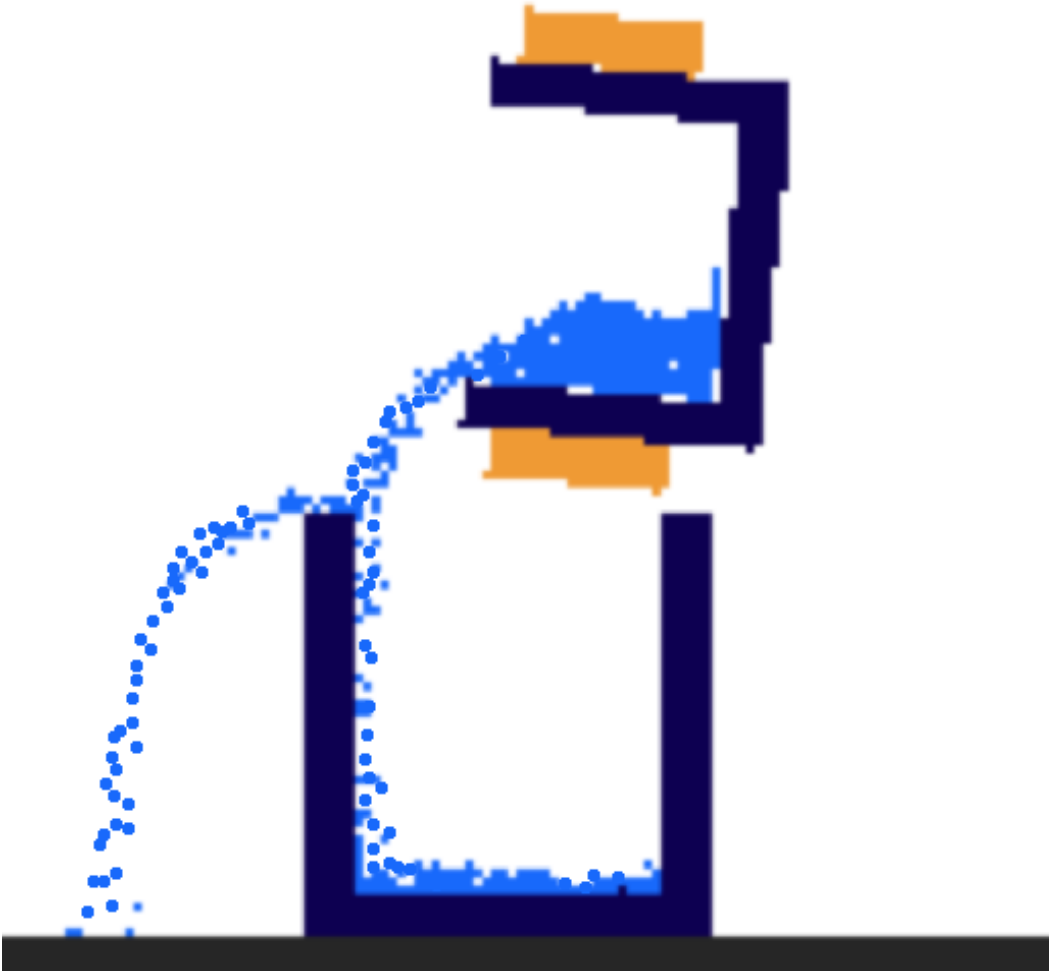
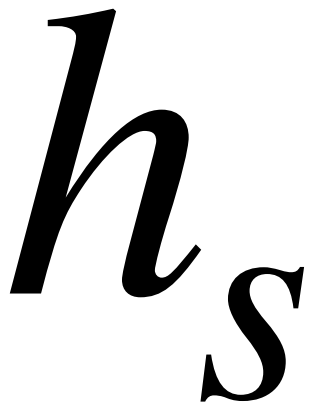
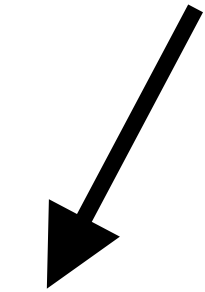
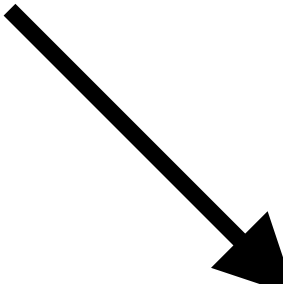
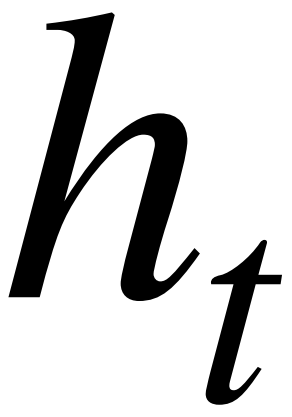




