

6 Week 6 - Bayesian Optimization

6.1. Create several new experimental settings for Bayesian optimization, e.g. decide on the input dimension, some functions to optimize, and the noise model (some noisy, some not). Perform a simulation study to investigate the performance of the three Bayesian optimization algorithms considered in the different experimental settings. You should select an appropriate horizon T for each setting and plot the cumulative regrets of each algorithm in the different environments, averaged over some appropriate number of replications. Comment on the conclusions of the simulation study.

6.2. Investigate what happens to the performance of Bayesian optimization algorithms as the dimension of the input space increases.