

abstract

Workshop on Topology: Identifying Order in Complex Systems
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

In this talk we introduce a discrete and computable version of a mathematical technique known as sheaf theory. This tool provides a method for extracting qualitative topological features of data over a space, rather than of the space itself. We survey some applications to persistent homology, linear coding and optimization over graphs, and sensor networks where the sensors can sense properties sampled from a vector space. We show how to visualize the topology present in these systems through a generalized version of a barcode, but also provide a way for computing the topology without barcodes.