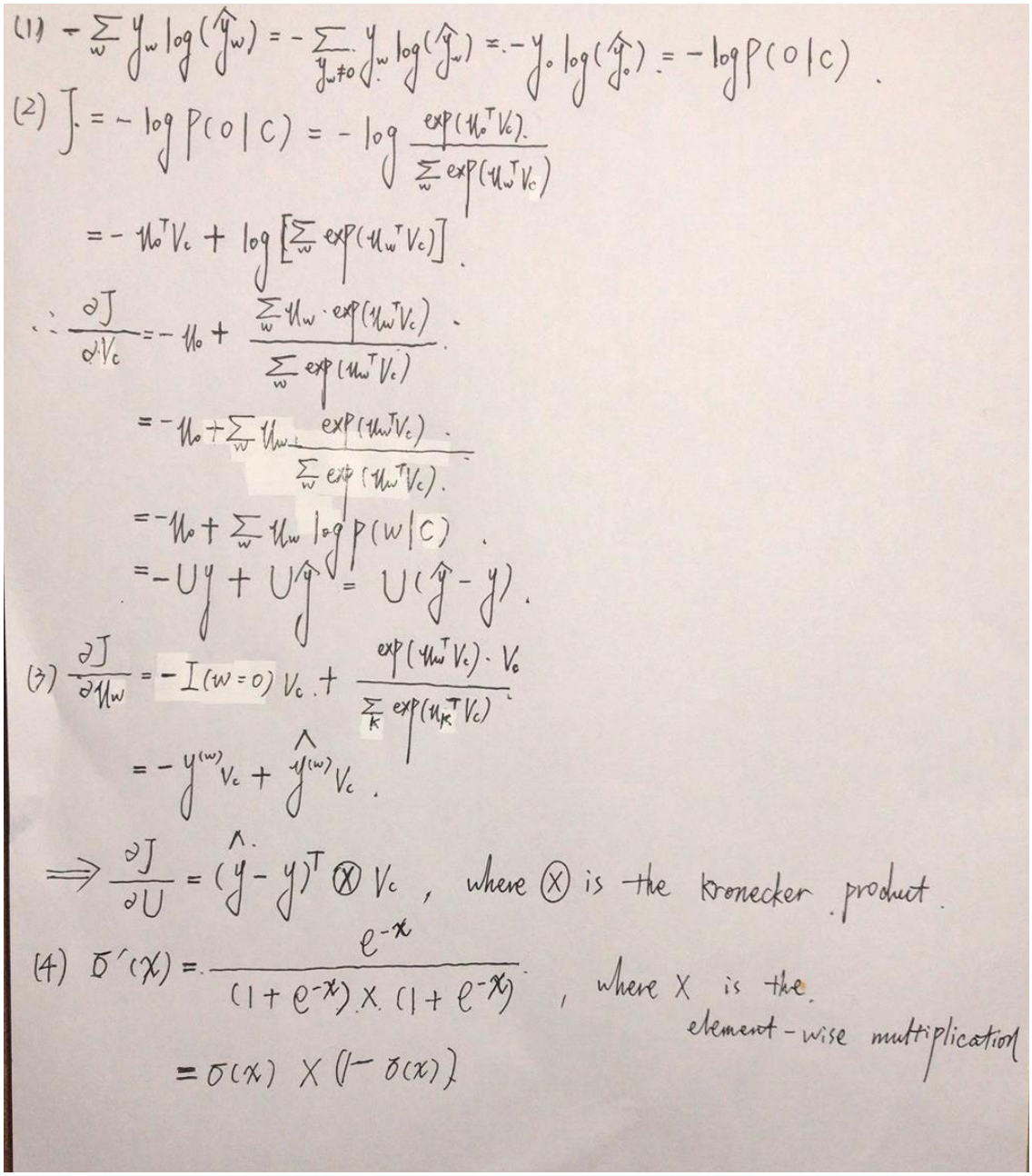
Week2 Assignment

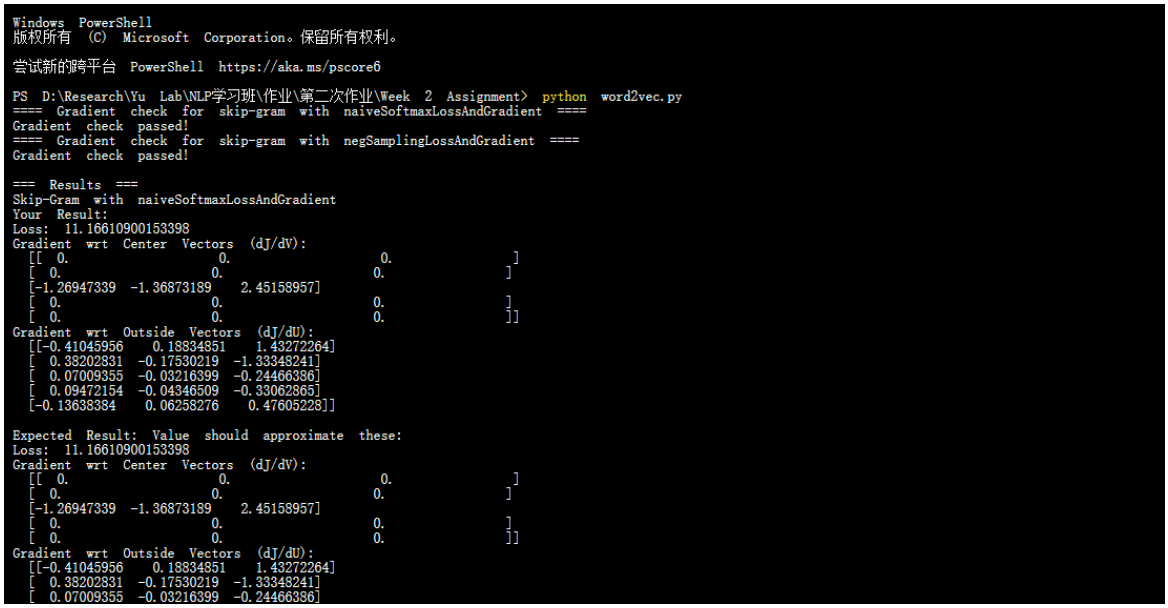
Ma Yubo

Part One



Part Two

The source codes have uploaded on Github and here's the running result:



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Windows PowerShell
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尝试新的跨平台 PowerShell https://aka.ms/pscore6

PS D:\Research\Yu Lab\NLP学习班\作业\第二次作业\Week 2 Assignment> python word2vec.py
==== Gradient check for skip-gram with naiveSoftmaxLossAndGradient ====
Gradient check passed!
==== Gradient check for skip-gram with negSamplingLossAndGradient ====
Gradient check passed!

=== Results ===
Skip-Gram with naiveSoftmaxLossAndGradient
Your Result:
Loss: 11.16610900153398
Gradient wrt Center Vectors (dJ/dV):
 [[ 0.          0.          0.          0.        ]
 [ 0.          0.          0.          0.        ]
 [-1.26947339 -1.36873189  2.45158957]
 [ 0.          0.          0.          0.        ]
 [ 0.          0.          0.          0.        ]]
Gradient wrt Outside Vectors (dJ/dU):
 [[-0.41045956  0.18834851  1.43272264]
 [ 0.38202831 -0.17530219 -1.33348241]
 [ 0.07009355 -0.03216399 -0.24466386]
 [ 0.09472154 -0.04346509 -0.33062865]
 [-0.13638384  0.06258276  0.47605228]]

