**11/03/20**

**Using tictoc**

**Scenario one – 2 target features (Prevalence at times 50 & 75)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total runtime (secs ) | Model runtime (secs ) | Algorithm implementation time? (secs ) |
| Rejection | 1099.54  (18.33 mins) | 859.85 | 239.66 |
| Sequential | 2260.73  (37.68 mins) | 445.98 | 1814.75 |

**Using microbenchmark**

**Scenario one – 2 target features (Prevalence at times 50 & 75)**

**Number of simulations – 60000**

**Targets used – (0.644, 0.404)**

**Parameters used to generate targets – (beta = 0.2, gamma = 0.02)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total runtime (secs ) | Model runtime (secs ) | Algorithm implementation time? (secs ) |
| Rejection | 12386.56  (3.4 hrs) | 331.12 | 12055.44  (3.35 hrs) |
| Sequential | 11025.15  (3.04 hrs) | 213.33 | 10811.82  (3.0 hrs) |

**Scenario two – 3 target features (Prevalence at times 50 & 75 + peak prevalence)**

**Number of simulations – 75000**

**Targets used – (0.622, 0.371, 0.677)**

**Parameters used to generate targets – (beta = 0.2, gamma = 0.02)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total runtime (secs ) | Model runtime (secs ) | Algorithm implementation time? (secs ) |
| Rejection | 18318.17  (5 hrs) | 532.51 | 17785.66  (4.94 hrs) |
| Sequential | 23037.01  (6.4 hrs) | 563.92 | 22473.09  (6.2 hrs) |

**Questions / Challenges:**

1. We want to fix the number of simulations between scenarios but haven’t succeeded because number of steps are determined automatically within sequential. We would like to solicit for ideas on how to circumvent this problem.
2. Using microbenchmark to record time increased runtimes from minutes (tictoc) to hours (microbenchmark), see results above. We would like to find out why this is the case

* Could this be because microbenchmark records time in nanoseconds?

13/03/20

**Using microbenchmark**

**Scenario one – 2 target features (Prevalence at times 50 & 75)**

**Number of simulations – 60000**

**Targets used – (0.644, 0.404)**

**Parameters used to generate targets – (beta = 0.2, gamma = 0.02)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total runtime (secs ) | Model runtime (secs ) | Algorithm implementation time? (secs ) |
| Rejection | 1189.59  (19.83 mins) | 331.12  (5.52 mins) | 858.47  (14.31 mins) |
| Sequential | 2140.81  (35.68 mins) | 213.33  (3.55 mins) | () |
| BMLE | 1089.80  (18.16 mins) | 485.68  (8.08 mins) |  |

**Scenario two – Increase target features and number of simulations**

**target features - Prevalence at times 50 & 75 + peak prevalence**

**Number of simulations – 75000**

**Targets used – (0.622, 0.371, 0.677)**

**Parameters used to generate targets – (beta = 0.2, gamma = 0.02)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total runtime (secs ) | Model runtime (secs ) | Algorithm implementation time? (secs ) |
| Rejection | 1515.44  (25.30 mins) | 532.51  (8.88 mins) | 982.93  (16.42 mins) |
| Sequential | 3514.25  (58.60 mins) | 563.92  (9.40 mins) | 2950.33  (49.20 mins) |
| BMLE | 1472.78  (24.55 mins) |  |  |