

Stat 362 Topics

Pseudo Random numbers generators, tests, Mersenne Twister

Non-uniform sampling inversion, accept-reject, mixtures, tricks

Classic quadrature Midpoint, Simpson, Gauss

Vectors Gaussian, multinomial, t , Dirichlet, conditional & copula sampling

Objects permutations, rotations, sub-samples, order statistics, matrices

Processes Markov chains, Brownian motions, random walks, diffusions

Correlation induction antithetics, common variates/coupling, stratification

Improved analysis control variates, Rao-Blackwellization

Improved generation importance sampling, splitting, Russian roulette, SAWs

Multiple stratification Latin hypercubes, function anova, orthogonal arrays

Quasi-Monte Carlo I discrepancy, Koksma-Hlawka, Halton

Quasi-Monte Carlo II Sobol', Faure, Niederreiter-Xing, lattices

Randomized QMC Cranley-Patterson, scrambled nets, padding, Latin supercubes

Markov chain MC I Markov chains, Ising, Metropolis-Hastings, Gibbs,

Markov chain MC II tempering, perfect sampling

MC optimization Annealing, genetic algorithms, stochastic programming

And possibly: sequential Monte Carlo