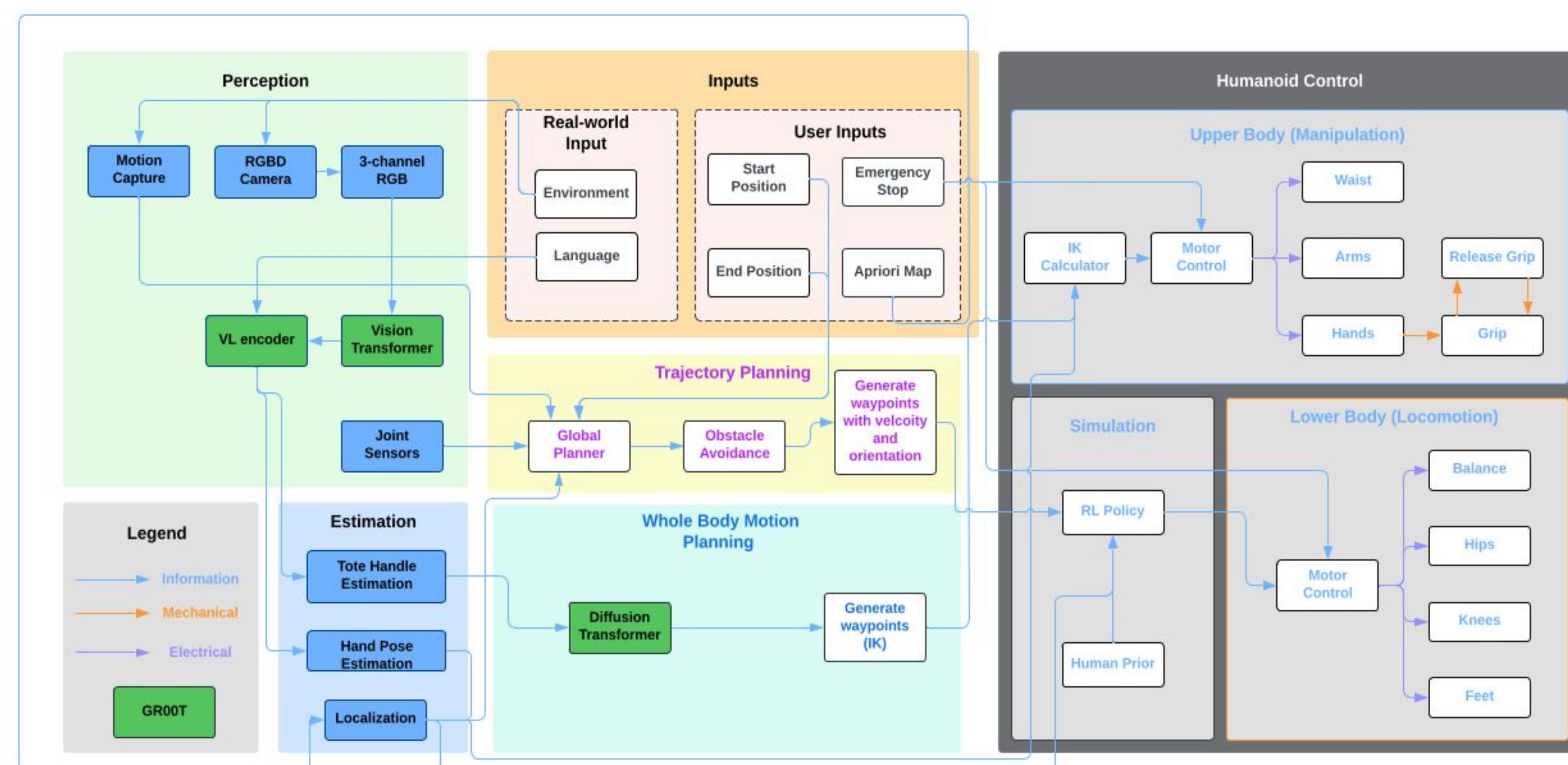


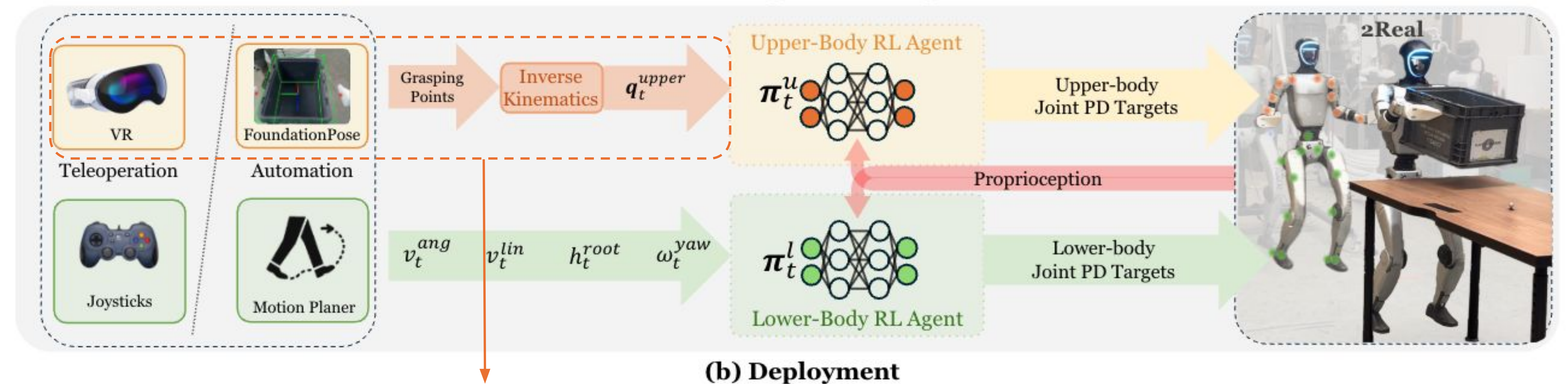