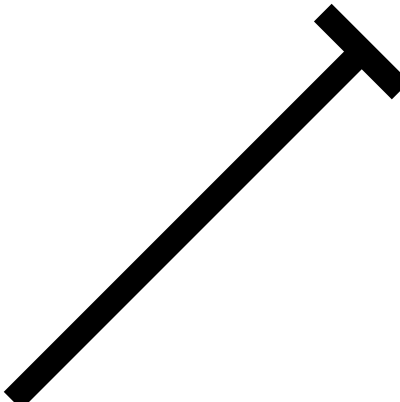


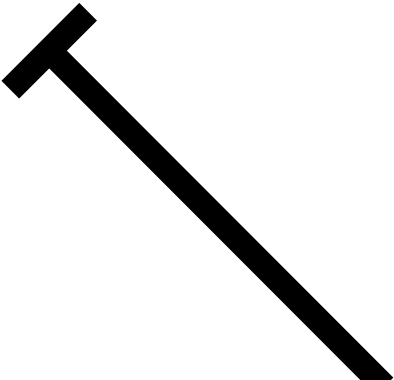




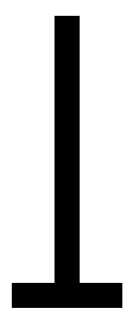
c
grasp

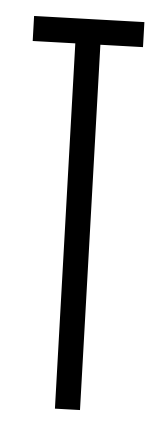
C pour

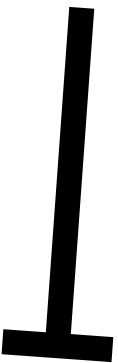




rpose







Zi Wang (MIT CSAIL)

