

## **Seminario Aleatorio**

*Sesión 426*

### **Variational Bayes: New approaches for learning the posterior**

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#### **Abstract**

The paradigm of Variational Inference (VI) is that of effectively enabling Bayesian inference in complex models by learning an approximation of the true posterior within a framework that recasts the typical Bayesian integration/simulation problem into an optimization one. However, implementing VB principles poses several challenges from a practical perspective, especially in high-dimensional settings. After reviewing the main concepts and ideas around VB, this talk will discuss some new efficient algorithmic possibilities for implementing VB at a large scale. I will first discuss my recent research on gradient-free and gradient-based methods (with an outlook on reparametrization issues in the context of GARCH-like models). Later, I will move towards new approaches based on manifold optimization and low-dimensional parametrizations based on Cholesky factors and Household matrices.

**Viernes 6 de septiembre de 2024,  
Salón 301 ITAM, Campus Río Hondo  
13:00 horas de CDMX**