**Using Provided Dataset**

1. **Comparison with paper results using same methods as paper**

Dataset 1 (Actual = 10 %)

|  |  |  |
| --- | --- | --- |
| Max Sample Size | E Bayes Upper Bound  (Calculated) | E Bayes Upper Bound  (Given in Paper) |
| 100 Points | 18.93% | 18.23% |
| 500 Points | 16.90% | 16.88% |
| 1000 Points | 16.51% | 16.46% |

Dataset 2 (Actual = 1.9 %)

|  |  |  |
| --- | --- | --- |
| Max Sample Size | E Bayes Upper Bound  (Calculated) | E Bayes Upper Bound  (Given in Paper) |
| 100 Points | 3.81% | 4.10% |
| 500 Points | 2.42% | 2.17% |
| 1000 Points | 2.01% | 1.94% |

How to interpret “confidence interval” (percentage range) for E\_bayes given in the paper? (Is the given percent range a confidence interval?)

**Using asymptotic convergence method**

Dataset 1 (Actual = 10 %)

|  |  |  |
| --- | --- | --- |
| Max Sample Size | E Bayes Upper Bound  (Calculated) | E Bayes Upper Bound  (Given in Paper) |
| 100 Points | 18.57% | 18.23% |
| 500 Points | 16.44% | 16.88% |
| 1000 Points | 13.08% | 16.46% |

|  |  |
| --- | --- |
| Max Sample Size | Dp\_div value, 95% CI  (Calculated) |
| 100 Points | 0.6286 (0.6093, 0.648) |
| 500 Points | 0.6713 (0.6631, 0.6794) |
| 1000 Points | 0.7385 (0.6176, 0.8593) |

Dataset 2 (Actual = 1.9 %)

|  |  |  |
| --- | --- | --- |
| Max Sample Size | E Bayes Upper Bound  (Calculated) | E Bayes Upper Bound  (Given in Paper) |
| 100 Points | 3.06% | 4.10% |
| 500 Points | 1.36% | 2.17% |
| 1000 Points | 1.21% | 1.94% |

|  |  |
| --- | --- |
| Max Sample Size | Dp\_div value, 95% CI  (Calculated) |
| 100 Points | 0.9589 (0.944, 0.9738) |
| 500 Points | 0.9728 (0.9603, 0.9852) |
| 1000 Points | 0.9759 (0.9662, 0.9856) |

Confidence interval for E\_bayes upper bound from dp\_div confidence interval – How to scale the confidence interval? (Is there a way?) Error propogation?

Or do we only care about the difference between upper and lower E\_bayes bound (tightness of bound)? Or is the upper limit E\_bayes bound more important?

Another issue:

In this comparison would the source data for the repeated sampling have to be the exact same to compare the performance (variance) of the asymptotic E\_bayes estimator and the average of many trials estimator (as is done in the paper)?

To make an accurate comparison, is it bad to recreate the data sets?





