Method - Generalizable Shape Representation

Let’s define some symbols :)

A shape $S := \{P_1, \ldots, P_n\}$

A part $P_i := (C_i, g_i)$

- The cuboid $C_i := (v_i, e_i, o_i)$ - **position**, **scale**, and **rotation**.
- The geometric latent vector $g_i := h_\psi(r_1^i, r_2^i, \ldots, r_m^i)$ where h_ψ is PointNet

n - number of parts

m - number of points sampled per each part

Method - Generalizable Shape Network

We approximate the object's occupancy $\sigma(x) \approx \sigma_S(x) := f_\theta(x \mid S)$
where f_θ is a neural network given shape parameters.