

Title: Topological Methods in 3-d Visualization

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Abstract:

I want to talk about using topological methods in Data Visualization. I want to explore these methods and see how I can use Mayavi as a visualization tool to implement such methods. These methods are extremely important as with more and more complex data, it has become difficult to infer any meaningful conclusions using simple visualization techniques. I hope to use Mayavi as a tool and write vectorized code using numpy/numba to carry out my project.

Outline

I will first carry out a brief literature survey on topological methods, chalk out the popular techniques. I will then write down the code or use the packages involved to implement the methods. I will then try to integrate the code with Mayavi.

Deliverables

I intend to submit code written to implement the methods and a report outlining the details.

Timeline

20th-30th: Literature Survey

31st -10th: Writing code

11th-18th: Preparation for final submission

Github

https://github.com/piyushag0611/AE6102_Project

References:

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Topological Methods for the Analysis of High Dimensional Data Sets and 3D Object Recognition

<https://link.springer.com/book/10.1007/978-3-319-44684-4>