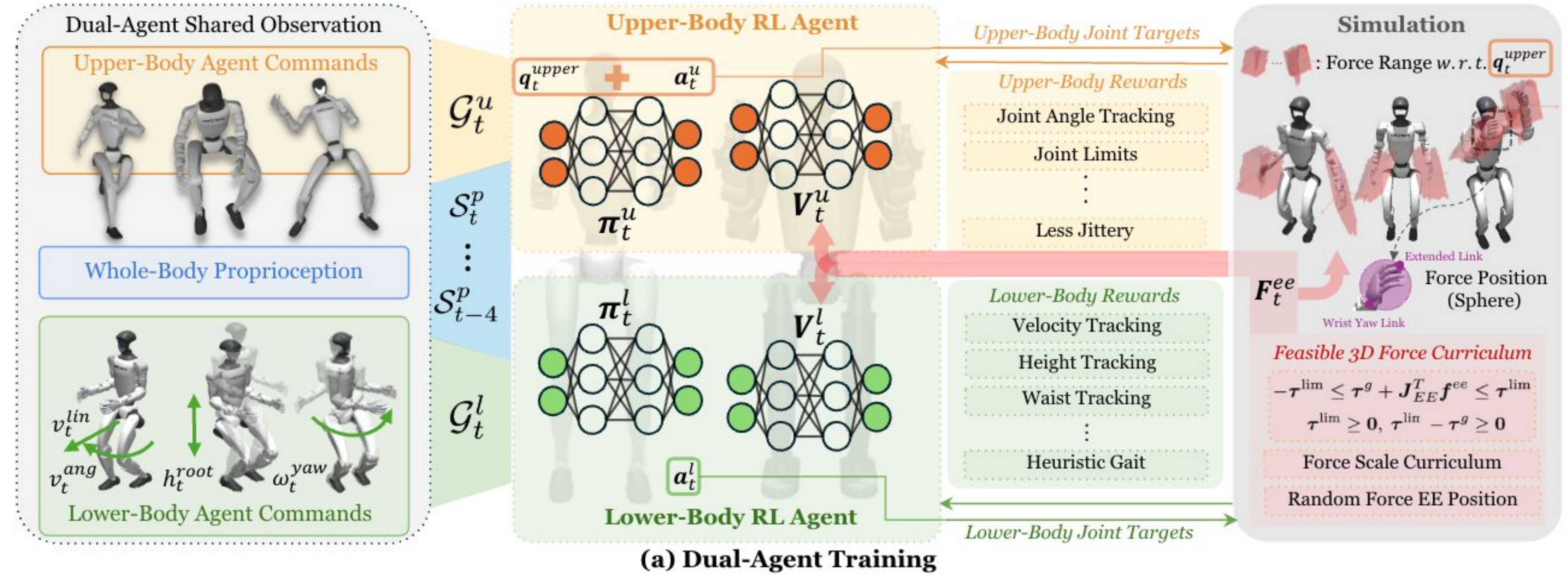
Overview

