

The University of Chicago
Department of Statistics
STATISTICS COLLOQUIUM

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The Shape of Data

MONDAY, December 5, 2011, at 4:00 PM

Room 240a/b, Searle Chemical Laboratory, 5735 S. Ellis Avenue

This seminar will be a joint event with Partha Niyogi's memorial conference:

<http://parthaniyogiconference.cs.uchicago.edu/>.

ABSTRACT

Many interesting problems in the study of data can be interpreted as questions about the “shape” of the data. For example, the existence of a cluster decomposition of a data set can be viewed as an aspect of its shape, as can the presence of loops and higher dimensional features. These shape theoretic aspects are important in identifying conceptually coherent groups within a data set, or perhaps the presence of periodic or recurrent behavior. Topology can be characterized as the study of shape, including both questions about how to represent shape efficiently as well as how to measure it, in a suitable sense. Over the last decade, there has been an effort to adapt the methods of topology to the study of data, so that one can become more precise about the shape theoretic aspects. I will talk about some of these developments, with examples.

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