



Speaker: Jeremy Mann
University of Notre Dame

Monday, April 11, 2016
4:00 PM
229 Hayes-Healy Hall

Title: Topological Data Analysis

Abstract:

Topological Data Analysis refers to any application of algebraic topology or abstract homotopy theory to gain insight into large or complex data sets. Topology is good for two things. First, topology has an assortment of techniques for taking a structure, and creating a "space." The "shape" of this space should somehow economically encode qualitative information about your structure. Second, topology has a toolbox (borrowed predominantly from commutative and homological algebra) for extracting computable "invariants" from these spaces. These invariants can be thought of as exotic types of clusterings, and, in many instances, they have interesting interpretations. In this talk, the speaker will attempt to give a nontechnical account of how businesses and researchers have been applying topology to data analysis. In particular, the speaker will not assume any familiarity with algebraic topology.