5. Temperature

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Project due Oct 21, 2020 05:29 IST *Completed*

We will now explore the effects of the temperature parameter in our algorithm.

You will be working in the files `part1/main.py` and `part1/softmax.py` in this problem

Effects of Adjusting Temperature

0.0/1.0 point (graded)

Explain how the temperature parameter affects the probability of a sample $x^{(i)}$ being assigned a label that has a large θ. What about a small θ?

- [x] Larger temperature leads to less variance
- [ ] Smaller temperature leads to less variance ✔
- [ ] Smaller temperature makes the distribution more uniform

✖

Solution:

Smaller temperature parameter means that there is less variance in our distribution, and larger temperature, more variance. In other words smaller temperature parameter favors larger thetas, and larger temperature parameter makes the distribution more uniform.

Submit You have used 3 of 3 attempts

Answers are displayed within the problem

Reporting Error Rates

2.0/2.0 points (graded)

Set the temperature parameter to be 0.5, 1, and 2; re-run `run_softmax_on_MNIST` for each one of these (add your code to the specified part in **main.py**).

$\text{Error}|_{T=0.5} =$ 0.08399999999999996 ✔ **Answer:** 0.084

$\text{Error}|_{T=1} =$ 0.10050000000000003 ✔ **Answer:** 0.1005

$\text{Error}|_{T=2} =$ 0.1261 ✔ **Answer:** 0.1261

Submit You have used 1 of 20 attempts

Answers are displayed within the problem

Return the `temp_parameter` to be 1 before moving on to the next section.

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?	can we make each section less dependent? I couldn't get the last question from previous tab running because my process got killed when running softmax function part from main....	1
	Small hint/reminder for "Effects of Adjusting Temperature" For a probability mass function where one outcome has probability = 1, and the rest of the outcomes have probability = 0, the variance ...	5
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?	Effects of Adjusting Temperature on the Cost and training	3
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?	[STAFF] Error main Hi, I have an error when i try to run my main.py : "File "/home/user/.local/lib/python3.5/site-packages/scipy/sparse/coo.py", line 198, in __...	5

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