We develop an end-to-end humanoid loco-manipulation system for tote logistics, enabling a bipedal robot to do locomotion in warehouse-style environments, pick up totes, and place them into target locations autonomously. We build a full-stack pipeline that bridges simulation and real hardware, with the goal of achieving reliable, repeatable performance in factory-like settings

System Design

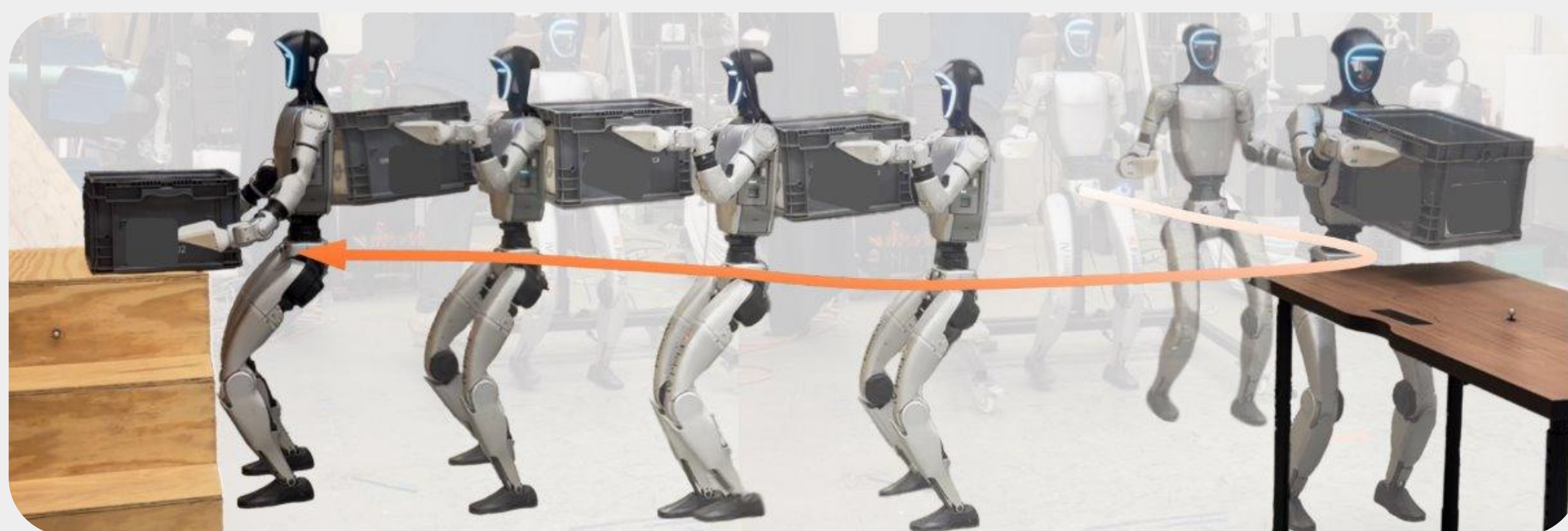


Approach



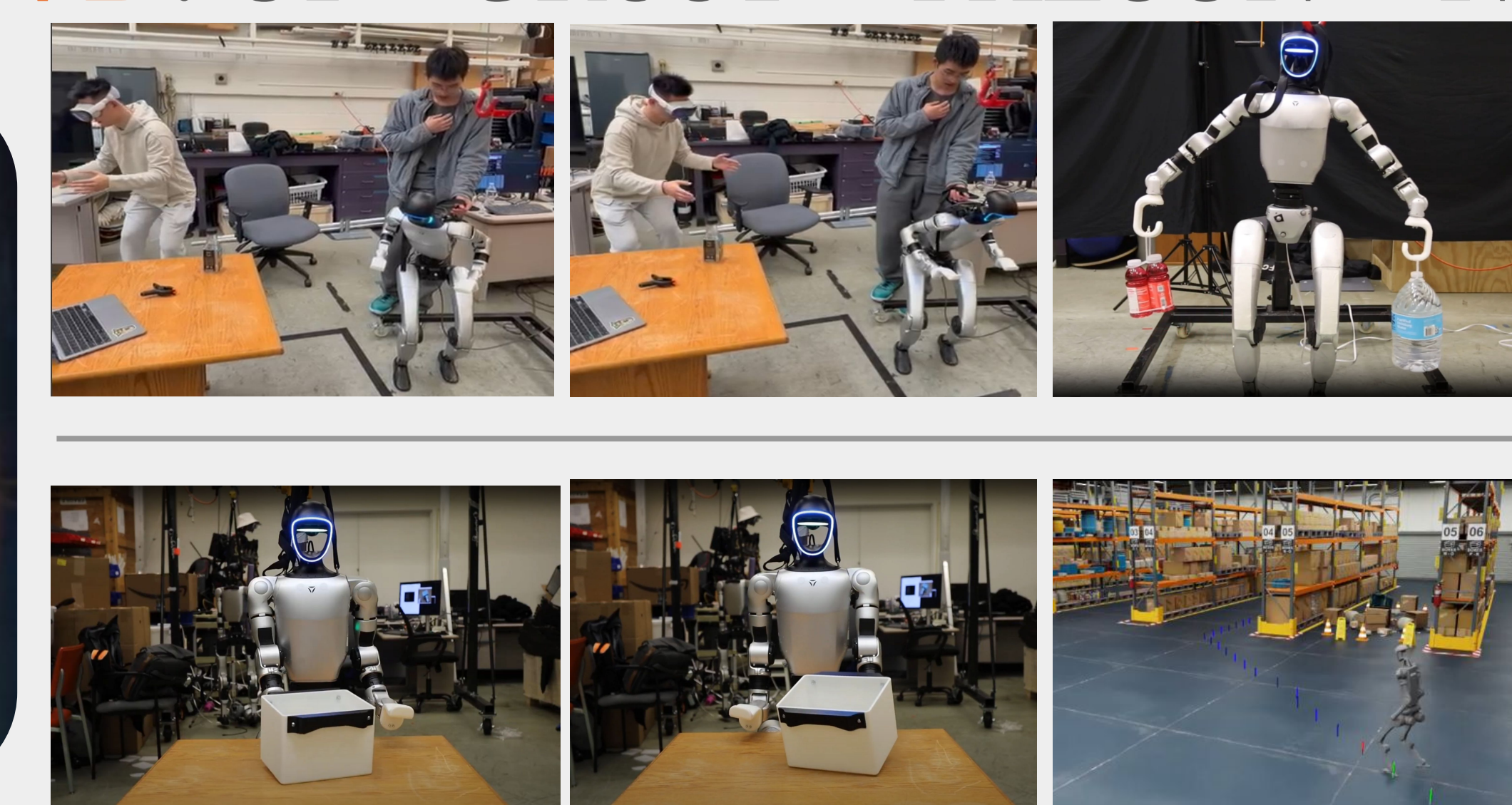
Results

SVD: MoCap + Foundation Pose + Decoupled RL Controller



- **Long Horizon Task:**
 - Pick Up Tote
 - Drop Tote
- **Random Pickup Poses**
- **Random Drop Poses**
- **Success Rate >80%**

FVD: UI + GR00T + FALCON + Navigation



- **VLA-based Manipulation:**
 - End2End: Pixel -> Action
 - Random Tote & Context
 - Recovery from Failure
- **Force Adaptive Control**
- **Whole-Body Teleop**
- **Navigation**
 - Waypoint following Policy
 - Planner integration
 - UI-enabled