Optimization in the space of probabilities with MCMC: Uncertainty quantification and sequential decision making

Abstract:
I will present MCMC algorithms as optimization over the KL-divergence in the space of probabilities. By incorporating a momentum variable, I will discuss an algorithm which performs accelerated gradient descent over the KL-divergence. Using optimization-like ideas, a suitable Lyapunov function is constructed to prove that an accelerated convergence rate is obtained. I will then discuss how MCMC algorithms compare against variational inference methods in parameterizing the gradient flows in the space of probabilities and how it applies to sequential decision making problems.

Host: Jiawang Nie

Wednesday, October 28, 2020
3:00 PM
Zoom Meeting ID: 998 9823 3654 Password: 278CFA20