Introduction to Artificial Intelligence
MNIST and CIFAR10 with Boundary Trees

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1 MNIST

Changing the maximum branching factor, k, played a large role in both accuracy as well as the speed of training and querying. As k grows, it takes longer to train and query, although the accuracy is higher, so it may be worth it depending on the use case. For example:

1. k = ∞
2. accuracy = 88.2%
3. training = 156.22 seconds
4. testing = 33.97 seconds

1. k = ∞
2. accuracy = 85%
3. training = 72.21 seconds
4. testing = 14.34 seconds

2 CIFAR10