Robot Learning

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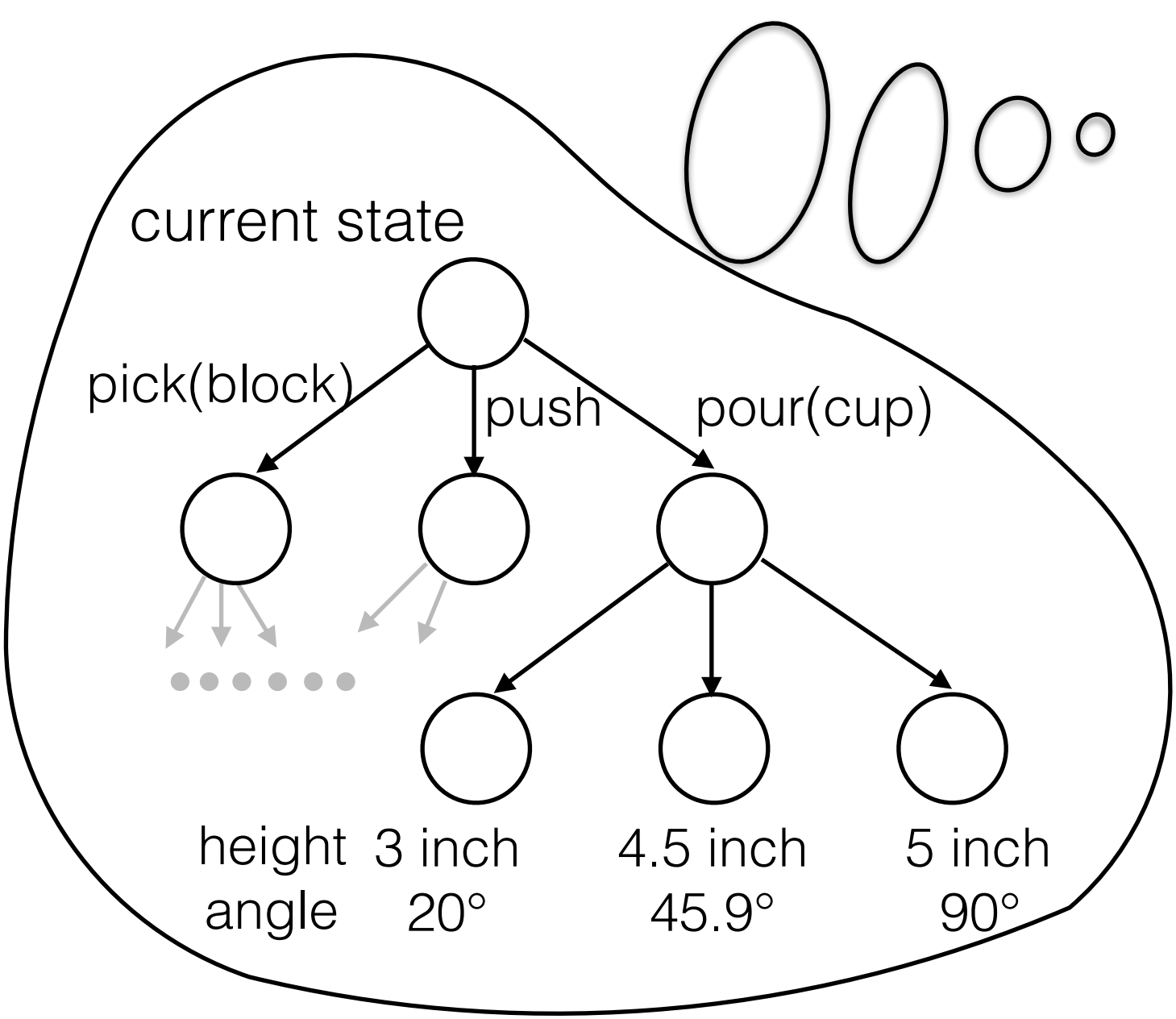
