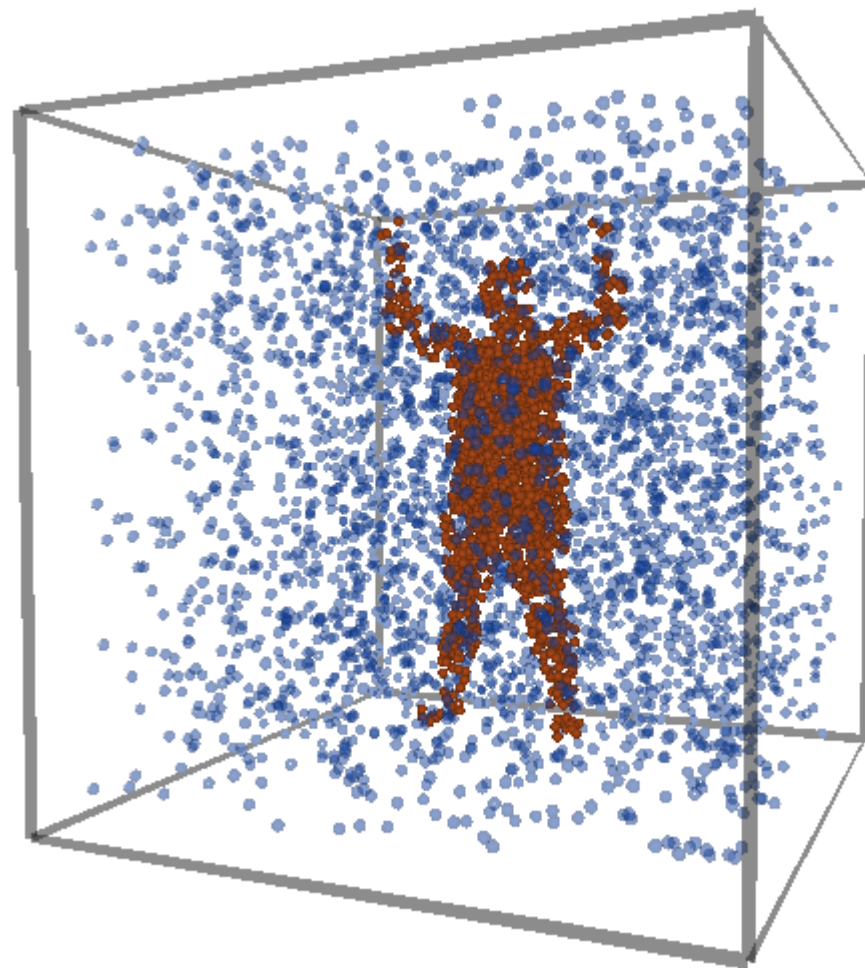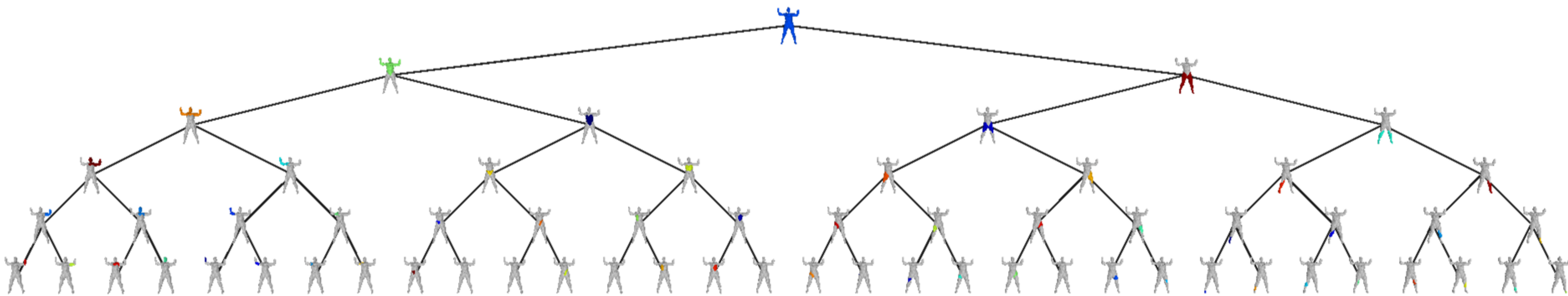Input image $\mathbf{I}$

Target object $\mathcal{X} = \{(\mathbf{x}_i, o_i)\}_{i=1}^N$

Binary tree of primitives $\mathcal{P} = \{\{p_k^d\}_{k=0}^{2^d-1}\}$