Resampling Technique for Simulation Output Analysis

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Abstract

To estimate the probability of long delay in a queuing system using discrete-event simulation studied. We contrast the coverage, half-width, and stability of confidence intervals constructed using two methods: batch means and new resampling technique; binary bootstrap. The binary bootstrap is an extension of the conventional bootstrap that resamples runs rather than data values. Empirical comparisons using known results for the M/M/1 and D/M/10 queues show the binary bootstrap superior to batch means for this problem.

(DISCRETE-EVENT SIMULATION, BOOTSTRAP; SIMULATION OUTPUT ANALYSIS; BINARY TIME SERIES; BATCH MEANS)