REPORT
EXERCISE 4
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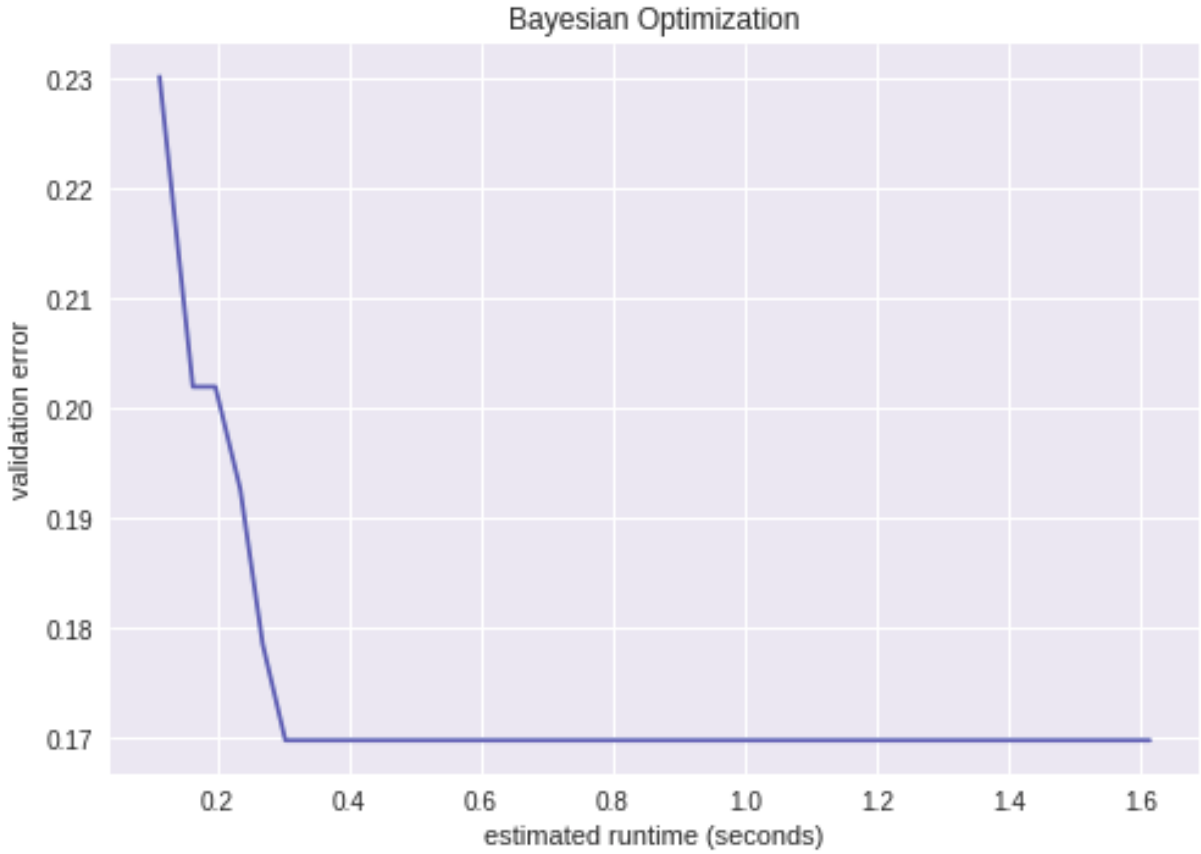
We were given the tasks of Bayesian optimization,hyper band optimization and the combination of both of these optimization methods known as BOHB. Evaluating neural networks consumes a lot of time,as a result we used a surrogate benchmark to evaluate the further hyper parameter configurations for evaluating the loss.

