Jiaming Xu

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https://jiamingxu20.github.io/ (For most recent work and publications)

Education

University of Illinois At Urbana-Champaign — Champaign, IL
Bachelor of Science in Electrical Engineering, Minor in Computer Science; GPA: 3.91 — *Jan. 2021 – May 2024*
Deferred enrollment to Spring 2021 due to COVID-19; anticipate to finish in 3.5 years

Experience

Beijing Dingmo Education Technology Co., Ltd. — Beijing, China
Teaching Assistant — *Aug. 2020 – Sep. 2020*

- Assisted teachers in English classes
- Designed Power Points and other course materials for instruction
- Graded homework and exams
- Created advertising photos and videos
- Helped with recruiting interns

Cangzhou General Machinery Co.,Ltd — Cangzhou, China
Mechanical Engineer Intern — *Sep. 2020 – Dec. 2020*

- Designed machine parts with SolidWorks
- Created drawings with AutoCAD
- Worked on machining with lathe
- Created advertising photos and videos
- Worked on company website development

Department Of Electrical And Computer Engineering — Champaign, IL
ECE 329: Fields and Waves I Grader — *Aug. 2023 – Present*

- Assist Professors and Graduate Teaching Assistants in grading homework and exams

Human-Centered Autonomy Lab (HCA) — Champaign, IL
Individual Research Study - Bimanual Robotics Manipulation — *June 2023 – Present*

- Research on imitation learning and bimanual manipulations
- Work on manuscript, anticipated submission by Jan. 2024
- Study and assist faculties in innovating and proposing state-of-the-art algorithms
- Create long-horizon contact-rich, granular objects, and deformable object simulated manipulation tasks
- Collect human demonstration data sets for training purposes
- Design a bimanual SpaceMouse-based teleoperation system for 2 UR5e robots
- Build a kinematically isomorphic teleoperation system from published literature for 2 UR5e robots
- Design several grippers with different functionalities for UR5e robot

Distributed Autonomous Systems Laboratory (DASLab) — Champaign, IL
Undergraduate Research Assistant - Innovative Approach of Crop Height Determination — *May 2023 – Present*

- Research on plant height measurement with ultrasonic sensors and field robots
- Work on manuscript, anticipated submission by Dec. 2023
- Achieve movement of the measuring plate with linear actuator and proximity sensors
- Achieve height measurement and data collection with ultrasonic sensors and Raspberry Pi
- Achieve wireless control over the electronic system via phones or tablets with Arduino and Bluetooth module
- Conduct field test and data collection at both field and green house
- Design and print several parts for the robot and hardware prototyping

Department Of Electrical And Computer Engineering — Champaign, IL
ECE 205: Electrical and Electronic Circuits Grader — *Aug. 2022 – May 2023*

- Assisted Professors and Graduate Teaching Assistants in grading homework and exams

Projects

Battle City Champaign, IL

SystemVerilog, C++, DE10 FPGA *Aug. 2022 – Dec. 2022*

- Designed a two-player PvP version of the Battle City game with keyboard control on the DE10 FPGA board
- Designed players-control tanks, starting from different positions, aiming to destroy opponent's headquarters
- Designed several different functional blocks, including woods, water, brick, and steel
- Achieved dynamic tank movements and bullet firing effects, closely resembling the original game's experience

Reaction Wheel Pendulum Champaign, IL

Control Theory and Design, MATLAB, Simulink *Aug. 2023 – Dec. 2023*

- Conducted mathematical modeling and applied the Lagrangian approach for system analysis
- Implemented and optimized PID control algorithms for friction compensation
- Designed and simulated observer-based control systems, achieving effective stabilization of the inverted pendulum
- Conducted modeling, simulation, and control systems analysis with MATLAB and Simulink

Technical Skills

Programming Languages: Python, C/C++, MATLAB, SystemVerilog, Java
Hardware Prototyping: SolidWorks, 3D Printing, CAD Drawing, Soldering
Tools: ROS, ROS2, Pygame, Pymunk, PyTorch, Git, Simulink, Arduino, Raspberry Pi

Related CourseWorks

ECE 470: Introduction to Robotics
ECE 486: Control System
CS 498: Mobile Robotics for CS