TTIC 31230 Fundamentals of Deep Learning

Problems for Graphical Models.

Problem 1 This problem is on Pseudolikelihood. Consider a graphical model with N nodes numbered 1 through N and where each node can take on one of the values 0 or 1. We let $\hat{x}$ be an assignment of a value to every node. We define the score of $\hat{x}$ by

$$f(\hat{x}) = \sum_{i=1}^{N-1} \mathbb{1}[\hat{x}[i] = \hat{x}[i+1]]$$

The probability distribution over assignments is defined by a softmax.

$$Q_f(\hat{x}) = \operatorname*{softmax}_{\hat{x}} f(\hat{x})$$

What is the **Pseudoliklihood** of the all ones assignment?