5. Maximum Likelihood Estimate

Exercises due Apr 19, 2023 08:59 -03 Completed

Maximum Likelihood Estimate

0:00 / 0:00 1.0x

Video

Download video file

Transcripts

Download SubRip (.srt) file

Download Text (.txt) file

Number of Parameters

1/1 point (graded)

For the following set of questions, let us consider generating documents that are Englis
(assume no spaces or punctuation), i.e. the vocabulary [mathjaxinline]W = \{ a, b, c ... ,z
made up of all the letters in the English alphabet.

We would like to generate documents using this vocabulary using a multinomial model
[mathjaxinline]M[/mathjaxinline]. As described in the lecture, what is the minimal numb
the model [mathjaxinline]M[/mathjaxinline] should have? Enter your answer below.

25

Submit You have used 2 of 2 attempts

- [ ] [mathjaxinline]\theta ^*_ z = 2 \theta ^*_ e[/mathjaxinline]
- [x] [mathjaxinline]\theta ^*_ e = 2 \theta ^*_ z[/mathjaxinline]
- [ ] [mathjaxinline]\theta ^*_ z = \theta ^*_ e[/mathjaxinline]
- [ ] [mathjaxinline]\theta ^*_ z + \theta ^*_ e = 2[/mathjaxinline]

✔

Submit You have used 1 of 2 attempts

Maximum Likelihood Estimate for Poisson Distribution

2/2 points (graded)

Maximum Likelihood Estimate (MLE) is a very general method that can be applied to bo
discrete distributions. In this problem, we assume we have a training data [mathjaxinlin
n\,[/mathjaxinline] that are drawn from a Poisson distribution, with probability mass fun

[mathjax]P(X=x)=\frac{\lambda ^ x e^{-\lambda }}{x!}.[/mathjax]

We want to use MLE to fit the parameter [mathjaxinline]\lambda[/mathjaxinline] with th
so, we first compute the log likelihood of our training data, or in other words, log of the
the sample [mathjaxinline]\, x_1,x_2,\ldots ,x_ n\,[/mathjaxinline] given the model and wh
i[/mathjaxinline] are independent. The log likelihood is...

- [ ] [mathjaxinline]\log \lambda \sum _ i x_ i + n\lambda + \sum _ i \log (x_ i!)[/mathjax
- [x] [mathja
- [ ] [mathjaxinline]\log \lambda \prod _ i x_ i -n\lambda - \prod _ i \log (x_ i!)[/mathjax

‹ Previous Next ›

Discussion

Topic: Unit 4. Unsupervised Learning (2 weeks) :Lecture 15. Generative Models / 5. Maximum Likelihood Estimate

Show all posts

? What does it mean by the minimal number of parameters?

I thought the minimal number of parameter is 26. But it isn't correct. I wonder I misunderstand the meaning o