Annealed Importance Sampling Report

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Introduction

Importance sampling and Markov Chain Monte Carlo (MCMC) sampling are methods we have looked at in detail this semester. Both of these procedures provide methods for estimating expectations of functions with respect to some underlying distribution from which it is impossible or infeasible to sample directly. We saw that both of these methods have limitations, however. Most notably, importance sampling provides a very poor, albeit consistent, estimator when the target distribution is on a high dimensional space, and MCMC has trouble converging to stationary distribution when the target distribution is multi-modal.

The method of annealed importance sampling was originally designed as an alternative sampler for target distributions which are not easily sampled from via the methods mentioned in the previou paragraph.

Method

Application

Conclusion

References

Kristiadi, A. (2018). *Introduction to Annealed Importance Sampling.* Retrieved from https://wiseodd.github.io/techblog/2017/12/23/annealed-importance-sampling/

Neal, R. M. (2001). Statistics and computing. *Annealed importance sampling*, 11(2), 125-139.