SE&T Colloquium Series-Fall 2017

Speaker	Dr. Josh Mike Department of Computational Mathematics, Science and Engineering, Michigan State University Host: Dr. Grace McClurkin
Title	***Topological Data Analysis and its Applications***
Abstract	Traditional data analysis has its basis in the study of real numbers and vector spaces, leading to many linear and parametric data analysis techniques. These methods yield poor results when applied to datasets with nonlinear structure. Consequently, many nonlinear (and also big data) techniques have been developed in the past few decades. Topological data analysis (TDA) uses the very general field of topology as its theoretical basis. As a result of this drastically different point of view, TDA can be used in very different scenarios, in particular when the data lack a vector space structure. In this talk, we aim to introduce the core ideas behind topological data analysis and results of a few associated methods in different applications. Specifically, we will discuss persistent homology (periodic data), Hodge cycle (Kidney Paired Donation), and nerve learning (learning dataset geometry).
Date	Tuesday, November 14
Time	4:10-5:00pm
Place	Pioneer 240
	Refreshments will be served at 4:00pm.