



RMIT Statistics & Analytics Seminar

Multivariate Statistics
Learning
Data Mining
Applied Statistics
Machine Learning
Analytics
Teaching
Statistics
RMIT
Quality Control
Experimental Design
Statistics Education
Data Visualisation
Ecological Modelling
Bayesian Analysis
Biostatistics
Time Series
Modeling

Speaker: Dr. Stelios Georgiou
RMIT University

Date: Thursday, 21 September 2017
Time: 13:00pm–14:00pm (Talk & Q/A)
Venue: Building 8 Level 9 Room 66
RMIT City campus



All students, staff and visitors are welcome.
The talk will be followed by snacks and drinks.

Title: New three-level designs for screening in the presence of second order terms

Abstract: Screening is the first stage of many industrial experiments and is used to determine efficiently and effectively a small number of potential factors among a large number of factors which may affect a particular response. In a recent paper, Jones and Nachtsheim (2011b) have given a class of three-level designs for screening in the presence of second order effects using a variant of the coordinate exchange algorithm as it was given by Meyer and Nachtsheim (1995). Xiao et al. (2012) have used conference matrices to construct definitive screening designs with good properties. In this talk, we propose a method for the construction of efficient three-level screening designs based on weighing matrices and their complete foldover. This method can be considered as a generalization of the method proposed by Xiao et al. (2012). Many new orthogonal three-level screening designs are constructed and their properties are explored. These designs are highly D-efficient and provide uncorrelated estimates of main effects that are unbiased by any second order effect. Our approach is relatively straight forward and no computer search is needed since our designs are constructed using known weighing matrices.

Short Bio: Dr. Stelios Georgiou is a senior lecturer of Statistics at RMIT University, Australia. Previously, Stelios worked as an associate professor of combinatorics and statistics at the University the Aegean, Greece. His current teaching is in the areas of Combinatorics and Statistics. His peer-reviewed research articles are mainly on Statistical Experimental Designs, Optimal Designs, Factorial Designs, Orthogonal Arrays, Saturated and Supersaturated designs, Weighing designs, Latin Hypercube designs, Computer experiments, Response surface methodology. He has also worked in Biostatistics and Applied Data Analysis, Combinatorial Designs, Difference Sets, Sequences with Zero Autocorrelation, Orthogonal Matrices and Designs. Additional publications include his research papers in the fields of Information and Coding Theory, Self-orthogonal codes, Self-dual codes and Cryptography.

Contact: stats.seminars@rmit.edu.au