On robustness of the skew-t model

Marcia Branco
Universidade de São Paulo, Brazil

For a long time the Student-t distribution has been used as an alternative to the normal distribution for robust modelling purpose. This robustness property is associated with the weight of the tails of the Student-t distribution. Distributions with heavier tails deal better with the problem of the influence of outliers on estimates. In the asymmetric world, it seems natural to expect that the skew-t distribution has the same robustness properties. However, this analogy cannot be made without additional caution. What robustness properties can be extended from the Student-t distribution to the skew-t distribution? In what situations does the skew-t distribution fail to handle the presence of outliers? These are the topics I intend to discuss in my presentation. This is a joint work with Simone Harnik and Marc Genton.