CoE-MaSS weekly seminar series

THE DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL AND STATISTICAL SCIENCES (CoE-MaSS) WOULD LIKE TO PRESENT A SEMINAR BY

Mr Theodor Loots

(School of Statistics, University of Pretoria)

"Nonparametric regression by property matching of kernel density estimates"

Friday, 9 June 2017
10h30-11h30

Broadcast live from:
Videoconferencing Facility, 1st Floor
Mathematical Sciences Building, Wits West Campus

How to connect to this seminar remotely:
You can connect remotely via Vidyo to this research seminar by clicking on this link: http://wits-vc.tenet.ac.za/flex.html?roomdirect.html&key=y0SSOwFsvsidbzg4qFdWXvvQtyI and downloading the Vidyo software before the seminar.
You must please join in the virtual venue (called *"CoE Seminar Room (Wits)"* on Vidyo) strictly between **10h00-10h15**. No latecomers will be added.

Important videoconferencing netiquette:
Once the seminar commences, please mute your own microphone so that there is no feedback from your side into the virtual room. During the Q&A slot you can then unmute your microphone if you have a question to ask the speaker.

Title:
Nonparametric-regression by property matching of kernel density estimates

Presenter:
Mr Theodor Loots; Lecturer, School of Statistics, University of Pretoria.
Email: Theodor.loots@up.ac.za

Abstract:
The coefficients obtained from using ordinary linear regression may be severely biased with corresponding estimates lacking accuracy when the assumptions of normality are not satisfied. A new framework is proposed where distributional properties of the kernel density functions cast over the dependent and independent variables are matched in order to yield coefficient estimates. Specifically, the moments and arc lengths of these functions are matched, and applied to a problem in biology. The significance of these estimates are evaluated using resampling techniques, and model selection performed by using an entropy based measure, namely, the Bhattacharyya divergence measure. It is shown that the percentage variation explained, resulting from ordinary least squares, can be improved upon, without forfeiting the elegance of the linear model.