Yixiao Liu

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INTRODUCTION

Senior in Mechanical Engineering at the University of Pennsylvania.

My current interests span **Learning-based control** and **physics simulation**.

Education

🎓 University of Pennsylvania, Philadelphia, USA   Aug 2025 – May 2027 (Expected)

· *M.S.E. in Mechanical Engineering and Applied Mechanics* (Accelerated 3+2 Dual-Degree Program)

🎓 Shanghai Jiao Tong University, Shanghai, China   Aug 2022 – June 2026 (Expected)

· *B.S. in Mechanical Engineering*

Project Experience

Optimal Control for Nonlinear Systems— University of Pennsylvania.   Aug 2025 – Oct 2025

· Implemented Linear Quadratic Regulator (LQR) and Model Predictive Control (MPC) algorithms for nonlinear dynamic systems in Python.
· Designed a trajectory optimization pipeline and evaluated controller performance through simulation.
· Visualized system responses and control inputs.

UR16e Manipulator Simulation — Shanghai Jiao Tong University   March 2025 – Jun 2025

· Modeled a 6-DOF UR16e robotic arm using modified Denavit–Hartenberg parameters.
· Derived and implemented dynamic equations for torque-based control and motion planning.
· Developed and validated control algorithms and trajectory planners in a modular MATLAB/Simulink framework.

Awards

Exchange Scholarship (Tuition Waived)
· University of Pennsylvania
Outstanding Course Project Award
· SJTU ME3220

Skills

Python, MATLAB, C++, Git, PyTorch (basic), Simulink