

# Learning Generative Models of Shape Handles - Supplementary Material

## A. Completion results

In this section, we present additional results for the handle completion task. This task consists of creating a set of handles that represents a plausible shape *and* contains the handles in a given *incomplete* set. Here, we explore the challenging setup where the incomplete set of handles ( $A$ ) contains a single element. We solve this problem by minimizing Equation 8 (main paper) through gradient descent, which corresponds to finding the latent representation  $z^*$  that minimizes the coverage loss  $C(z, A)$ . Results are presented in Figure A1. We are able to generate multiple completion proposals (in blue) for each incomplete set of handles (in orange) by minimizing  $C(z, A)$  starting from different values of  $z$ , initially sampled from a standard gaussian distribution  $\mathcal{N}(0, I)$ . As we can see in Figure A1, the “completed” set of handles corresponds to plausible shapes while approximating the elements in the incomplete set.

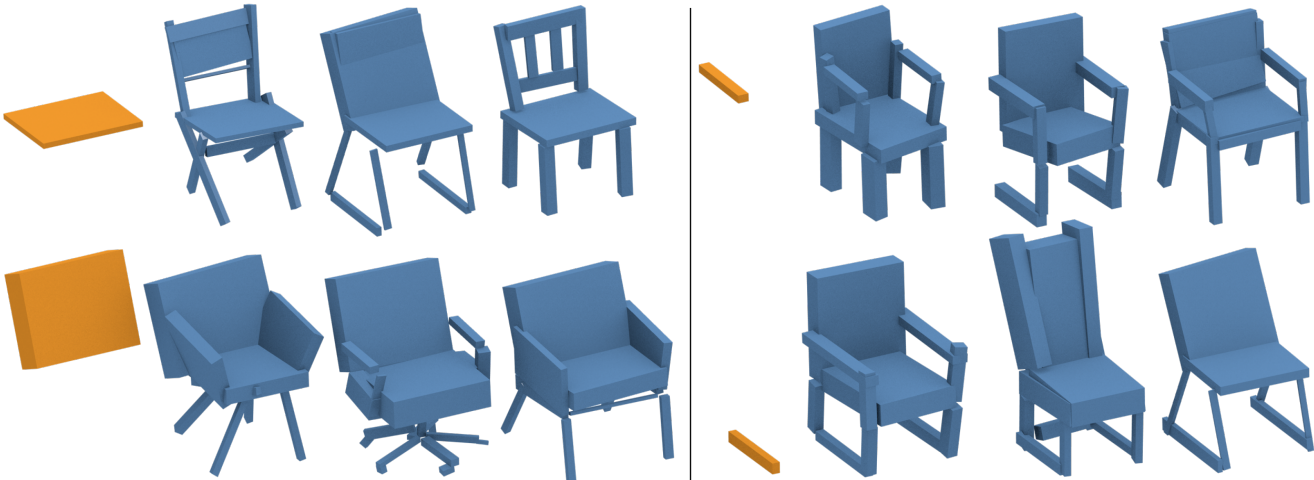


Figure A1: **Additional completion examples.** Given an incomplete set of handles (orange cuboids), we solve the optimization problem described in Equation 8 (main paper) using gradient descent. Using different starting points for  $z^*$ , our model is capable of computing multiple plausible results that represent a complete shape and closely approximates the incomplete set of handles.