

Beyond persistent homology

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Abstract

Persistent Homology is a recent tool that allows you to get qualitative global information of some data you cannot easily understand directly (e.g., because it is very noisy or high-dimensional), by studying the homology of a sequence of nested spaces associated to the data. Its applications and the tools it uses can be found among Biology and Medicine, Statistics, Text Mining, Algebra and Geometry, Shape recognition, Data analysis, etc.

The notion of Persistent Homology can be seen as some soap you can use to clean the glasses you are wearing when looking at your data. My work with Aniceto Murillo consists of finding more powerful soaps to clean those glasses, hoping to yield to potential contributions in some of the areas cited above.

In this talk we will recall the basics of Persistent Homology and show some of our new soaps.