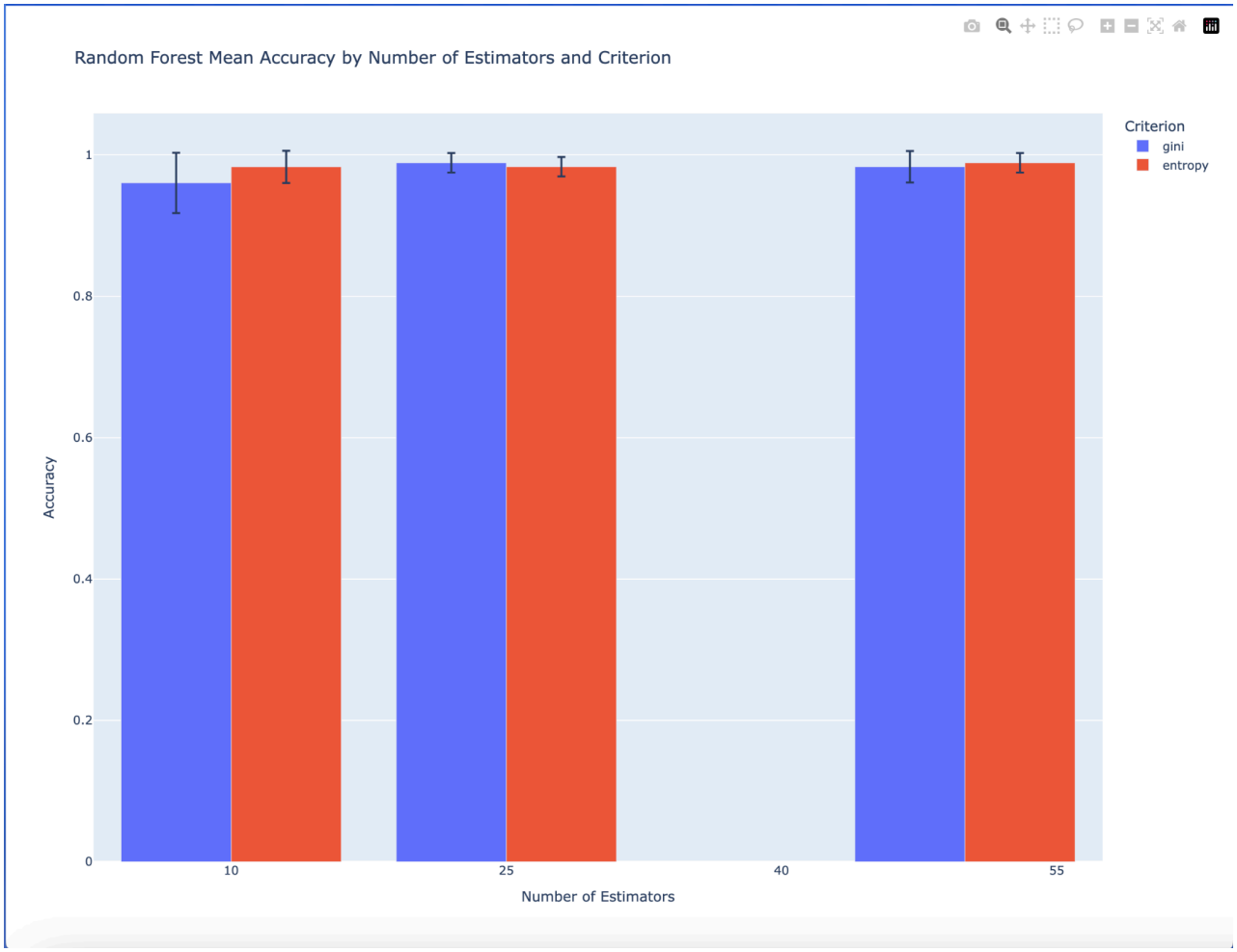
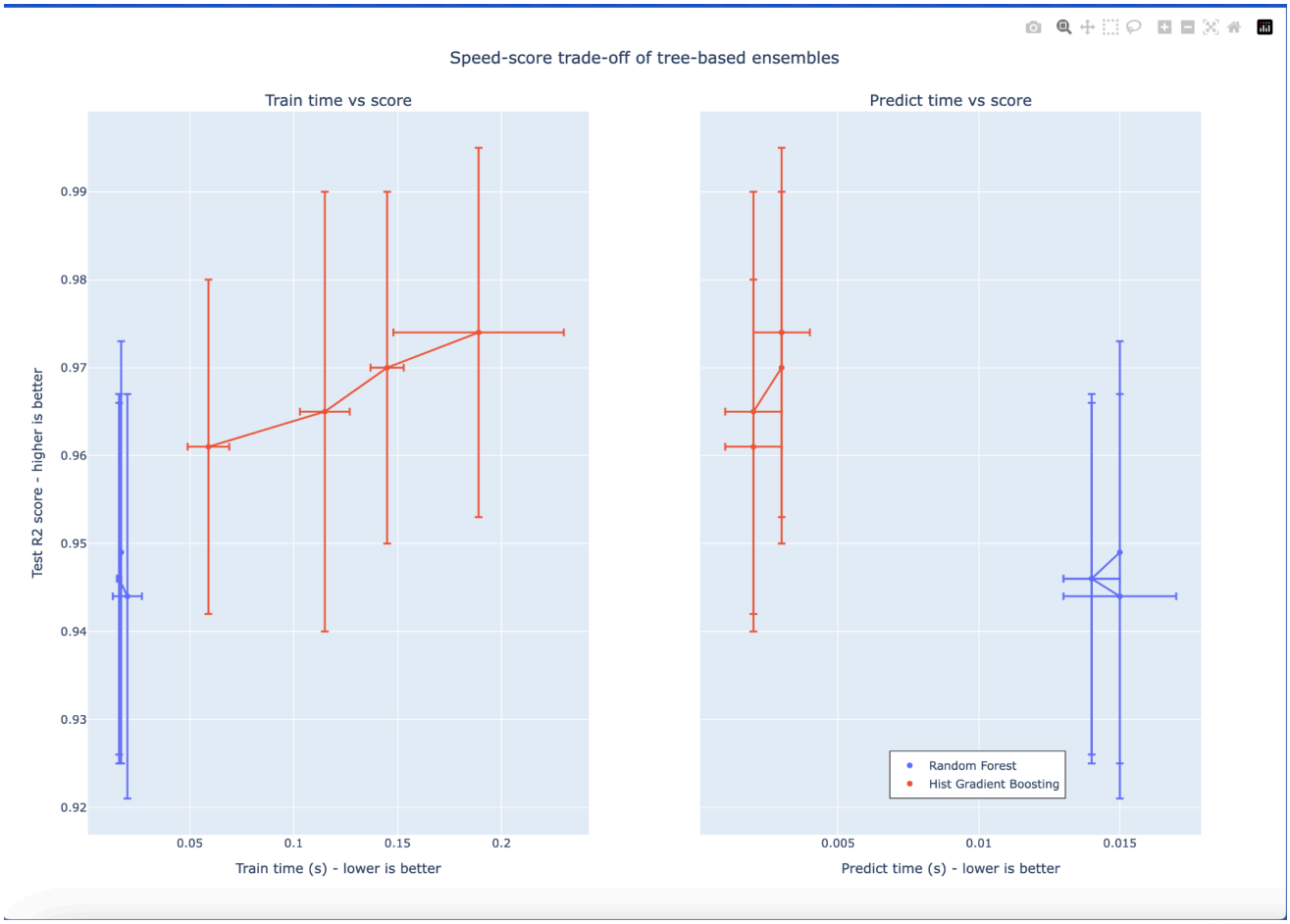
Paris Hoffman

