



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
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Borrowing information across related studies: a Bayesian nonparametric approach

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Abstract: Non-exchangeable data arise in a number of relevant applied problems such as, e.g, regression, time series analysis, spatial statistics, meta-analysis, two-sample problems. Attention is focused on the case where data originate from different studies or refer to related experiments that are performed under different conditions. In such a context, the properties of a novel flexible class of nonparametric priors are analyzed. Specifically, these priors are used to define dependent hierarchical mixture models whose features are explored, especially in terms of the clustering behavior and the borrowing of strength across studies. A simulation study investigates the effect of dependence: the novel model allows for a more appropriate use of the available information and, in turn, leads to a better understanding of the clustering structure underlying the data. The degree of dependence between priors does not need to be set by the experimenter as the Bayesian approach naturally allows the data to determine it.

Short Bio: After getting bachelor and master degree in mathematics at the University of Milan-Bicocca, Italy, in 2011 Bernardo completed his PhD in mathematics and statistics at the University of Pavia, Italy, under the supervision of Prof. Antonio Lijoi. The PhD thesis was granted the award for best 2011 Ph.D. thesis in Statistics by the Italian Statistical Society and a honorable mention at the Savage Award 2012 issued by the American Statistical Association, International Society of Bayesian Analysis and NBER-NSF. Between 2011 and 2015 Bernardo was postdoctoral fellow at the University of Turin and Collegio Carlo Alberto, Italy. In 2012 he visited The University of Texas MD Anderson Cancer Center, Houston, US, for six months. Since February 2016 Bernardo joined the School of Computer Science and Statistics as an assistant professor of statistics.

Venue: Large Conference Room, O'Reilly Institutes.

Further Details: <https://www.scss.tcd.ie/SchoolSeminar/>