UCF DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCEINCE

Spring 2015 Seminar Series

Presented by the CS Division

TOPOLOGICAL ANALYSIS OF MODERN DATA

WEDNESDAY APRIL 1, 2015

10:00 AM – HEC 450

We are facing unprecedented challenges from modern data such as vast volume, high dimensionality and complex intrinsic structures. To address those issues, we need scalable and robust methods to extract concise, intuitive and discriminative global information from data. In this talk, I will present my work on fundamentals and advanced techniques from topology data analysis. Advanced tools from this new field, such as persistent homology, extract topological summaries of the data with strong theoretical guarantees. I will demonstrate how these summaries can be used to model, process and visualize modern data in various domains such as biomedical informatics and neuroscience.

DR. CHAO CHEN

Rutgers University

Dr. Chao Chen is a postdoc fellow at Rutgers University. Previously, he obtained his PhD degree from Rensselaer Polytechnic Institute and worked as a postdoc fellow with Prof. Herbert Edelsbrunner at Institute of Science and Technology Austria. His interdisciplinary research combines advanced theoretical tools from topological data analysis and real-world data in biomedical informatics and neuroscience. In the past few years, he has published over ten papers in top venues of machine learning, theory and biomedical informatics. His paper was elected as a spotlight presentation at NIPS 2014. His paper at SoCG 2011 was selected to a special issue for the top 5. His paper won the best paper runner-up of Topology-in-Visualization 2011.

Hosted by: Dr. Mark Heinrich