

March 6th, 2017

KAP 414

2:00 P.M. – 3:00 P.M.

Professor Sebastian Jaimungal

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“Trading algorithms with learning in latent alpha models”

Abstract: Alpha signals for statistical arbitrage strategies are often driven by latent factors. This paper analyses how to optimally trade with latent factors that cause prices to jump and diffuse. Moreover, we account for the effect of the trader's actions on quoted prices and the prices they receive from trading. Under fairly general assumptions, we demonstrate how the trader can learn the posterior distribution over the latent states, and explicitly solve the latent optimal trading problem in an online fashion. Furthermore, we develop a forward-backward algorithm based on expectation-maximization to calibrate a pure-jump model to historical data, illustrate the efficacy of the optimal strategy through simulations, and compare to strategies which ignore learning in the latent factors.

This is a joint work with Philippe Casgrain, U. Toronto.