

A INITIAL LAYOUT AND ITS IMPACT ON FINAL LAYOUT

Different initial layouts of the same dataset can lead to different final optimized layouts: force-directed [20] (Figure 12), circular (Figure 13), and random (Figure 14). Our system provides all three initial layout schemes for the user. The results in the paper were based on the force-directed layout similar to Figure 12.

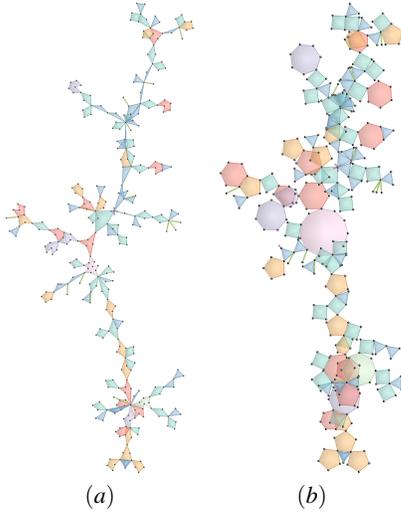


Fig. 12: The optimized layout for a dataset (b) given an initial layout where the vertices are placed based on the force-directed layout algorithm of Hu [20] (a).

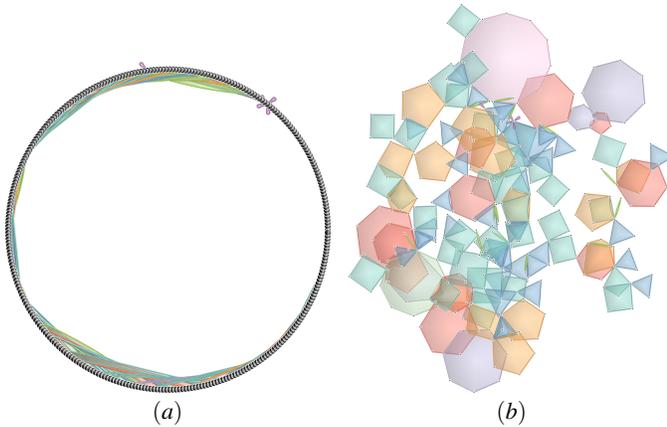


Fig. 13: The optimized layout for a dataset (b) given an initial layout where the vertices are placed on a circle (a).

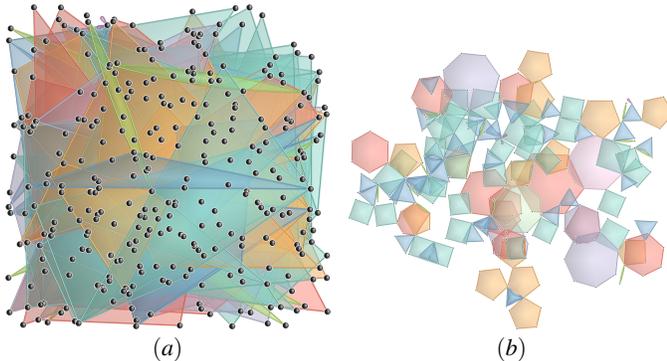


Fig. 14: The optimized layout for a dataset (b) given an initial layout where the vertices are randomly placed (a).

B TIME COMPARISON BETWEEN MANUAL LAYOUT DESIGN AND AUTOMATIC OPTIMIZATION

Table 1 compares the time of manually designing a polygon layout to that of using our automatic optimization-based algorithm. Note that for all three test datasets, the automatic algorithm is about three magnitudes faster than manual design. Both the manual design and the automatic algorithm start with the same initial layout, which, for the three test datasets, are based on the force-directed method [20].

Data	No. Vertices	No. Hyperedges	Design time (seconds)	Optimization time (seconds)
No. 1	81	22	453	0.670
No. 2	72	22	304	0.737
No. 3	43	14	194	0.268

Table 1: This table compares the times of manually designing a polygon layout for three hypergraphs to those of using our automatic optimization framework.