

## Faculty Candidate Seminar – Physical AI



### Sha Yi

Postdoctoral Scholar  
University of California San Diego

Monday, March 9th, 2026  
Presentation: 10:30 A.M. – 11:30 A.M.  
Q & A: 11:30 A.M. – 12:00 P.M.

WANG 2501

## Learning to Design Robots

**Abstract:** Robots are starting to integrate into manufacturing, healthcare, and our daily lives. However, their development remains largely an iterative and intuition-driven process. Robot structures are typically designed, fabricated, and tested manually, followed by the development of control policies to achieve desired behaviors. This separation between design and control often leads to suboptimal performance and repeated manufacturing iterations. I aim to overcome these challenges with a unified, data-driven co-design framework for robots. Such a framework integrates simulation, optimization, and machine learning to automatically generate and evaluate robot designs, along with their corresponding control policies. With an end-to-end approach, we can not only optimize for single tasks, but also uncover physically intelligent designs that simplify the control problem, enabling robust performance across varying use cases. I will show how this computational approach yields robots that are not only customizable but fundamentally more generalizable than human-designed baselines, paving the way to unlocking capabilities previously thought to be infeasible.

**Bio:** Sha Yi is a Postdoctoral Scholar at the University of California San Diego, co-advised by Xiaolong Wang and Michael T. Tolley. She received her Ph.D. in Robotics from Carnegie Mellon University, where she was advised by Katia Sycara and Zeynep Temel. Her research interests include using computational methods to design and control novel robotic systems. She is a recipient of CMU Presidential Fellowship, MIT EECS Rising Star 2025, and has industry experience with Amazon Robotics, Microsoft, and early-stage startups.

Zoom Meeting: <https://purdue-edu.zoom.us/j/92550320322> - Meeting ID: 925 5032 0322