



BIG DATA

Interdisciplinary Data Sciences



* IDSC Seminar Series *

February 10, 2016 1:00-2:00pm

Location: ENB 313

Presents

Dr. Paul Rosen

Assistant Professor of Computer Science
University of South Florida

Title: *Using Topological Data Analysis to Improve Data Visualization*

Abstract: The desire to explore data at ever increasing complexity and resolution is leading to new visual analysis challenges, and current visualization tools are ill-prepared for the onslaught. Traditional approaches offload the majority of the analytic tasks to the human cognitive system--an approach that does not scale well given limited human visual bandwidth. In this talk, I will discuss our work addressing this problem by using topological data analysis (TDA) as a mathematically robust mechanism for extracting structure, thereby reducing complexity and denoising data. Leveraging TDA, new visualizations are designed to investigate the data and communicate the findings in a salient way. I will discuss how thus far we have applied our approaches in 4 domains: software performance analysis, network/graph analysis, nuclear simulation, and radio astronomy.



Biography: Dr. Paul Rosen is an Assistant Professor at the University of South Florida in the Department of Computer Science and Engineering. His PhD is from the Computer Science Department of Purdue University. Prior to USF, he was a Research Assistant Professor in the Scientific Computing and Imaging (SCI) Institute and the School of Computing at the University of Utah. His interdisciplinary research interests include topics in Scientific Visualization, such as vector field and uncertainty visualization, and Information Visualization, such as parameter space and software performance visualization. Along with his collaborators, he has received awards for best paper at PacificVis 2014 and SIBGRAPI 2013, and CG&A's best paper runner-up in 2011.

IDSC Contact:
Dr. K. Ramachandran
University of South Florida
4202 E Fowler Ave, CMC317
Tampa, FL 33620-5700
E-mail: ram@usf.edu
Telephone: (813)-974-1270
Fax: (813)-974-2700

sponsors: USF Statistics club