SAID BUSINESS SCHOOL, University of Oxford

SEMINAR SERIES / MICHAELMAS 2010

Convenors: Felix Reed-Tsochas, Institute for Science, Innovation and Society, Saïd Business School
Eduardo López, Saïd Business School

Sandwiches and drinks will be provided

Please note: although the seminar programme detailed was correct at time of printing, seminar arrangements are subject to change – for the latest information, please check the seminar webpage.

Tuesday 30th November
(12.30pm – 2.00pm) James Martin Seminar Room

Dr Mason Alexander Porter
Oxford Centre for Industrial and Applied Mathematics, Mathematical Institute, University of Oxford

'Community Structure in Multislice Networks'

ABSTRACT

We develop a formalism to detect communities in a very broad setting by studying general dynamical processes on networks. We create a new framework of network quality functions that allows one to study the community structure of arbitrary "multislice" networks, which are combinations of individual networks coupled through additional links that connect each node in one network slice to itself in other slices. This framework allows one for the first time to study community structure in a very general setting that encompasses networks that evolve in time, have multiple types of ties (multiplexity), and have multiple scales. I will also discuss applications to political voting networks and neuronal networks constructed from fMRI data, and the infamous (and ubiquitous) Zachary Karate Club will surely show up at some point.