University of Chicago Booth School of Business

Operations Management/Management Science Workshop

Tuesday, November 27, 2018

Jose Correa, University of Chile

Title: Prophet inequalities and posted price mechanisms

Abstract:

We review some recent developments on the effectiveness of a simple type of mechanism in which the seller makes take-it-or-leave-it offers to a set of buyers. These mechanisms, usually known as posted price mechanism (PPM) are closely connected to the theory of optimal stopping, and the so-called prophet inequalities. In this context, samples from independent random variables arrive online. A gambler that knows the distributions must decide at each time whether to stop and pick the current sample or to continue and lose that sample forever. The goal of the gambler is to maximize the expected value of what she picks when compared to a prophet, that sees all the realizations in advance. In this talk we discuss how quantile based strategies provide the best possible results for the iid prophet inequality and lead to the best known guarantees in the general independent setting. We will also discuss recent results for the case in which the distribution is unknown.

The talk is based on the following papers:

https://arxiv.org/abs/1807.07483

https://arxiv.org/abs/1811.06114