

Lesson 10 (Softmax)

- (a) Write a Python function that implements the softmax function. Vectorize your code for efficiency. Write your code so that it does not numerically overflow for large inputs.
- (b) Check that the output values of your softmax function are always:
- (i) between zero and one
 - (ii) sum to one

Do this by generating random inputs of various lengths.

- (c) Describe what happens to the output values of the softmax function when the input values are large positive and unequal. *It overflows, ~~not~~ fixed after scaled*
- (d) Describe what happens to the output values of the softmax function when the input values are small positive and unequal. *It gives ~~correct result~~ ~~that~~ and all the others are 0*
- (e) Describe what happens to the output values of the softmax function when the input values are large positive and large negative values. *correct result, values are from 0 to 1. 1 for the largest, 0 for others*
- (f) Describe what happens to the output values of the softmax function when the input values are small positive and small negative values. *values are really small*