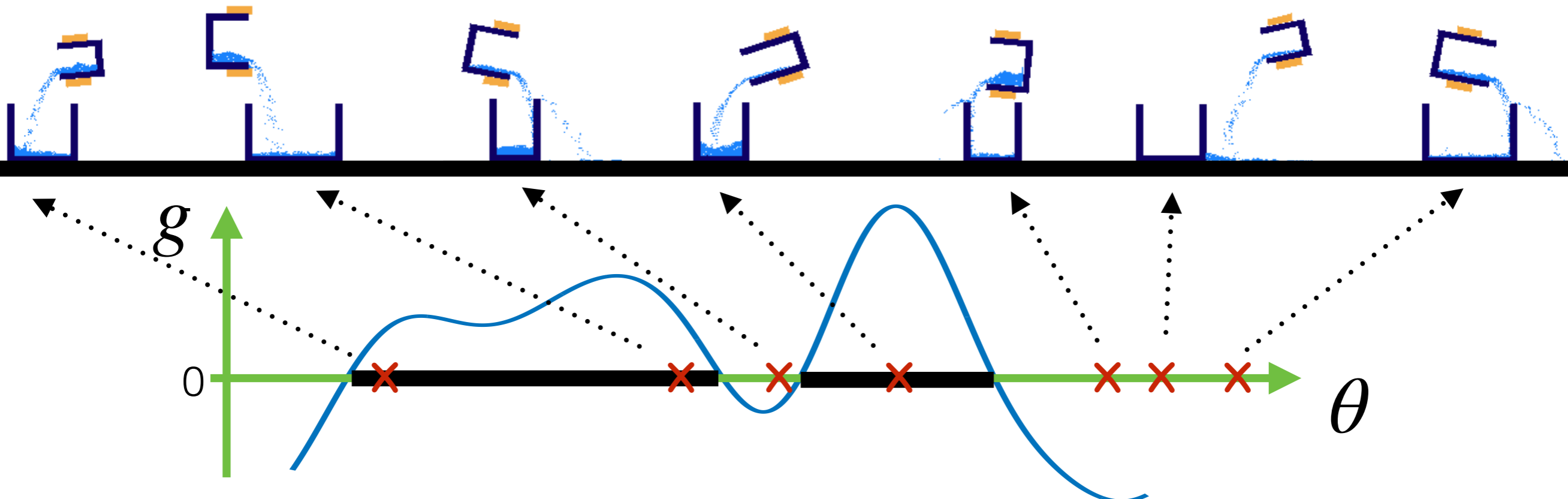


# Learning preconditions of a skill

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

as  $\text{Score}(\underbrace{w_s, h_s, w_t, h_t, c_{\text{grasp}}, c_{\text{pour}}, r_{\text{pose}}}_{\theta}) > 0$

- Learn the **super level set** of a constraint  $\{\theta : g(\theta) > 0\}$
- Construct a sampler to sample within the super level set



# Learning constraints with few samples

- Real robot experiments or high fidelity simulations are expensive
- How to actively select what parameters to test?

