Models

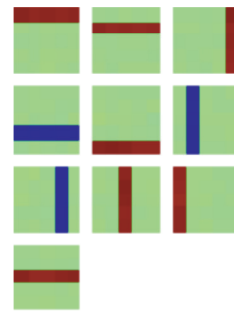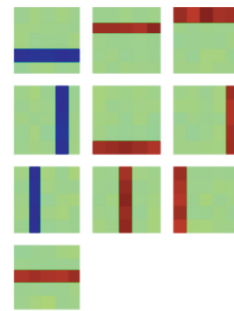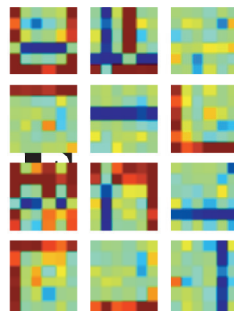| | Data | $W_{\text{hand-derived}}$ | $W_{\text{GP-select}}$ |

A: Binary SC

latents: $\mathbf{s} \sim Bern(\mathbf{s}|\pi) = \prod_{h=1}^{H} \pi^{s_h} (1 - \pi)^{1-s_h}$

observations: $\mathbf{y} \sim \mathcal{N}(\mathbf{y}; W\mathbf{s}, \sigma^2 I)$

B: Spike & Slab SC

latents: $\mathbf{s} = \mathbf{b} \odot \mathbf{z} \sim Bern(\mathbf{b}|\pi) \odot \mathcal{N}(\mathbf{z}; \mu, \Sigma_h)$
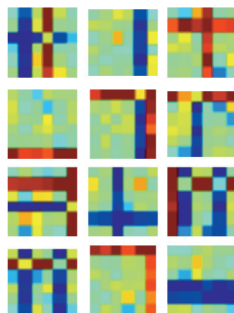
observations: $\mathbf{y} \sim \mathcal{N}(\mathbf{y}; W\mathbf{s}, \sigma^2 I)$

C: Nonlinear Spike & Slab SC

latents: $\mathbf{s} = \mathbf{b} \odot \mathbf{z} \sim Bern(\mathbf{b}|\pi) \odot \mathcal{N}(\mathbf{z}; \mu, \Sigma_h)$

observations: $\mathbf{y} \sim \mathcal{N}(\mathbf{y}; \max_h\{s_h \mathbf{W}_h\}, \sigma^2 I)$