Jinxin (Ricardo) Li

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EDUCATION

Stanford University, Stanford, CA Expected May 2025
Master of Science in Mechanical Engineering
University of Michigan, Ann Arbor, MI Graduated April 2023
Bachelor of Science in Mechanical Engineering GPA: 3.947
Minor: Physics
Awards: Dean's List (2020−2023), University Honors (2020-2023), James B. Angel Scholar (2022-2023)
Relevant Courses: Design & Manufacturing I&II&III, Automatic Control, Modeling and Control of Dynamic Systems, Robot Kinematic and Dynamics, Principles of Robot Autonomy I, Decision Making under Uncertainty, Programming Abstractions

WORK EXPERIENCE

Mechanical Engineering Design and Testing Full-time Intern Jan-May 2020
Robert Bosch LLC, Waltham, MA
- Designed impellers, volutes and housings for coolant pumps of vehicles and tested prototypes on a test stand.
- Conducted aerodynamic/hydrodynamic performance and measurement investigations.
- Improved models which succeeded in meeting our customers' requirements.

ENGINEERING PROJECTS & CLUBS

Wallcart Project in Northeastern Robotic Team: Jan-Dec 2019
- Developed the prototype of the car with propellers.
- Proposed idea of how to place the batteries and Electronic Speed Controller; finished the design in SolidWorks.
- Simulated the speed of propellers needed to generate an appropriate lifting force to allow the car to move from the ground to the wall using MATLAB.

Research experience with Prof. Sun at Northeastern University: Jan-May 2019
- Investigated Domain-aware Deep Learning for Complex System Modeling and Discovery.
- Developed knowledge on more sophisticated studies through three projects.

Research experience with Prof. Nick Hawes at University of Oxford: May-Sep 2021
- Conducted research about the Multi-Agent Travelling Salesman Problem with a research group helped by Prof. Hawes.
- Compared Monte Carlo Algorithm with Simulated Annealing Algorithm (SAA) when solving the mTSP.
- Improved the penalty function in SAA and gathered a better solution which should be close to the optimal path.
- Paper "The Improvement of Simulated Annealing Algorithm on the Penalty Function in Multi-agent Traveling Salesman Problem" is published in ACM digital library https://dl.acm.org/doi/10.1145/3501774.3501795.

Student Software and Mechanical Engineer in Arriver Jan-Dec 2022
- Investigated and reviewed end-user requirements, including literature review, patent searches and stakeholder interviews.
- Designed five functional modes for Arriver vehicle's Human Machine Interface (HMI) using Unity, and each one targeted a specific group of people with accessibility issues.
- Generated screening quiz that assigned people to HMI modes based on their needs.
- Designed and prototyped a vibration device associated with the hearing loss mode; used Arduino to build a control system, which Arduino can communicate with the HMI in Unity.

Research Assistant in Precision Systems Design Laboratory Jun 2022-May 2023
- Conducted the literature reviews on previous upper limb, finger prosthesis, and bird design.
- Designed the mechanical Flex/Extension system for each individual digits of the finger prothesis.
- Designed the elbow system for the condor bird robot.
- Built the control systems for the prosthesis and the bird elbow by using STM32 microcontroller.

Instructional Aide (IA) of Introduction to Solid Mechanics (ME 211) Jan 2022-May 2023
- Held office hours for homework weekly, assisted professor to hold in class discussion section, and held review sections during the exam periods.

Grader of Thermodynamics (ME 235) Sep-Dec 2021
- Provided weekly solutions and graded approximately 70 students' homework.

SKILLS

Applications: Microsoft Excel/Word/PowerPoint, AutoCAD, SolidWorks, MATLAB, C++ Programming, JavaScript, Java, Python