Bayesian Optimization evaluation

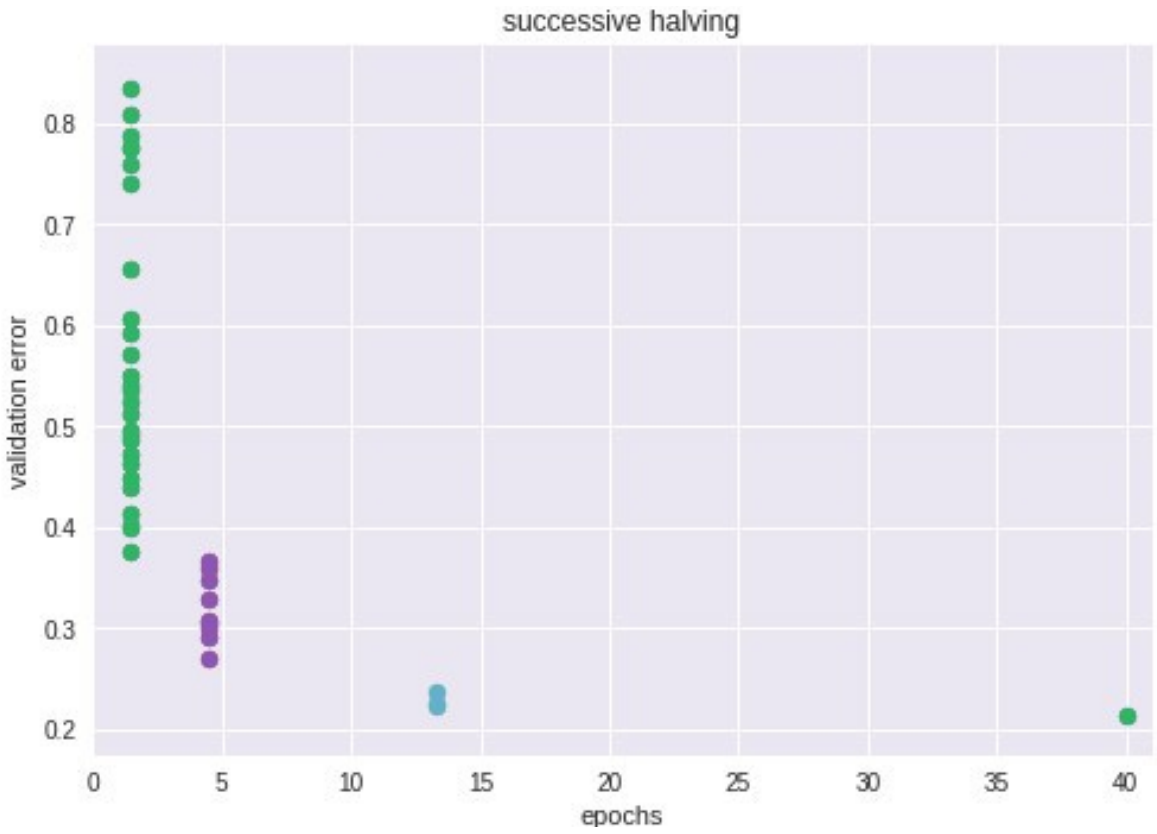
All hyper parameters are treated as continuous variables .In the start some data is collected using N random configurations.

