

I had a talk at [ACAT Summer school on computational topology and topological data analysis](#) held at University of Ljubljana.

Abstract: Fast growth in the amount of data emerging from studies across various scientific disciplines and engineering requires alternative approaches to understand large and complex data sets in order to turn data into useful knowledge. Topological methods are making an increasing contribution in revealing patterns and shapes of high-dimensional data sets. Ideas, such as studying the shapes in a coordinate free ways, compressed representations and invariance to data deformations are important when one is dealing with large data sets. In this talk we consider which key concepts make topological methods appropriate for data analysis and survey some machine learning techniques proposed in the literature, which exploit them. We illustrate their utility with examples from computational biology, text classification and data visualization.

[Slides \(in English\).](#)