**Analyzing Randomized Optimization Problems**

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**Introduction:**

In the first part of the paper I will analyze and show how randomized optimization algorithms, particularly, randomized hill climbing, genetic algorithms, and simulated annealing performed on finding weights for a feedforward neural network. This is the same type of neural network that was used on the first project, but the first project’s neural network was trained using back propagation. Furthermore, I will compare the results that I got from my first Project using the Breast Cancer Dataset with the results that I get from using randomized optimization methods.

perform on 2 different datasets. For each algorithm, I will briefly explain the algorithm, the manipulated parameters, and then analyze the results. For all the experiments below if I didn’t mention parameters that I changed, these were kept at the default values. Additionally, I split the data into random, shuffled, sets of 75% and 25% for training and testing respectively. For the learning curves I incremented the training data in step sizes of 10%, from 10% to 100%. Finally, for all graphs please keep in mind that axises are on different scales.