Force-Directed Layout for Euler Diagrams

Euler diagrams are the only diagrams that intuitively represent containment, intersection and exclusion of data. Though they are used in a wide variety of application areas, such as biological visualization, data classification and querying of large databases, none of the current automatic diagram layout techniques produce good layouts in reasonable time.

We adopt a force-directed approach to automatically layout aesthetically pleasing Euler diagrams in a reasonable time. The initial diagrams dealt with are all generated by the latest well-formed Euler diagram generator. All the forces in our model have specific objectives:

1. Attain Smooth Polygons
2. Maintain Original Structure
3. Ensure Adequately Sized Curves and Zones

Example

Initial Diagram
Final Layout by our Force-Directed Approach
Final Layout by a previous Aesthetic Layout Metrics Approach

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