering (Robotics and Control), GPA: 3.67/4 Sept. 2021-Dec. 2022

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

University of Science and Technology Beijing (USTB) B.E. in Safety Engineering, GPA: 3.75/4 Aug. 2016-June. 2020

UC Berkeley/UCLA Exchange Program in Mechanical Engineering, GPA: 3.91/4.0, 3.85/4 Jan. 2019-Aug. 2019

PUBLICATIONS

- **Wenjie Lin,** Jin Wei-Kocsis. **Think, Reflect, Create: Metacognitive Learning for Zero-Shot Robotic Planning with LLMs.** [arXiv]
- **Wenjie Lin,** Chih-you Chen, Sudip Vhaduri, Chad Laux**. Risks of Health-Tracking Wearable Data Leak.** Under Review by ACM TMIS
- **Wenjie Lin,** Xingyu Li. **GRASNet: A Novel Graph Neural Network for Improving Human Action Recognition and Well-Being Assessment in Smart Manufacturing.** ***Manufacturing Letters,*** **2024.** ***NAMRC 52 (*****Oral)**
- **Wenjie Lin**, Yajun Fang. **Primary Hyperhidrosis: A Systematic Review of Current Status and Potential Interventions.** ***IEEE-UV,*** **2022.**
- **Lin, Wenjie**. **Deep Reinforcement Learning based Haptic Enhancement for Tele-Diagnosis**. ***FUZZ-IEEE. WCCI*****, 2022 (Oral)**

RESEARCH EXPERIENCE

Onsite Research: Metacognitive Learning for Efficient and Creative Robotic Planning with LLMs Jan. 2025-May. 2025

Advisor: Prof. Jin Wei-Kocsis, Cyber-Physical-Social Systems Design Lab, Purdue University

- Proposed a metacognitive learning framework that enables LLM-powered multi-robot systems to reason, reflect, and create in zero-shot robotic planning.
- Demonstrated significant improvements over baselines on the RoCo benchmark, achieving higher task success rates and creative task solutions.

Onsite Research: Deep Learning-based Demographic Prediction Using Leaked Wearable Data Aug. 2024-Oct. 2024

Advisor: Prof. Sudip Vhaduri, mAI lab, Purdue University

- Preficted Five demographic attributes (ethinicity, gender, age, height, and weight) with high accuracies using wearable data.
- Provided insights into the impact of device configurations and highlighted the potential privacy and security risks of leaked wearable data.

Onsite Research: Multi-View Videos Synchronization Feb. 2022-May. 2022

Advisor: Prof. Sunil Agrawal, Robotics and Rehabilitation (RoAR) Lab, Columbia University

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

Remote Research: Deep Reinforcement Learning-based Haptic Enhancement Framework Sept. 2021-Feb. 2022

Advisor: Dr. Ziwei Wang, Human Robotics, Imperial College London

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

Projects

- **Medical Image Classification Using Deep Learning for Alzheimer’s Detection (Instructed by Prof. John Wright)** [PDF]
  Achieved classification of Alzheimer’s Disease with magnetic resonance images and compared two CNN-based models (Python, Deep Learning)
- **Birdman and LarvaBot (Instructed by Prof. Hod Lipson, Columbia University)** [PDF] [Video]
  Mechatronic design and production of bipedal robot “Birdman” and soft robot “LarvaBot” (3D Printing, Gait Optimization using Pybullet)
- **Boxing Robot (Instructed by Prof. Sunil Agrawal, Columbia University)** [PDF] [Video]
  Achieved 3D pose reconstruction of boxing motion captured by markless optical cameras based on deep learning and control algorithms (MATLAB, Deep Learning, PID Control)

HONORS AND AWARDS

Employee Recognition Award for Departmental Achievements (Purdue University) March. 2024

Presidential Doctoral Excellence Fellowship (Purdue University) Aug. 2023

Outstanding Undergraduate of USTB / The People’s Scholarship of China June. 2020 / Oct. 2019

SKILLSET:

C++/C, Python, MATLAB, PyTorch/TensorFlow, CAD, ROS, Gazebo/Pybullet, Arduino/Raspberry Pi