

Reconstructing Creative Lego Models - Supplementary Material

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1 Additional Results

In Figure 1, we provide a larger set of outputs of our proposed algorithm for a variety of input models. We also include an example of the output graphs we generate in the final step of the algorithm (see Figure 2). In Figure 3, we show an expanded plot for the vertex-wise comparisons which was only summarily presented in the paper (Figure 10 in the main paper).

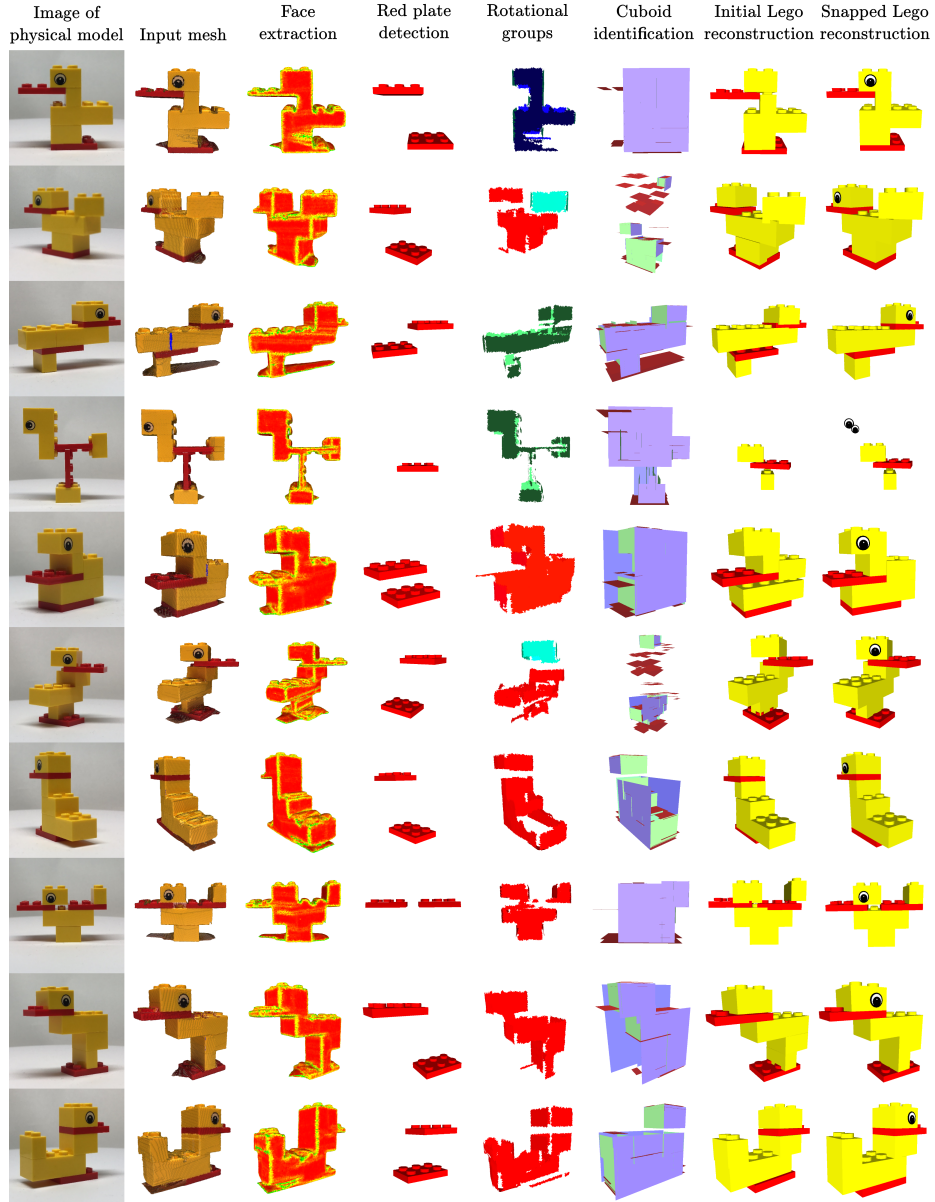
1.1 Example 3D Model Reconstructions

Included alongside this document are a number of reconstructed 3D models as ply files, which can be viewed with any 3D viewer (e.g. MeshLabJS¹). These can be found in the folder **Example Reconstructions/**. Each example contains the input images, output model, and output graph.

2 Video Demos

We include two video files with the supplementary material. In the video **A-DBSCAN - Rotational Group Detection.mp4**, we illustrate the stages in the paper from *Flat Surface Extraction* to *Angular Pairing* inclusively, as well as mapping the groups back to the flat surfaces. In the video **Manhattan World Reduction.mp4**, we show the parallel process of the *Manhattan World Reduction* and *Brick Face Extraction*.

