

Beyond Gaussian graphical models

Topic. Statistics.

Candidate. You have a PhD in statistics and want to work on a challenging problem in statistics motivated by real world applications.

Description. Although Gaussian graphical models [2, 3] are routinely used to decipher complex relationships between genes in biology, new datasets produced by modern biotechnologies often contain mixed-type data which can no longer assumed to be Gaussian. To address this problem one promising approach assumes that the observed mixed-type data are nonlinear functions of a hidden, unobserved, sample of Gaussian vectors, and sets out with the aim to discover the graphical structure encoded by this Gaussian vector [1, 4, 5]. However, one can show that the graphical structure of the observed variables does not coincide with the one of the hidden Gaussian vector. The aim of the postdoc is to design a method able to infer the graphical structure of the observed variables. Depending on your interests, you will have the opportunity to work on the theoretical aspects of the method and/or its application to real datasets in genomics produced by biologists at INRAE. The postdoc will be located at INRAE, MaIAGE, 78350, Jouy-en-Josas, France.

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References

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