

# Puen Xu

Senior Robotics Engineering Student at WPI

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**Email:** pxu2@wpi.edu

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**Lab:** Unity Hall 150

**Address:** Worcester, MA

**Research Interests**    Aerial Robotics, Dynamics and Control, Data-driven Control, Robot Learning

**Education**                      **Worcester Polytechnic Institute**                      Worcester, MA  
BS in Robotics Engineering, *GPA: 3.95 / 4.00*                      Aug 2020 – May 2024  
Coursework: Unified Robotics I-IV, Robot Dynamics, Robot Control, Software Engineering, Engineering Mathematics, Linear Control, Nonlinear Control

**Honors and Scholarships**                      National Name Exchange, WPI                      2023  
Dean's List (Six times), WPI                      2020 – 2023  
Presidential Scholarship, WPI                      2020

**Research Experience**                      **Medical FUSION Lab, WPI**  
Advisor: Prof. Haichong Zhang                      Jan 2024 – Present  
Interned at the Medical Fusion Lab (Frontier US Imaging & Robotic Instrumentation) to work on developing a novel zero-shot (dataset free) image denoising algorithm for Photoacoustic images.

**HERO Lab, WPI**  
Advisor: Prof. Mahdi Agheli                      Aug 2023 – Present  
Conducted research at the HERO Lab (Horizon Exploratory Robotics) as part of the senior capstone, with the goal of designing and building a robotic manipulator attached to a quadruped robot to allow dynamic loco-manipulation.

**NSF ROSE-HUB Center, WPI**  
Advisor: Prof. Greg Lewin                      Aug 2023 – Dec 2023  
Participated in an NSF-funded ROSE-HUB (Robots & Sensors for Human Well-being) project, aiming to design and build a mobile robot tasked with patrolling power transmission lines to deter ravens from pecking at high-voltage wires.

**Teaching Experience**                      **Student Assistant, Robotics Department, WPI**                      Aug 2023 – Present  
Guided and managed student-led laboratories in core senior-level robotics courses, facilitating the application of classroom knowledge to accomplish complex projects.  
- RBE 3002: Unified Robotics IV - Navigation, B-Term 2023 & D-Term 2024  
- RBE 3001: Unified Robotics III - Manipulation, A-Term 2023 & C-Term 2024

**Peer Tutor, Academic Resources Center, WPI**                      Aug 2023 – Oct 2023

Provided individual peer tutoring to help students to understand materials in lecture and reading in textbooks, master new concepts, and put ideas into perspective.

- ES 2503: Introduction to Dynamic Systems, A-Term 2023

- ES 2501: Introduction to Static Systems, A-Term 2023

**Peer Learning Assistant, Math Department, WPI** Aug 2022 – May 2023

Facilitated weekly discussions for students to reinforce key concepts from the lectures and guided them through selected practice problems.

- MA 2611: Applied Statistics I, B-Term 2022 & D-Term 2023

- MA 1023: Calculus III, C-Term 2023

- MA 2051: Ordinary Differential Equations, A-Term 2022

## **Skills**

### **Robotics**

Software: ROS, Linux, Gazebo, Robot Programming (C++, Python, MATLAB), Optimal Control, Reinforcement Learning, Motion Planning

Hardware: CAD, CAM, CNC Machining, Embedded Systems, PCB Design

### **Languages**

Bilingual in English and Mandarin, Competent in Japanese, French, and Spanish

## **Professional Memberships**

**Tau Beta Pi, MA Alpha Chapter**  
Engineering Honor Society

Apr 2023 – Present