¹ <https://www.meshlabjs.net/>



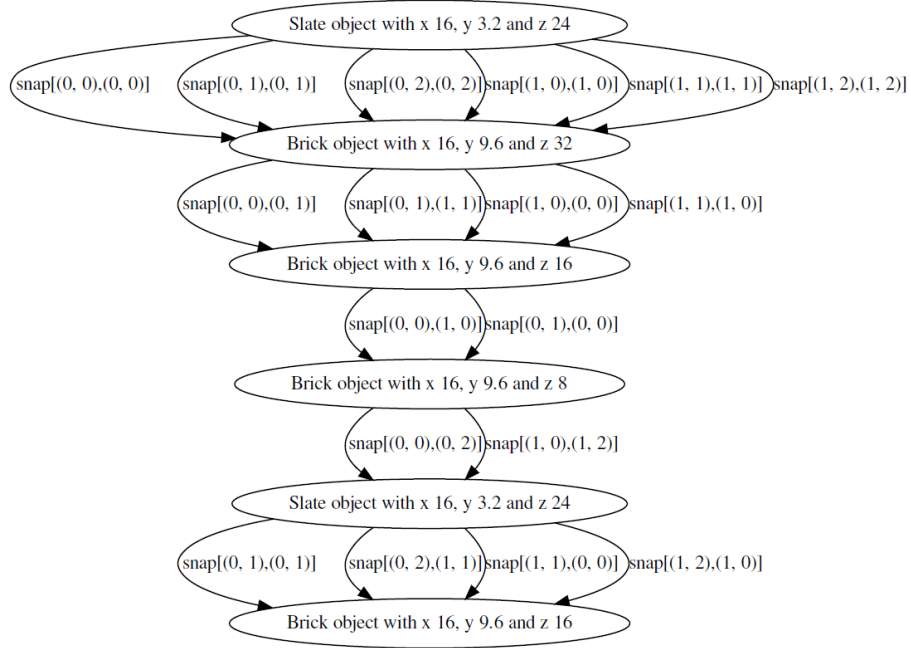


Fig. 2. An example of the graph of the connections between each brick. Each node is a unique Lego and each edge is a connection between two studs - one from each of the Lego it connects.

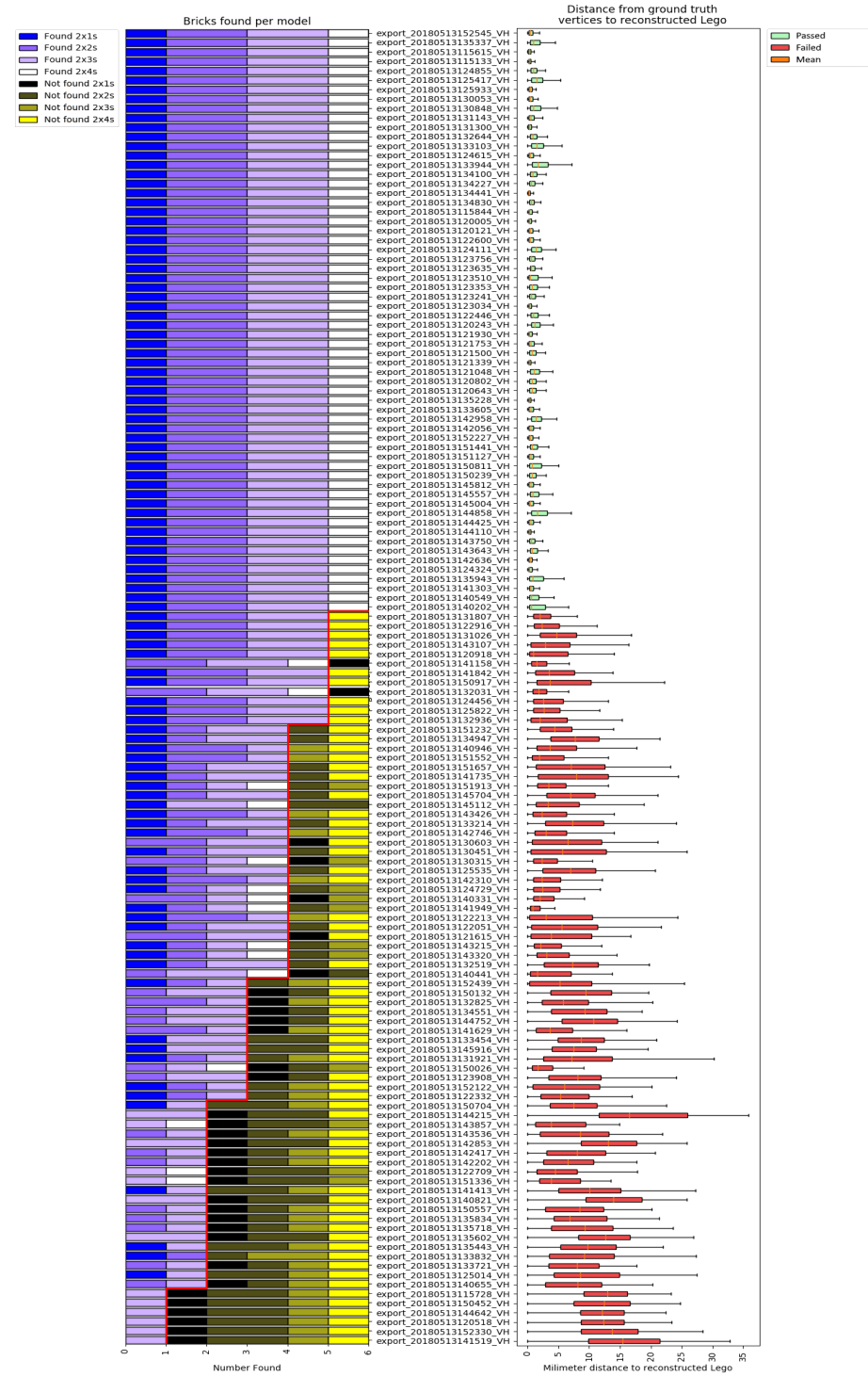


Fig. 3. Extended results from the Lego duck dataset. The left side shows the number and type of bricks found per model. The right side shows the vertex-wise distance between each input and output mesh. Best viewed in colour.