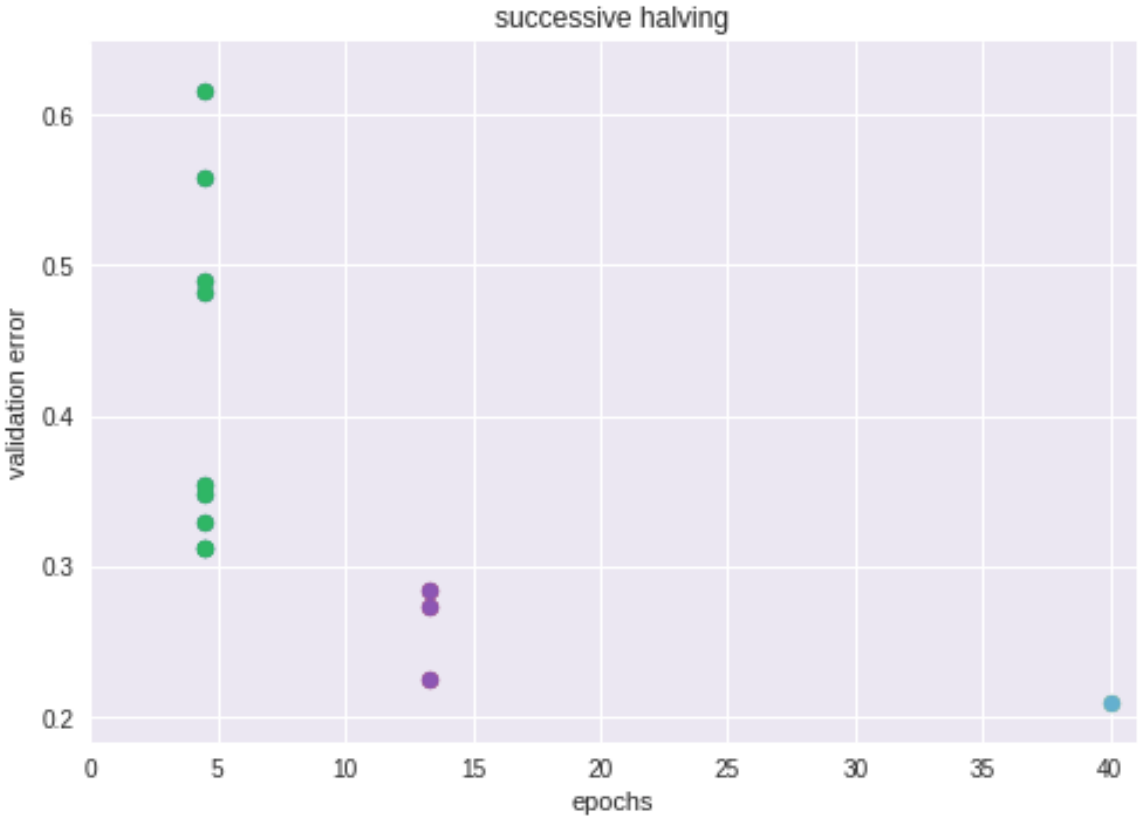
Here is the following result:-



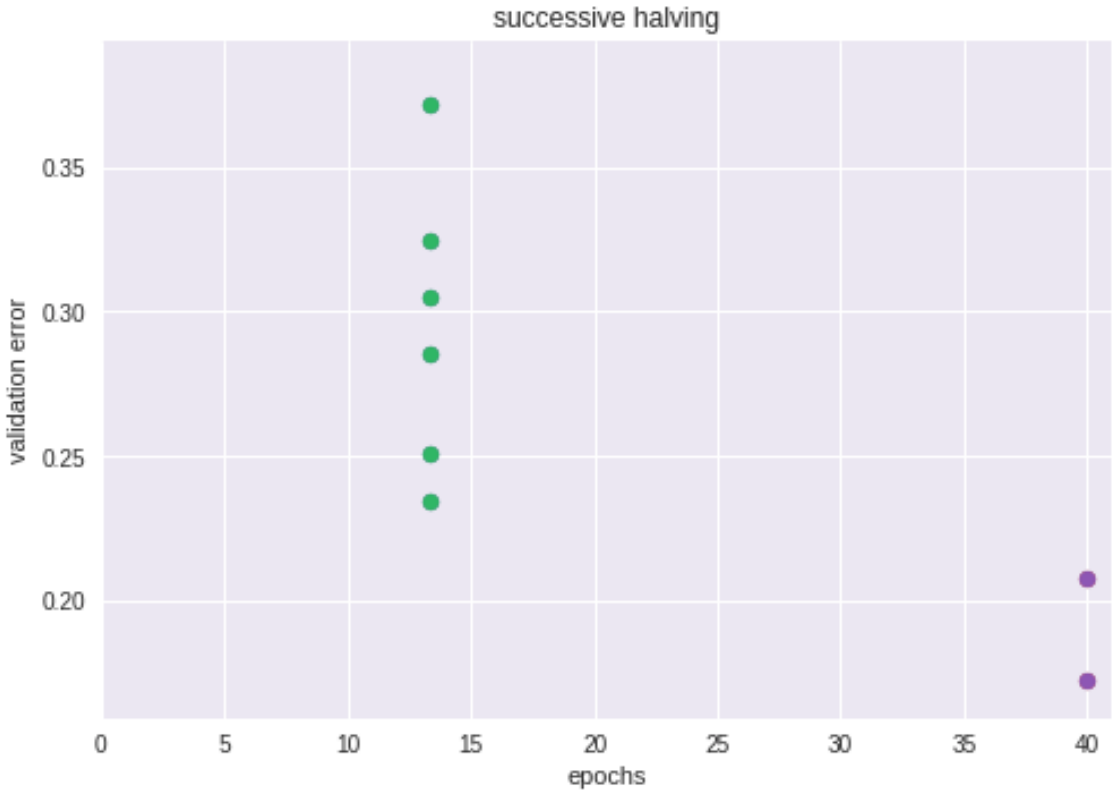
Hyperband evaluation

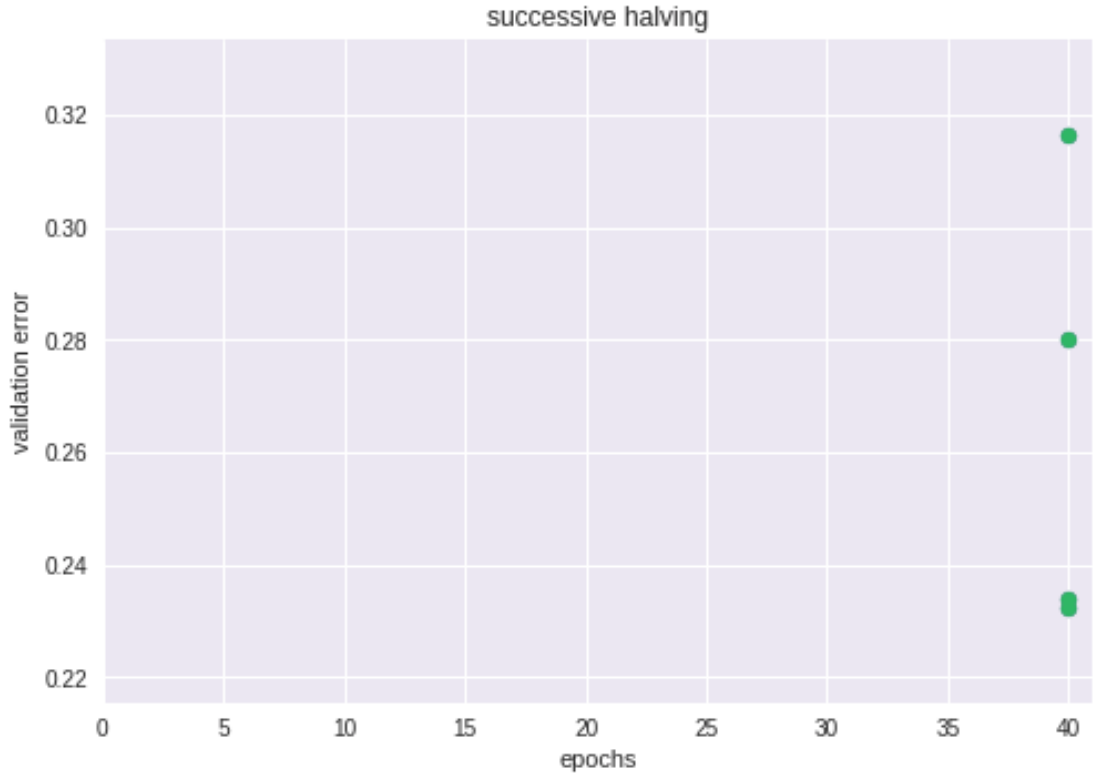
Hyperband configures configures randomly.We use the learning cureve as the fidelity to speed up the optimization process.
We first used the successive halving strategy to allocate resources to the fixed set of configuration.It’s the method of saving our resources judging on the performance of the mini budget.We got the following results:-





successive halving





Combination of both of these methods was not implemented in my code.