22nd International Conference on Computational Statistics (COMPSTAT 2016)

Oviedo, Spain 23 – 26 August 2016

Editors:

Ana Colubi Angela Blanco **Cristian Gatu Gil Gonzalez-Rodriguez**

ISBN: 978-1-5108-3759-1

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright $\ \bigcirc \ (2016)$ by International Statistical Institute (ISI) All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact International Statistical Institute (ISI) at the address below.

International Statistical Institute (ISI) P.O. Box 24070 2490 AB The Hague The Netherlands

Phone: 31-70-3375737 Fax: 31-70-3860025

www.isi-web.org

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA

Phone: 845-758-0400 Fax: 845-758-2633

Email: curran@proceedings.com Web: www.proceedings.com

Contents

Davide Martinetti and Ghislain Geniaux	
ProbitSpatial R package: fast and accurate spatial probit estimations]
Aldo Corbellini, Luigi Grossi and Fabrizio Laurini Robustness for multilevel models with the forward search	13
Kohei Adachi and Nickolay T. Trendafilov Some mathematical notes on comprehensive factor analysis	25
Claude Manté and Saikou Oumar Kidé Approximating the Rao's distance between negative binomial distributions. Application to counts of marine organisms.	37
Anne De Moliner, Camelia Goga and Hervé Cardot Estimation of total electricity consumption curves of small areas by sampling in a finite population	49
Jan Ámos Víšek Coping with level and different type of contamination by SW-estimator	59
Lida Mavrogonatou and Vladislav Vyshemirsky Sequential importance sampling for online Bayesian changepoint detection	73
Fumio Ishioka and Koji Kurihara Detection of space—time clusters for radiation data using spatial interpolation and scan statistics	8!
Massimiliano Giorgio, Maurizio Guida, Fabio Postiglione and Gianpaolo Pulcini A Bayesian approach for the transformed gamma degradation process	99

xii Contents

Ricardo A. Collado and German G. Creamer Time series forecasting with a learning algorithm: an approximate dynamic programming approach	111
Masatoshi Nakamura, Yoshimichi Ochi and Masashi Goto Trees Garrote for Regression Analysis	123
S.X. Lee and G.J. McLachlan On mixture modelling with multivariate skew distributions	137
Alexander Pulido-Rojano and J.Carlos García-Díaz A modified control chart for monitoring the multihead weighing process	149
A. Hitaj, F. Hubalek, L. Mercuri and E. Rroji On multivariate extensions of the Mixed Tempered Stable distribution	159
Jocelyn Chauvet, Catherine Trottier, Xavier Bry and Frédéric Mortier Extension to mixed models of the Supervised Component-based Generalised Linear Regression	169
Brodinova et al. Evaluation of robust PCA for supervised audio outlier detection	183
Xavier Bry, Théo Simac and Thomas Verron Supervised-Component based Cox Regression	195
Hirohito Sakurai and Masaaki Taguri Test of mean difference in longitudinal data based on block resampling approaches	205
W. James Murdoch and Mu Zhu Expanded alternating optimization for matrix factorization and penalized regression	217
Angela Alibrandi et al. NPC to assess effects of maternal iodine nutrition and thyroid status on children cognitive development	231

Contents

Baldvin Einarsson et al.	
Using intraclass correlation coefficients to quantify spatial variability of catastrophe model errors	243
Ana Tavares et al. Detection of exceptional genomic words: a comparison between species	255
Wataru Sakamoto Cluster detection of disease mapping data based on latent Gaussian Markov random field models	267
M. Ivette Gomes, Helena Penalva, Frederico Caeiro and Manuela Neves Non-reduced versus reduced-bias estimators of the extreme value index — efficiency and robustness	279
Yoshitake Takebayashi, Takafumi Kubota and Hiroe Tsubaki Risk profiles for severe mental health difficulty: classification and regression tree analysis	291
Carlos G. Maté and Javier Redondo Forecasting financial time big data using interval time series	303
Michel Philipp, Achim Zeileis and Carolin Strobl A toolkit for stability assessment of tree-based learners	315
Pierre Michel and Badih Ghattas Variable Importance in Clustering Using Binary Decision Trees	327
Takafumi Kubota, Hitoshi Fujimiya and Hiroyuki A. Torii Time series changes of the categorical data using the text data regarding radiation	339
Thomas Michael Bartlett, Levy Boccato A Multimomental ARMA model: initial formulation and a case study	349
Tommi Salminen, Lasse Koskinen and Arto Luoma Joint modeling of inflation and real interest rate dynamics with application to equity-linked investment	361

Visualization of cross tabulation by the Association rules by using the Correspondence analysis

Giurghita and Husmeier

Inference in nonlinear systems with unscented Kalman filters

383

Contents

Guillaume Sagnol, Hans-Christian Hege and Martin Weiser

xiv

Using sparse kernels to design computer experiments with tunable precision 397