



Time: Friday 2/26/16, 1:00PM

Place: Broome 1710

Speaker: Pawel Pilarczyk

Talk title: A New Approach to Data Mining

Abstract: Development of methods for understanding large collections of data is one of the critical challenges of science in the 21st Century. With the huge amounts of data produced by efficient digital devices and systems today, traditional methods of data analysis are not up to the challenge. In this context, recall that the recent century has seen several occurrences of pure mathematical knowledge giving rise to new technology that changed our lives. Algebraic topology is a mature area within mathematics that provides tools for combining local information into global knowledge. Topological analysis allows one to reveal the structure of a dataset that goes beyond simple clustering. In this talk, an introduction to the main ideas behind this approach to data analysis will be given, and the usefulness of topological methods will be illustrated with a few examples.

Short bio: Dr. Pilarczyk is a Marie Skłodowska-Curie Fellow at the Institute of Science and Technology Austria. Research interests: computational algebraic topology and computational analysis of dynamical systems. MSc in Mathematics, MSc in Computer Science, PhD in Computational Mathematics. Conducts inter-disciplinary and cross-disciplinary research, with international collaborators at four continents. Post-doctoral experience at the Jagiellonian University (Krakow, Poland), Georgia Institute of Technology (Atlanta, GA), Kyoto University (Japan), and the University of Minho (Braga, Portugal). Author of 19 publications in peer-reviewed academic journals. Delivered 22 talks invited to international conferences and workshops, and 30+ seminar talks at academic institutions in several countries. Personal website: <http://www.pawelpilarczyk.com/>