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CS541

HW1 Report

Chart, line chart

Description automatically generated

For the graph of over the different values k, the ratio generally average around 1, however I notice that the larger k values tend to be closer to 1 with smaller deviations while the smaller k values have more variance and may deviate more.

1. For +, where

for majority,

The estimate given by the Chebyshev’s is much greater than the one given by Chernoff’s bound. This is probably because Chernoff’s gives an estimate of n that is the lower bound while Chebyshev’s estimate is in between the upper and lower bounds.