The following walkthrough illustrates the second pass of our two-pass construction algorithm, given the surface 2D parts in Figure 3(a) of the paper. The input surface 2D parts are replicated below. Throughout the walkthrough, we refer to Algorithm 1 and 2 in the paper.

The following are the maximum 3d parts for the input surface 2D parts. We initialize Pi as Max(pi) for each surface 2D part, as in lines 3 - 5 of Algorithm 1.

The input surface 2D parts are replicated below. Throughout the walkthrough, we refer to Algorithm 1 and 2 in the paper.

The following walkthrough illustrates the second pass of our two-pass construction algorithm, given the surface 2D parts in Figure 3(a) of the paper.

Each row below shows the steps performed on a pair of parts in Algorithm 1 (lines 8 - 27) to construct the final set of solid 3D parts.

I13 = P1           P3
I25 = P2           P5
I34 = P3           P4
I24 = P2           P4
I12 = P1           P2
I23 = P2           P3

Input P1 = Max(p1) P2 = Max(p2) P3 = Max(p3) P4 = Max(p4) P5 = Max(p5)

and proceed to Line 30, Algo 2

Initial thickening volume Tf

Iteration 1 thickening volume T1

Iteration 1 thickening volume T1

Iteration 1 thickening volume T1

Iteration 1 thickening volume T1

Iteration 1 thickening volume T1

Iteration 1 thickening volume T1

Final solid 3D part P3

Final solid 3D part P3

Final solid 3D part P5

Final solid 3D part P5

Final solid 3D part P5