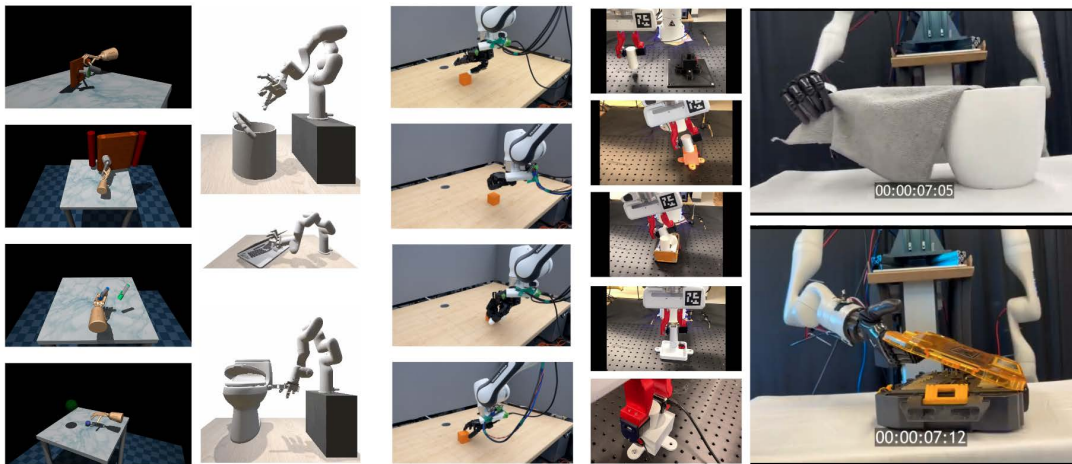


RoboGrads Student Seminar

April 9th, 2026
05:00 PM - 06:00 PM

Venue: 101 Classroom CoC

In-domain Expert-free Dexterity Learning



Recent advances in large-scale robot learning, inspired by progress in NLP and computer vision, suggest that scaling is key to achieving dexterous manipulation. However, despite extensive data collection and pretrained foundation models, robot manipulation systems remain largely limited to settings requiring curated demonstrations and well-resourced lab environments.

A central challenge is the reliance on high-quality, in-domain robot data and expert-designed training pipelines to adapt these models into effective policies. This dependence on curated data and supervision hinders generalization across diverse real-world scenarios, while the resulting policies often lack interpretability and exhibit brittle failure modes.

In this work, we propose a learning framework for robust robot dexterity that enables efficient, transparent policy learning from limited supervision with minimal expert intervention. Our approach emphasizes: (i) task-agnostic, interpretable policy architectures, (ii) self-sufficient training and adaptation, (iii) learning from accessible in-the-wild data, and (iv) integration with general-purpose reasoning modules for reliable in-domain execution. Rather than scaling monolithic generalist models, we advocate for learning lightweight, environment-specific specialist policies that better handle real-world diversity in tasks, objects, and environments.

Speaker



Yunhai Han is a fourth-year Robotics PhD student at Georgia Tech, advised by Prof. Harish Ravichandar. His research focuses on efficient and self-sufficient robot learning from less-privileged data sources (e.g., human manipulation videos). His work has been published at top venues including ICRA, RA-L, and CoRL, where he received two CoRL Oral presentations, as well as a Best Paper Award at NeurIPS Touch Processing Workshop. He is a recipient of the IRIM Robotics Fellowship and a finalist for the Qualcomm Fellowship.



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