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Deep Learning Lab
Exercise-5 Report

This was an interesting exercise where the goal was to implement random search and Bayesian optimization to find a good hyperparameter setting for a three layer convolutional neural network. We did not train actual neural networks but the surrogates were provided for this exercise.

Following is the plot obtained for performance.
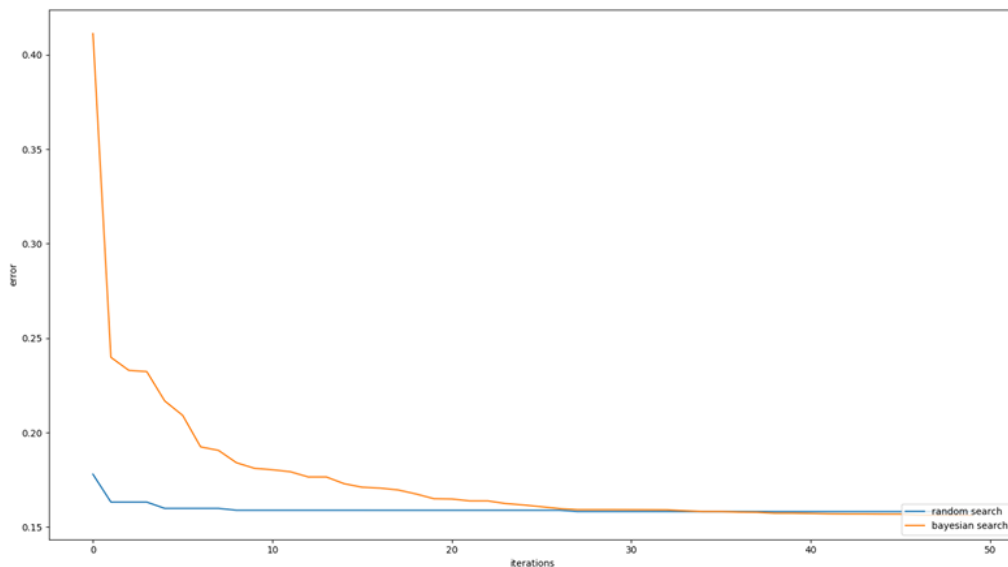
Random search starts with a lower error value as compared to Bayesian optimization. It takes almost 35 to 40 iterations for Bayesian optimization to get better than random search. Random search has a better value in the beginning because configuration is chosen randomly but Bayesian eventually gets better because it takes previous performance into account.

Following is the plot obtained for runtimes.
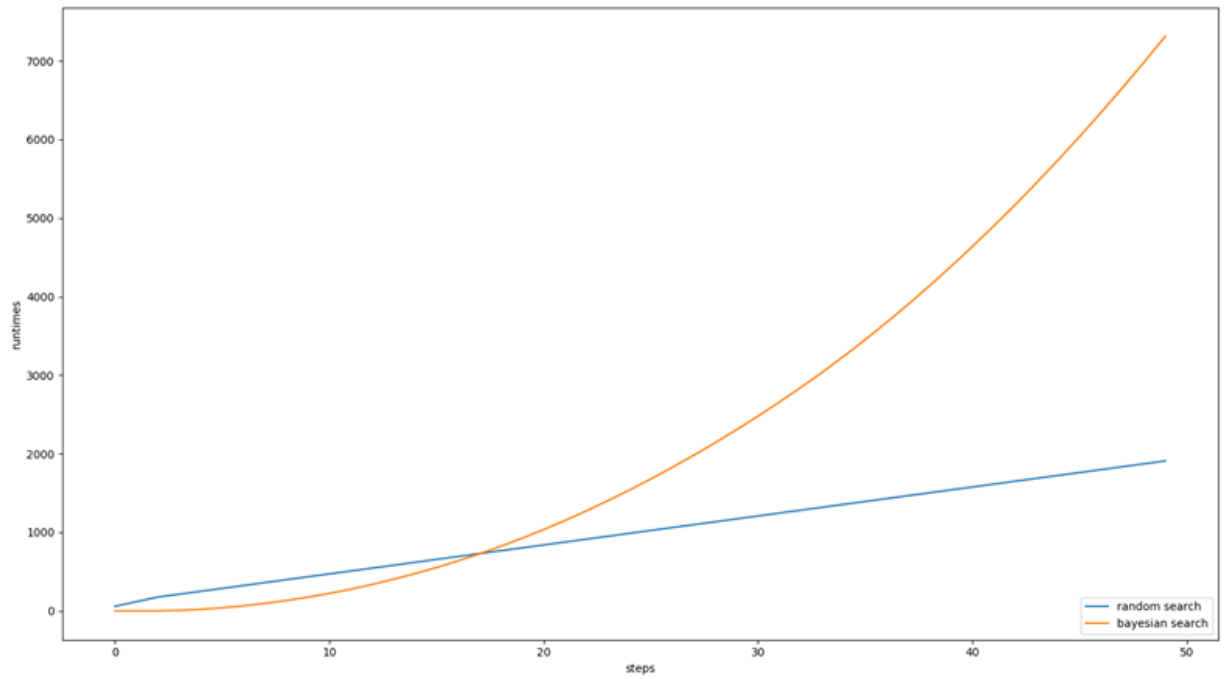
This shows that evaluating true objective function would have been very expensive especially for Bayesian optimization.