Jierui Li

3246 Kennett Sq., Pittsburgh, PA 15213
(412) 559-4901
jieruili@andrew.cmu.edu

EDUCATION

Carnegie Mellon University, **Pittsburgh, PA**   **Aug 2023 – Present**
Carnegie Institute of Technology
- MS in Mechanical Engineering – Research, Robotics and Control Concentration | GPA: 4.0/4.0

University of Pittsburgh, **Pittsburgh, PA**   **Aug 2021 – Apr 2023**
Swanson School of Engineering
- BS in Mechanical Engineering | GPA: 3.901/4.0
   Honor: Summa Cum Laude

Sichuan University, **Chengdu, China**   **Sep 2019 – Jun 2021**
Sichuan University - Pittsburgh Institute
- BE in Mechanical Engineering | GPA: 3.51/4.0

RESEARCH

Material Grade-Based Task Planning for Robotic Limestone Mining   **Sep 2023 – Present**
Research Assistant in Computational Engineering & Robotics Lab, Carnegie Mellon University
- Design and deploy advanced algorithms to optimize digging point selection and mining vehicle routing, maximizing ore collection efficiency through reinforcement learning techniques
- Engineer Monte Carlo Tree Search and decoder-only Transformer-based framework to optimize ore grade selection and minimize transportation costs
- Strategically engineer reward functions and model architectures to target 90-95% optimal solution efficiency, while significantly reducing computational search times

Examine Fatigue Effect on Properties of Soft Materials   **Sep 2022 – Jan 2023**
Research Assistant in Prof. Qihan Liu's group, University of Pittsburgh
- Teamed with Soft Materials Mechanics and Manufacturing Lab, conducted fatigue tests on hydrogels at varied stretch frequencies to gather performance data
- Employed MATLAB to analyze thousands of data sets gathered and calculated fracture energy and energy release rate of hydrogel
- Visualized and analyzed relationship between crack propagation speed and tensile frequency

Design and Assembly of Hydrogel Fatigue Tester   **May 2022 – Sep 2022**
Research Assistant in Prof. Qihan Liu's group, University of Pittsburgh
- Developed fatigue tester with linear movement engine instead of standard circular movement engine for pulling material up and down to stretch and compress it
- Responsible for designing transmission structure and stress calculation
- Assembled and examined tester to minimize impact of manual errors on measurement results

WORK EXPERIENCE

Carnegie Mellon University, **Pittsburgh, PA**   **Aug 2024 – Present**
Teaching Assistant for Artificial Intelligence and Machine Learning Course
- Grade assignments and code submissions
- Address student questions regarding assignments

ENN Energy Holdings Limited, **Langfang, China**   **Jul 2023 – Aug 2023**
Assistant Test Engineer Intern
- Calculated rotor imbalance and imbalance mass under various balance grades based on collected data
- Investigated vibration spectrum analysis of micro gas turbine core engine using collected vibration data

SKILLS

- 3D Modelling: SOLIDWORKS, CATIA, Ansys
- Programming: Python, MATLAB, C/C++, Java
- Framework: PyTorch, Numpy, OpenCV, Scikit-learn