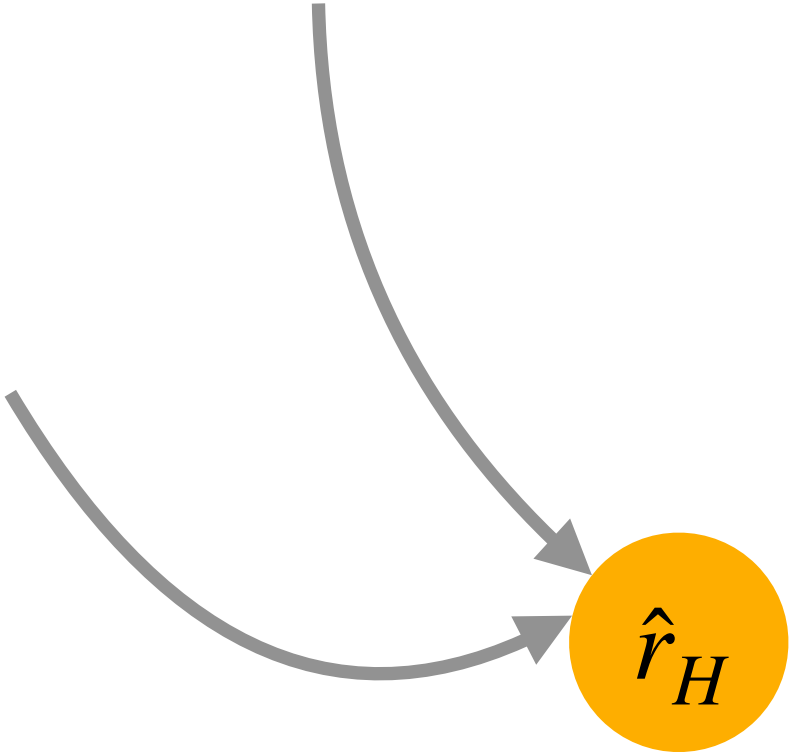
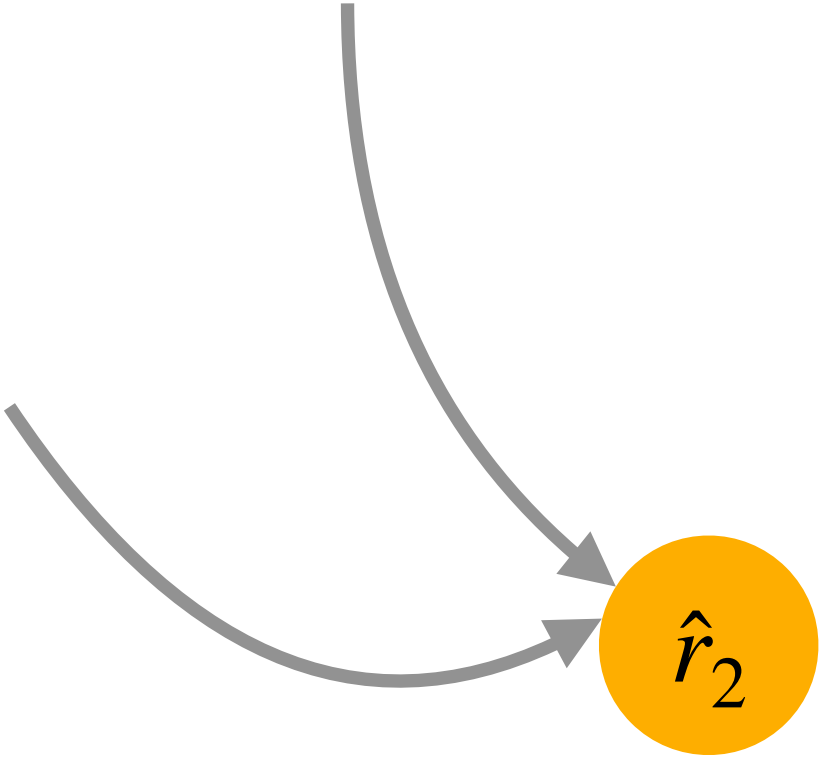


