

Possible Project 4

This is a research oriented project. We want to prove a better convergence rate for the SGD with momentum compared with the usual SGD.

- Finish reading two papers: "Underdamped Langevin MCMC: a non-asymptotic analysis" and "Bridging the Gap between constant step size stochastic gradient descent and Markov chains". Write a summary. This is for study notes for the course.
- If you want to do extra things, you should be good at coding and want to do some analysis. Discuss with me. If possible, I can assign more things. If you can finish them, these will be considered as the new things. Depending on the eventual results we have, we can decide whether it is enough for a paper or not.