DSA 595 Bayesian computations for machine learning
Problem set 3

27 January 2026

Assuming only a base `R` function for generating instances of a uniform$(0, 1)$ random variable, write code to generate instances from each of the 5 posterior distributions that you derived for problem set 1. You can use built-in functions for each of the cumulative distribution functions and their inverses, to facilitate computations via the probability integral transform. Plot a histogram of the random sample drawn from each posterior distribution, and overlay the histogram with the true probability density curve of the posterior distribution. Choose sufficiently large sample sizes and appropriate numbers of bins so that each histogram is a close approximation to the true density curve.