

Lecture by Ran Snitkovsky, April 12, 2021

Title: Stochastic approximation of symmetric Nash equilibria in queueing games

Abstract:

We suggest a novel stochastic approximation algorithm to compute a Symmetric Nash Equilibrium strategy in a general queueing game with a finite action space. The algorithm involves a single simulation of the queueing process with dynamic updating of the strategy at regeneration times. Under mild assumptions regarding the regenerative structure of the process the algorithm converges to a symmetric equilibrium strategy almost surely. This yields a powerful tool that can be used to approximate equilibrium strategies in a broad range of strategic queueing models in which direct analysis is impracticable.