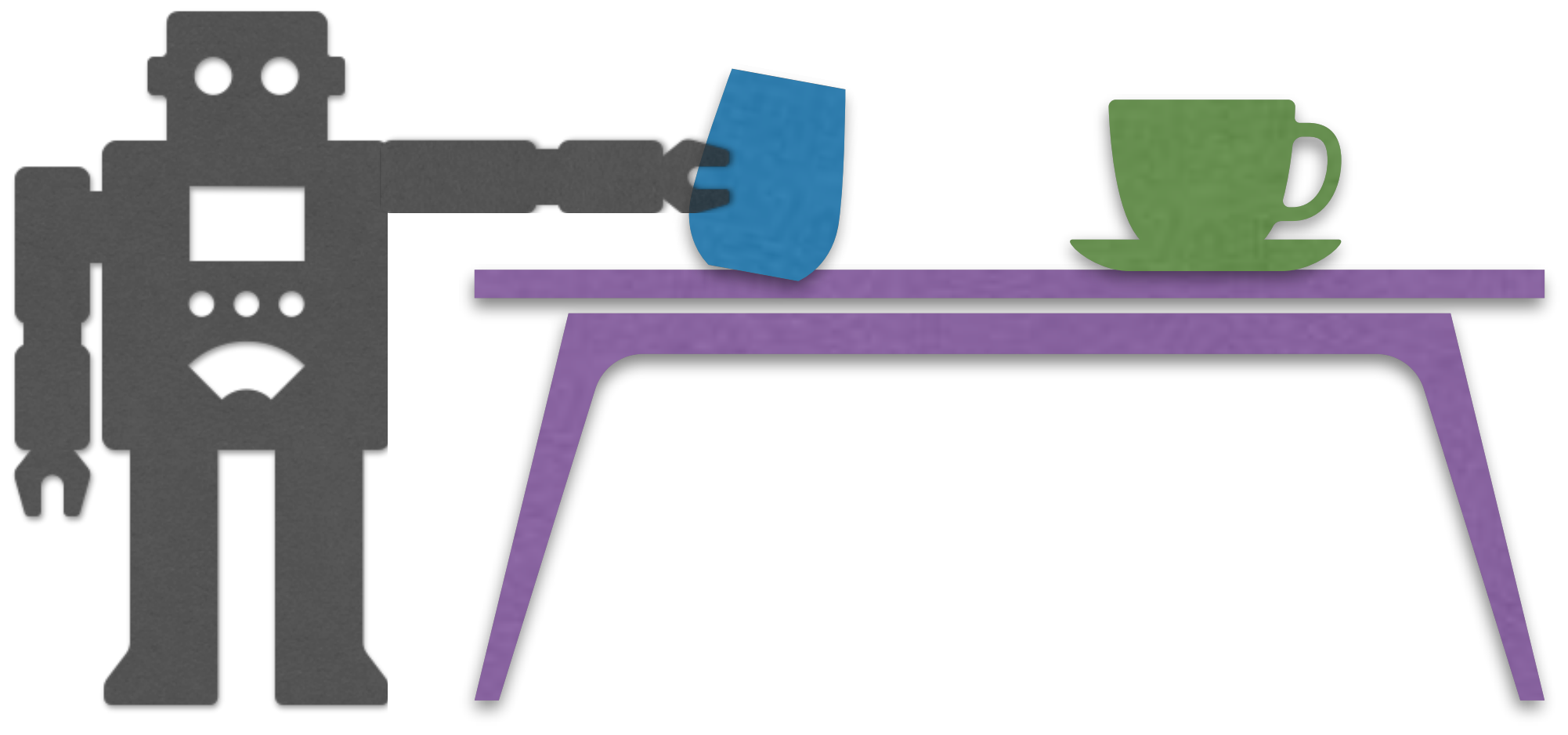
Use learned models of constraints in TAMP


