



Open world tasks

**Wipe board**

Challenges

force & pose awareness



**Open the door**

articulated objects



**Balance**

fast, reactive

Hierarchical  
formulation

Meta Control

LLM as a  
control expert

Synthesized hierarchical control systems

LQR

Force Pose  
Controller

IK Planning

Stiffness  
Controller

MPC

Force Pose  
Controller