“Practical Solutions to Internet Experimentation with High-Dimensional Action Spaces Using Bayesian Optimization”

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Abstract
Rapid progress in deep reinforcement learning has produced stunning achievements in controlled environments, yet many challenges arise when attempting to apply such methods to real-world problems. Using examples from Facebook, I will discuss several problems faced by practitioners who aim to apply RL to their own situations. These include issues with problem specification, safety, off-policy evaluation, deployment, and human factors. I will present recent work on Bayesian optimization at Facebook which address these concerns, including experimenting in noisy non-stationary environments, multi-objective optimization, combining simulation and real-world experiments, and contextual policy search.

Biography
Eytan Bakshy is a principal scientist at Facebook, where he leads the Adaptive Experimentation team. Eytan’s work focuses on developing robust, general-purpose methods for sequential decision making under uncertainty, and applying these methods broadly across Facebook and sister companies. His interests include Bayesian optimization, Bayesian machine learning, causal inference, and reinforcement learning. Eytan holds a Ph.D. in Information from the University of Michigan, and a B.S. in Mathematics and Computer Science from the University of Illinois in Urbana-Champaign.