Pretraining Data

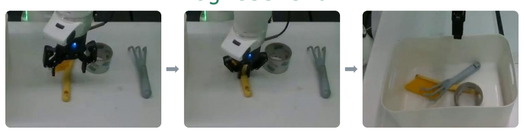
~20,000 h



Real Robot Rollouts

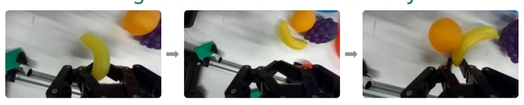
~100K raw records

Progress stall



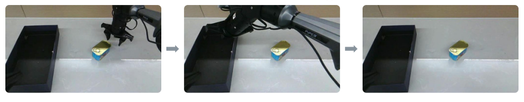
Attempt Retry Collected

Regression and recovery



Held Dropped Regrasped

No further progress



Missed grasp Empty move End

Unrecovered regression



Held Dropped End

Event2Reward

Task-conditioned progress for reward shaping

Task instruction
Visual observations

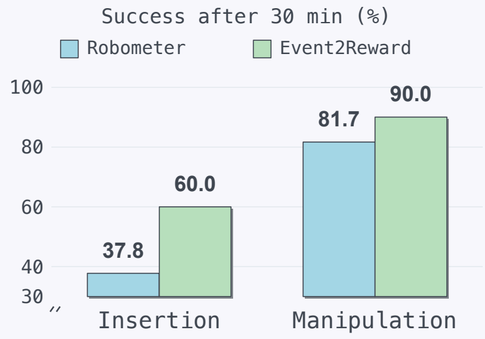
→ **Event2Reward**
Reward model

→ Progress estimates
Rewards for
policy learning

General Performance

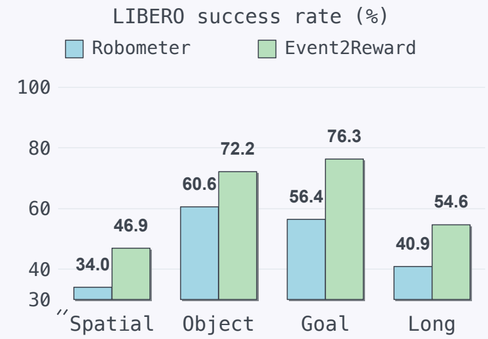
Real-world Performance

Success after 30 min (%)



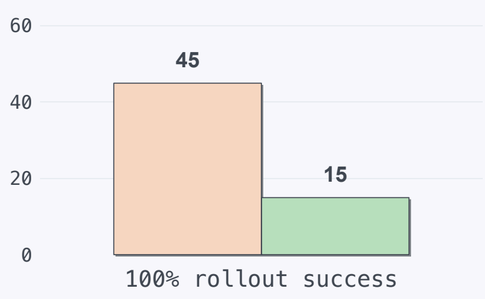
Simulation Performance

LIBERO success rate (%)



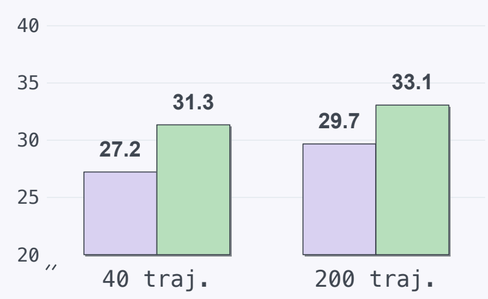
Faster Robot Learning

Plug Insert training time (min)



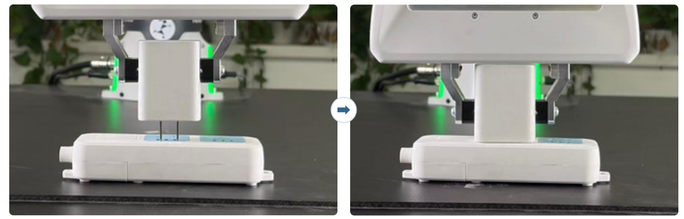
100K Rollout Joint Training

LIBERO-Object RL Eval AUC (%)

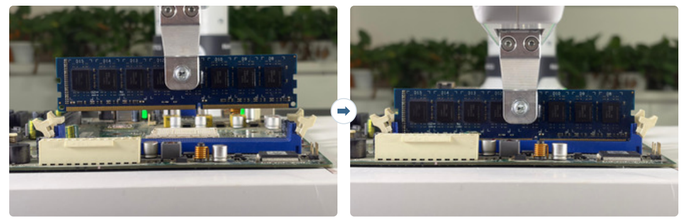


Downstream Tasks

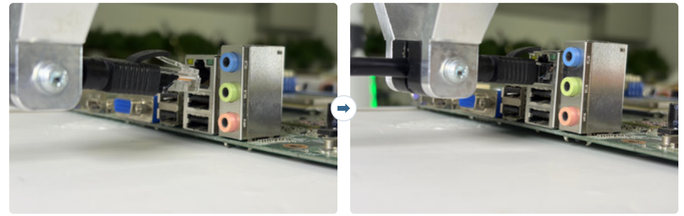
Plug Insert



RAM Insert



Ethernet Insert



Stack Bowls



Press Buttons



Plate Vegetables