Expected Result: Value should approximate these:
Loss: 11.16610900153398
Gradient wrt Center Vectors (dJ/dV):
 [[ 0.          0.          0.          0.        ]
 [ 0.          0.          0.          0.        ]
 [-1.26947339 -1.36873189  2.45158957]
 [ 0.          0.          0.          0.        ]
 [ 0.          0.          0.          0.        ]]
Gradient wrt Outside Vectors (dJ/dU):
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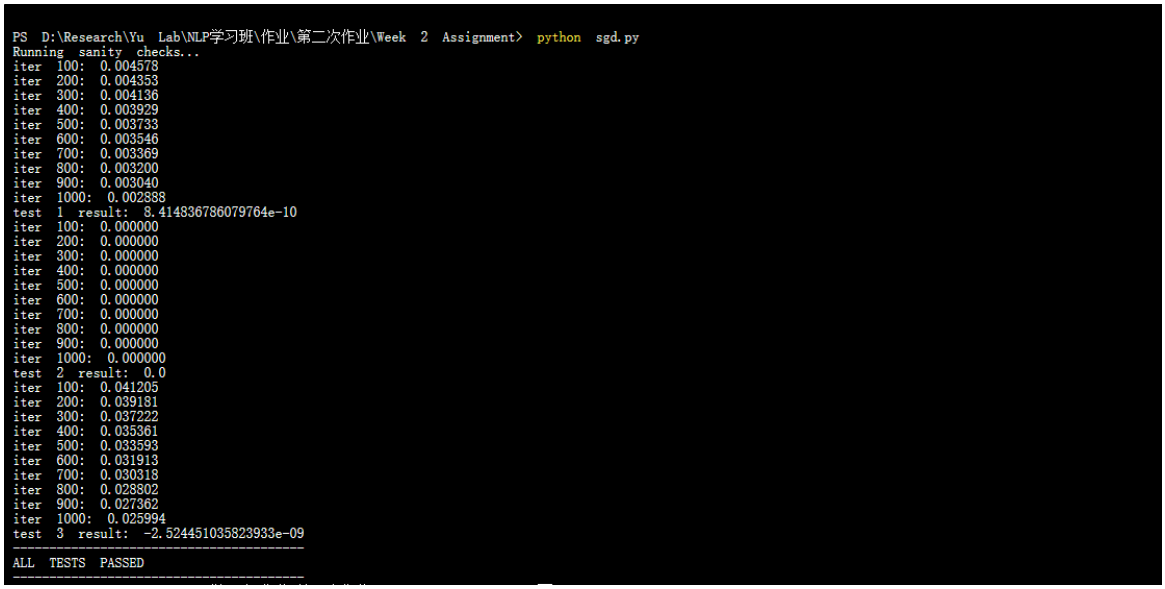
 [ 0.07009355 -0.03216399 -0.24466386]
```



```
PS D:\Research\Yu Lab\NLP学习班\作业\第二次作业\Week 2 Assignment> python sgd.py
Running sanity checks...
iter 100: 0.004578
iter 200: 0.004353
iter 300: 0.004136
iter 400: 0.003929
iter 500: 0.003733
iter 600: 0.003546
iter 700: 0.003369
iter 800: 0.003200
iter 900: 0.003040
iter 1000: 0.002888
test 1 result: 8.414836786079764e-10
iter 100: 0.000000
iter 200: 0.000000
iter 300: 0.000000
iter 400: 0.000000
iter 500: 0.000000
iter 600: 0.000000
iter 700: 0.000000
iter 800: 0.000000
iter 900: 0.000000
iter 1000: 0.000000
test 2 result: 0.0
iter 100: 0.041205
iter 200: 0.039181
iter 300: 0.037222
iter 400: 0.035361
iter 500: 0.033593
iter 600: 0.031913
iter 700: 0.030318
iter 800: 0.028802
iter 900: 0.027362
iter 1000: 0.025994
test 3 result: -2.524451035823933e-09
------------------------------------------
ALL TESTS PASSED
------------------------------------------
```