Operations Research Seminar

Models and Algorithms for Stackelberg Games with Incomplete Information

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Stackelberg games, where one player, the leader, selects its action first and the second player decides its optimal strategy knowing the actions of the leader, is a natural problem for various security domains. This framework, however, assumes the leader has an accurate model of the adversary. In this talk I will present recent work we have done in which we develop efficient mixed-integer programs and algorithms to solve situations where there is imperfect information about the adversary, its reward structure, or decision process. This work leads to the development of a system that has been used since August 2007 to aid in the randomization of security patrols at the Los Angeles International Airport.

Biography: Prof. Ordonez studied mathematical engineering at the University of Chile. In 2002, he obtained a Ph.D. in Operations Research from the Operations Research Center at MIT. He then joined University of Southern California and is currently an Associate Professor in the Department of Industrial and Systems Engineering.

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