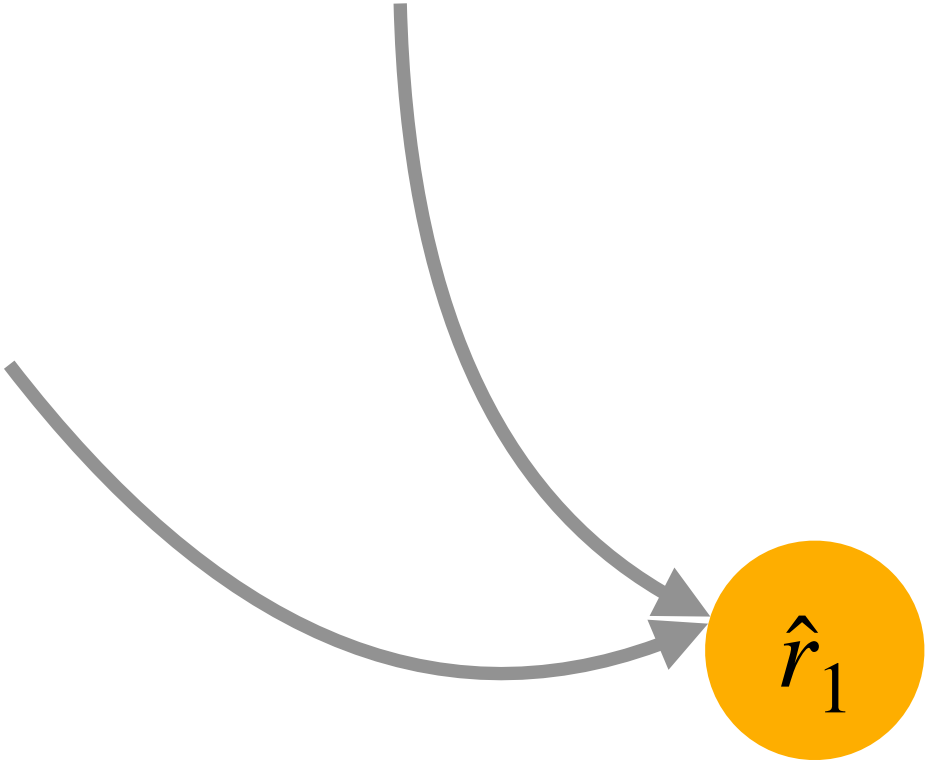


# FCAI

**fcai.fi**















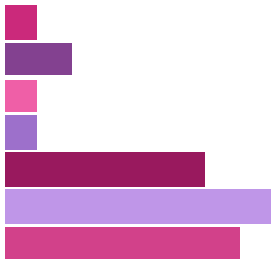








Dynamics



$$p(\mathbf{c}_1 \mid \mathbf{c}_0, \mathbf{a}_0)$$



Dynamics



$$p(\hat{\mathbf{c}}_2 \mid \hat{\mathbf{c}}_1, \mathbf{a}_1)$$



$c_0$



$\hat{c}_1$



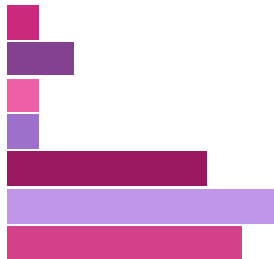




$\hat{\mathbf{c}}_{H-1}$

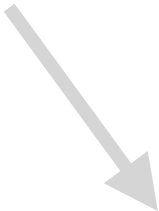


Dynamics

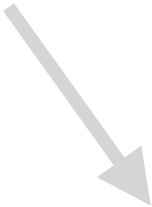


$p(\hat{\mathbf{c}}_H \mid \hat{\mathbf{c}}_{H-1}, \mathbf{a}_{H-1})$

$a_0$



$a_1$



$\mathbf{a}_{H-1}$





$X_H$





$\mathbf{x}_2$