current state
pick(block)
push
pour(cup)
height
angle
3 inch
20°
4.5 inch
45.9°
5 inch
90°



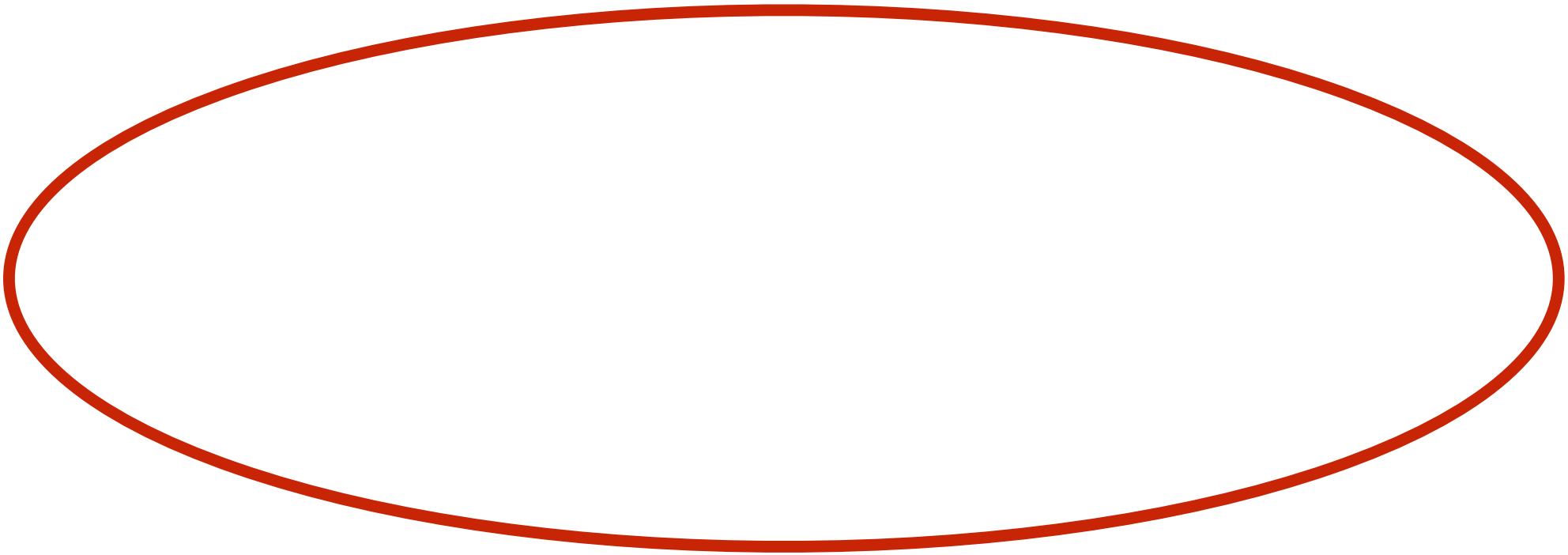
GoodPour( )

