Computational Statistics and Stochastic Optimization

Syllabus

- Kernel Density Estimation and Applications.
- Stochastic Simulation. Inversion Method. Rejection Sampling. Methods for Reducing Variance: Hit and Miss Method, Importance Sampling.
- MCMC methods: Introduction. Metropolis-Hastings Algorithm. Gibbs Sampling.
- Resampling Methods: Bootstrap, Jacknife.
- Cross-Validation.
- Stochastic Optimization: Genetic Algorithm, Simulated Annealing, Tabu Search.
- EM Algorithm.
- Variable Selection Methods. Shrinkage Techniques: Ridge, Lasso.

Bibliography

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