High-Dimensional
Non-Stationary Time Series Analysis

IRTG 1792 Short Course

Han Liu

24.10.2016

Nonparametric Graphical Models: Foundation and Trends

The most popular approach for graphical model inference is to assume the data has a joint Gaussian distribution, under which the graphical model inference problem can be reduced to inferring the sparsity pattern of the inverse covariance matrix. To remove such normality assumption, we introduce a systematic framework for developing new nonparametric graphical models by regularizing the generic Markov random field model. Our current framework includes 3 important regularization techniques: (i) marginal regularization; (ii) interaction regularization; (iii) graph regularization; All these approaches can both be viewed as adding structural regularization to the generic pairwise nonparametric Markov random field and reflect an interesting tradeoff of model flexibility with structural complexity.

Han Liu is an Assistant Professor at the Department of Operations Research and Financial Engineering at Princeton University. As a computer scientist and statistician, he exploits computation and data as a lens to explore science and machine intelligence.

Place: Room 112, Spandauer Str. 1
Time: 24.10.2016 9:00-12:00

http://irtg1792.hu-berlin.de