$w_s, h_s, w_t, h_t,$

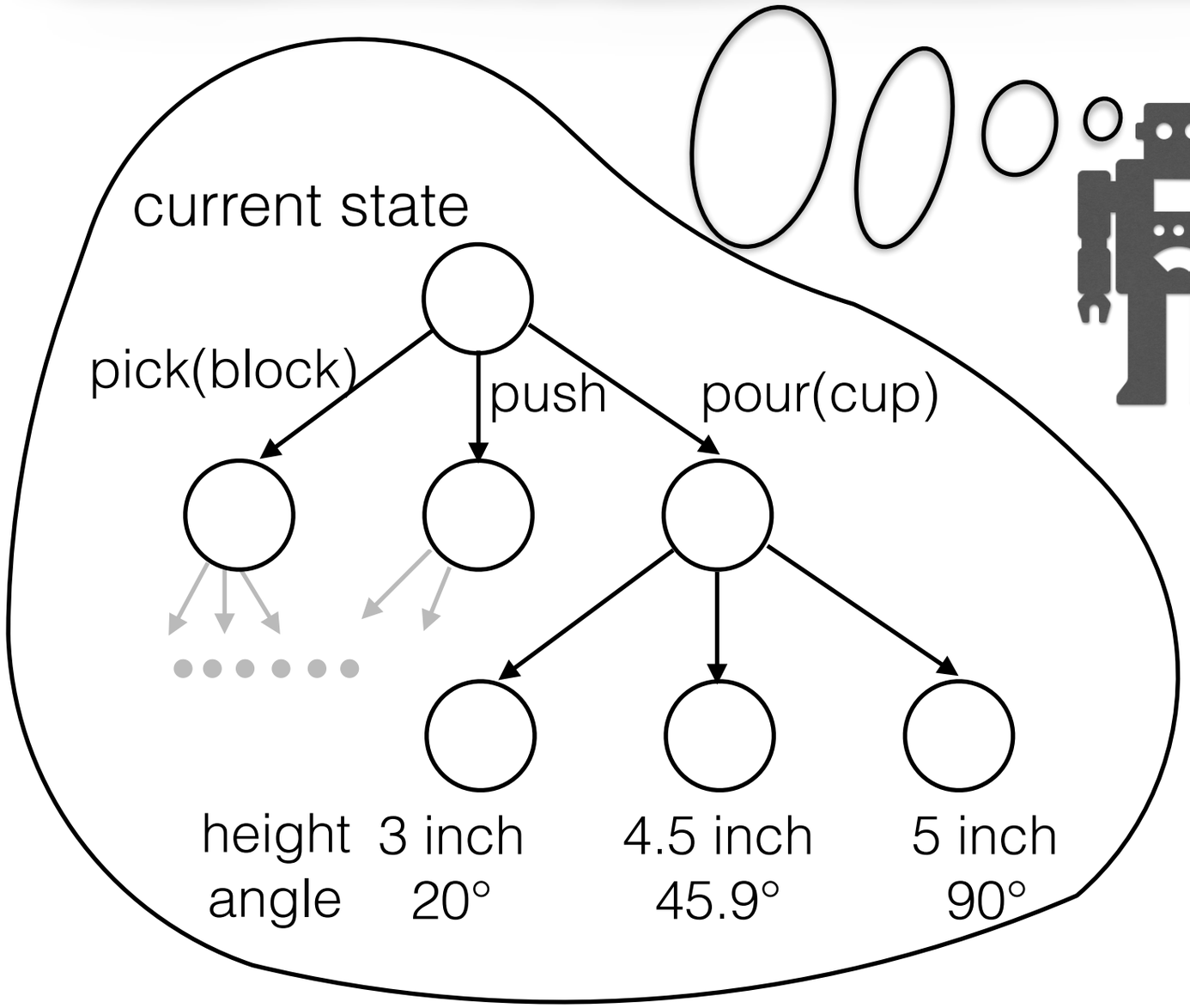
given

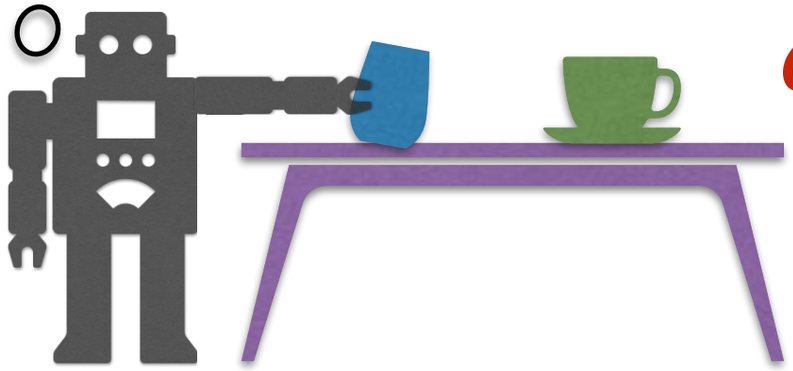
$c_{\text{grasp}}, c_{\text{pour}}, r_{\text{pose}}$

