

Seminario Aleatorio

Sesión 395

Bayesian inference with Pitman-Yor mixtures: modelling and computational challenges

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Resumen

Natural generalisation of the Dirichlet process, the Pitman-Yor process is characterised by a more flexible learning mechanism, while maintaining a convenient degree of mathematical tractability. As a result, infinite mixture models based on the Pitman-Yor process have recently gained popularity as flexible alternatives to ubiquitous Dirichlet process mixtures. In this presentation we highlight some challenges that arise when modelling settings and computational schemes, originally proposed for the Dirichlet process, are adapted to Pitman-Yor mixtures. We investigate the efficiency of existing Markov chain Monte Carlo methods for posterior simulation, and discuss the possibility of incorporating prior information into the mixture model by choosing an informative base measure. Solutions to deal with both aspects will be proposed and their performance illustrated by analysing both synthetic and real data sets. State-of-the-art posterior sampling schemes for Pitman-Yor mixtures in a variety of modelling frameworks are efficiently implemented in the R package BNPmix.

**Viernes 21 de octubre de 2022,
13:00 horas de CDMX,**

<https://itam.zoom.us/j/91008495202?pwd=U004REN4U296cHNUY2xQcTFFUkpJZz09>

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