University of TEHRAN

Probabilistic Graphical Models

Problem Set 15

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Problem 1: Reading Summary

Write a summary of the previous lecture. Accompany your report by an audio file (max: 10 minutes) in which you explain in your words important topics of the lecture, particularly:

- Forward sampling; analysis of error

- Rejection sampling; likelihood weighting; importance sampling

- Markov chain; MCMC sampling

- stationary distribution; regular Markov chains

- Using a Markov chain for answering queries

- Detailed balance equation

- Metropolis-Hastings algorithm

* Write down all formulas in your written summary and explain in detail each step of the derivation. In your audio file, only mention the main points of the derivations.

Problem 2: Likelihood weighting sampling

Repeat HW11, problem 2-e by implementing the likelihood weighting sampling in R.

Submit your solutions to naser.elmi@ut.ac.ir and fahimehpalizban@ut.ac.ir by Khordad 21, 1398.