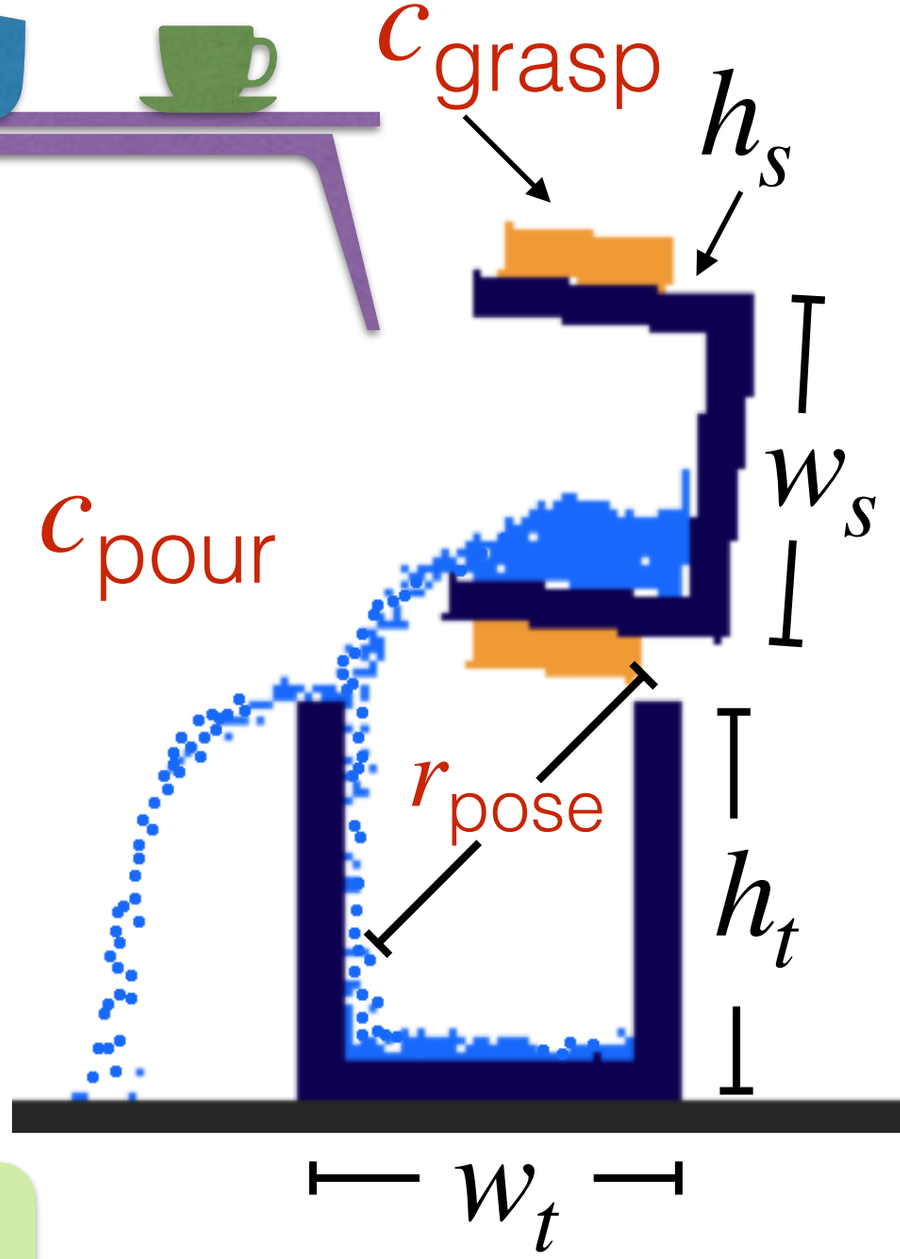
sample



Use learned models of constraints in TAMP







given

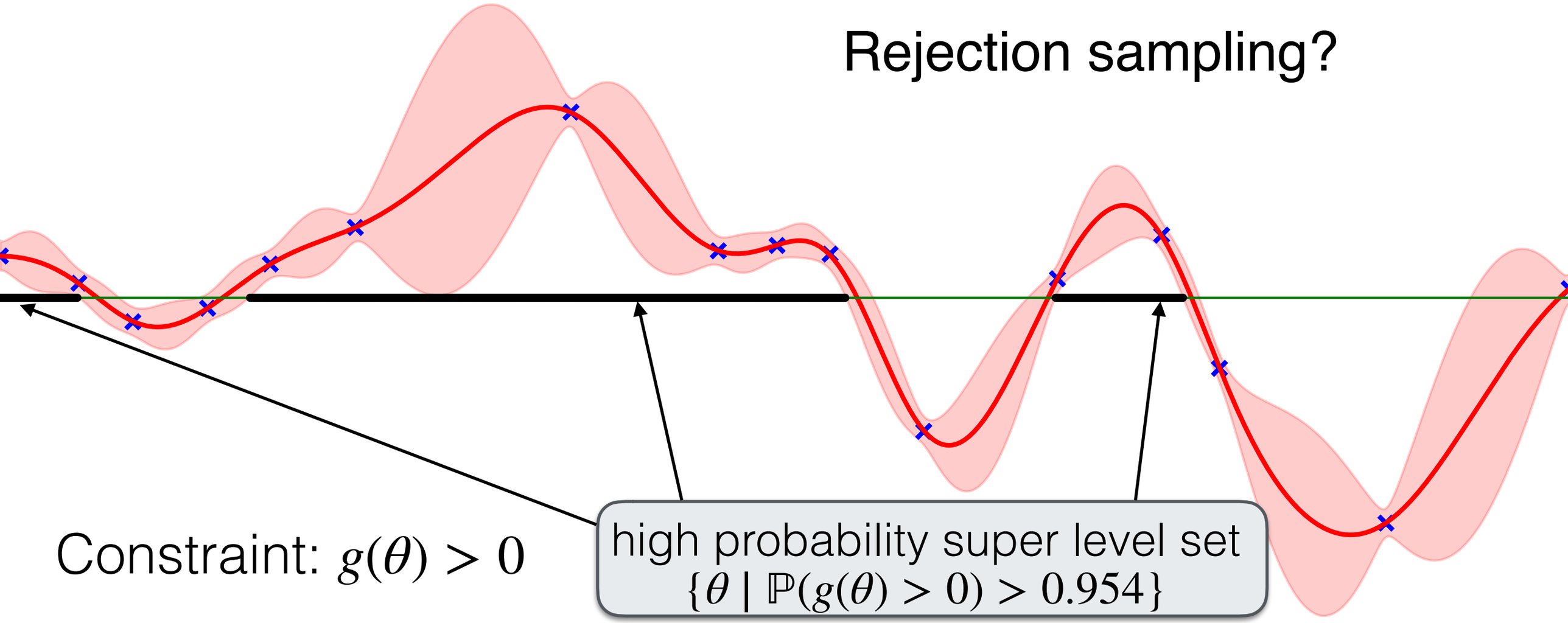
sample

GoodPour($w_s, h_s, w_t, h_t, c_{\text{grasp}}, c_{\text{pour}}, r_{\text{pose}}$)

Sampling from the super level set

mean function $\mu(\theta)$

confidence interval $\mu(\theta) \pm 2\sigma(\theta)$

observation $(\theta_i, g(\theta_i))$

$g(\theta) = 0$