

BAYESIAN MODELLING IN THE BIG DATA ERA

Case studies in understanding neurodegenerative disease

Thursday, 6 February 2020, 15.00 - 17.30 p.m.
Mondino Hall - IRCCS Fondazione Mondino
via Mondino 2, Pavia

Event promoted by BioData Science, IRCCS Fondazione Mondino (Pavia)

CHAIR AND DISCUSSANT

Antonietta Mira

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SPEAKER

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The so-called 'big data era' presents statisticians and data scientists with the opportunity to utilise a wide variety of data from different sources to learn about many complex problems. In this presentation, I will present some of the ways in which we have been developing various Bayesian hierarchical models and associated computational methods to improve understanding neurodegenerative conditions such as Parkinson's Disease (PD) and Alzheimer's Disease (AD). The approaches include ensemble methods and mixed effects models to discover associations with PD, unsupervised clustering via mixture models to establish the likelihood of pre-clinical AD, and a probabilistic dynamic modelling model to simultaneously estimate brain covariance networks for AD patients.