**** Post-doc in Statistics, University of Florence ****

A post-doc in Statistics is available in the Department of Statistics, Computer Science, Applications at the University of Florence, under the supervision of Prof. Monia Lupparelli and Prof. Francesco C. Stingo.

Deadline for application: July 12th 2021
Starting date: November 1st 2021

Research topic: Bayesian model search for profile undirected graphical models
The research project aims to develop a graphical modelling approach to study the effect that a risk factor may have on a set of random variables and on their joint dependence structure. This issue could be partially addressed by using chain graph or multiple graph models: the first method ignores how the dependence structure may vary under different profiles defined by the external factor, the second does not account for the effect of the factor on single variables. The research should develop a class of profile graphical models to fill the gap between the existent graphical approaches. As far as inference is concerned, model selection

represents a crucial aspect since compatibility constraints for the model identifiability need to be considered. The idea is to implement Bayesian stochastic search approaches for the selection and inference of discrete profile graphs, both for moderate and high dimensional data. The proposed methodology will be applied to biomedical data.

Details can be found at

https://bandi.miur.it/bandi.php/public/fellowship/id_fellow/192962

and

https://titulus.unifi.it/albo/viewer?view=files%2F004108400-UNFICLE-701729a1-86ee-4a07-8c93-2f0448df5b69-000.pdf