Cross-entropy  
loss





$\mathbf{x}_1$



Cross-entropy  
loss



$\mathbf{x}_0$

# Codebook $\mathcal{C}$

$c^{(1)}$



$c(2)$



$c(3)$



$c(|\mathcal{E}|)$








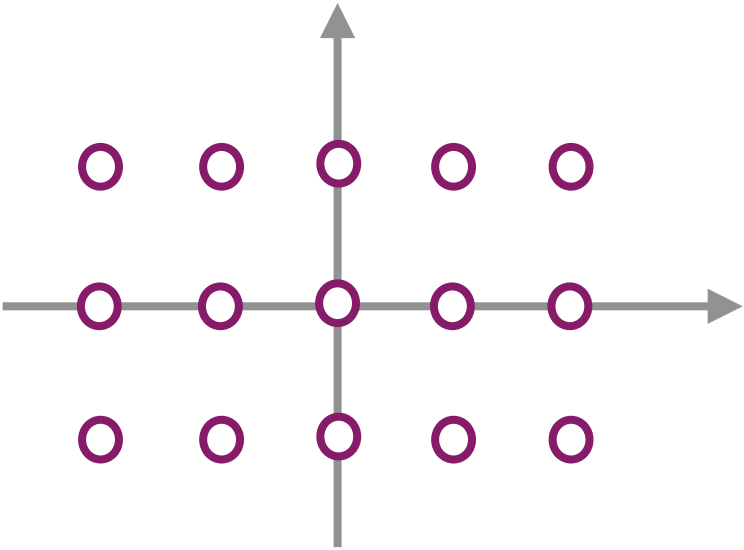
Number of  
channels

$$b = 2$$



Number of  
codes in  
codebook

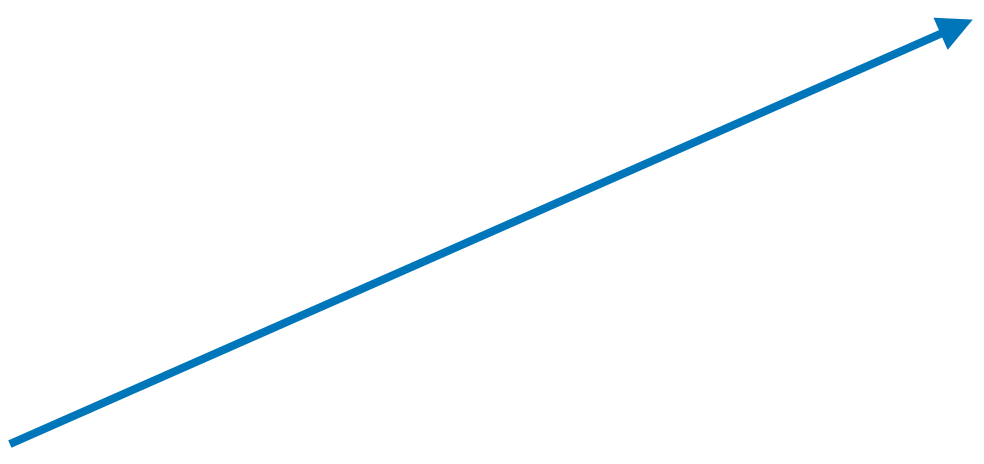
$$|\mathcal{C}| = 15$$





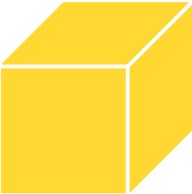














Encoder



Encoder



Encoder



Encoder



$S_H$



$s_2$



$S_1$





$s_0$

DCWinM:WorldModel Training

# FCAI





# Results: Overview

## Strong Performance in DMControl and MetaWorld Manipulation Tasks