Assignment #5

Charts





Part 4. Utility
Sandy: 60/3 = 20 min/km
Smooth: 60/5 = 12min/km
Rocky: 60/2 = 30min/km

Route 1 = (0.2 * 20) + (0.3 * 12) + (0.5 * 30) = 4 + 3.6 + 15 = 22.6 * 5 = 113 minutes
Route 2 = (0.4 * 20) + (0.2 * 12) + (0.4 * 30) = 8 + 2.4 + 12 = 22.4 * 7 = 156.8 minutes
Route 3 = (0.5 * 20) + (0.4 * 12) + (0.1 * 30) = 10 + 4.8 + 3 = 17.8 * 6 = 106.8 minutes

Answer: Route 3 is the best

Updated Route 1: (0.7 * -20) + (0.3 * 15) = -14 + 4.5 = -9.5 + 113 = 103.5 minutes
Updated Route 3: (0.6 * 40) + (0.4 * 0) = 24 + 0 = 24 + 106.8 = 130.8 minutes

Answer: Route 1 is now the best

If Route 2 is Not Rocky:
(0.4 * 20) + (0.2 * 12) = 8 + 2.4 = 10.4min/km = 7 * 10.4 = 72.8 minutes

Probability Satellite Says Not Rocky: 0.6

If Route 2 is rocky: 7 * 30 = 210 minutes

How Long to Wait for the Satellite?
Expected time for Route 2 =
(0.6 * 72.8) + (0.4 * 210) = 43.68 + 84 = 127.68 minutes
127.68 - 103.5 = **24.18 minutes**