Move the tomato from the cabinet to the counter

Instructor

Keep providing more knowledge

Open gripper, move down a bit and grasp the tomato firmly

The Chain of Thought with Self-Reflect

Realiable?

Reflector | Thinking Process, reflection: | Thinking Process, reflection:

Actively Query via Embedding Retrieval

π_θ **cannot** directly use instructions from VLM/LLM.

Auxiliary Embedding Module ψ_η
$|\eta| \ll |\theta|$

condition$_{0}$,, I_0,
...
condition$_{t-1}$, I_{t-1}
Execution History

$\mathbf{x}_t$ $\phi_{\theta[:n]}$ $D_{\theta[n:]} \rightarrow \hat{a}_t$

$\mathbf{x}_t$ $\phi_{\theta[:n]}$ $D_{\theta[n:]} \rightarrow \hat{a}_t$

$$\pi_\theta = D_{\theta[n:]}(\phi_{\theta[:n]}(\mathbf{x}_t))$$

$$\pi_{\theta,\eta} = D_{\theta[n:]}\left(\phi_{\theta[:n]}(\mathbf{x}_t) \otimes \psi_\eta(I_t)\right)$$

Instructions are informative for π_θ but **imcompatible** with its original architecture.

π_θ is enhanced by the instructions and the task then **correctly** continues to execute.