Temple University Mathematics Colloquium

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will speak on

Topological data analysis

ABSTRACT: Scientific data is often in the form of a finite set of sampled points. Analysis assumes that this data has structure: It is sampled from some underlying geometric space. Topological data analysis focuses on recovering this space's topology: how it is connected.

We generally follow a two-step process in topological analysis. In the first step, we approximate the space in a combinatorial structure. In the second step, we capture its topology using an algebraic invariant.

In this talk, I discuss the theory and practice of topological data analysis with a focus on tidy simplicial sets for step 1 and theories of persistence for step 2. I will also include some applications to real-world data.

Monday, 4 October 2010
Lecture at 4:00 pm
Coffee, tea, and refreshments from 3-5 pm
Room 617, Wachman Building
Department of Mathematics