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Mikael Vejdemo-Johansson* (mikael@johanssons.org) and **Primož Skraba**. *A survey of topological data analysis and available toolsets.*

One approach to Big Data is taken by the Topological Data Analysis community in the shape of Complex Data: developing tools for uncovering and analyzing complex geometric descriptors of datasets. This direction of research has been growing for the last 15 years, and has produced a selection of tools that encapsulate techniques from algebraic topology to provide more fine-grained and shape related refinements of clustering methods and geometric modelling tools.

We shall describe the various methods of Topological Data Analysis and the successes so far – including the discovery of a new type of breast cancer, of structure in the space of naturally occurring image patches, and tools for further analysis of soccer and basketball team compositions – and discuss the software tools that are currently available and in use for Topological Data Analysis. (Received August 27, 2013)