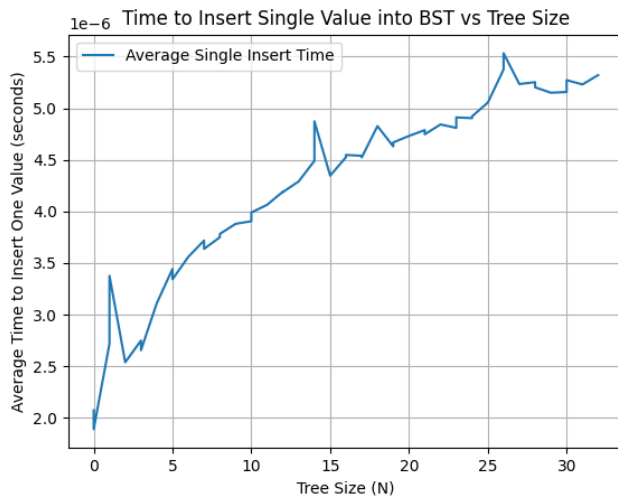Average Height of Random BSTs vs Number of Nodes

When finding the average tree height of a random BST with N nodes, it can be seen that the curve approximates a logarithmic function of N. This is expected behavior as BST height should be, on average, O(log(N)).

Time to Insert Single Value into BST vs Tree Size

Similarly, when charting the average time for inserting a single value into a random BST with N nodes, the curve also resembles a logarithmic function of N. Spikes in the graph are likely trees with randomly unbalanced structures. The path to a given node from the root should be O(log(N)) as well.