

# Sampling for Local Homology with Vietoris-Rips Complexes

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## **Abstract**

Over the last few years, there has been an increasing interest in topological data analysis, particularly of high dimensional data. Persistent homology has been particularly successful. Recently local homology has been proposed to gain fine grain information about non-manifold spaces.

The talk will have a brief introduction to persistent homology and its equivalent for local homology along with the applications which motivated this work. I will show that we can compute persistent versions of local homology of some underlying space using only point samples as well as describe the algorithms which are used. The talk does not assume previous exposure to persistent homology.