Machine Learning Fall 2016

HW5 Writeup Template

**1.3**

**thetaPos**

love: 0.001003368842756988

wonderful: 0.0002166985340981517

best: 0.0010616407174724575

great: 0.0009796958936538287

superb: 9.469179641263771e-05

still: 0.000728398433943367

beautiful: 0.00026404443230447055

bad: 0.00048438495857233905

worst: 6.19138668851862e-05

stupid: 6.009287080032778e-05

waste: 2.913593735773468e-05

boring: 7.101884730947828e-05

?: 0.002010379677683693

!: 0.0008121642538468542

UNK: 0.9921223709369025

**thetaNeg**

love: 0.0007775400830054571

wonderful: 8.141780973879131e-05

best: 0.0007124058352144239

great: 0.0005231094275717342

superb: 2.6460788165107175e-05

still: 0.0006716969303450283

beautiful: 0.00014044572179941503

bad: 0.0014125989989680293

worst: 0.0003663801438245609

stupid: 0.0002971750055465883

waste: 0.00016894195520799198

boring: 0.00034806113663333284

?: 0.0031060894415348888

!: 0.0015387966040631559

UNK: 0.9898288801183815

\*Note: “love” includes words love, loving, loves, loved

**Explanation of how thetaPos and thetaNeg were computed (use equations if necessary):**

**1.4**

**Multinomial Naive Bayes Classifier (MNBC) test set Accuracy:**

MNBC classification accuracy = 0.6783333333333333

**sklearn.naive\_bayes.MultinomialNB test set Accuracy:**

Sklearn MultinomialNB accuracy = 0.678333333333

**Explanation of how you test using MNBC (use equations if necessary):**

**\*\*MNBC Extra Credit test set accuracy and discussion\*\*:**

**1.5**

**Multinomial Naive Bayes Classifier Testing with non-BOW test set Accuracy:**

**Explanation of how you test using MNBC with non-BOW (use equations if necessary):**

**\*\*MNBC non-Bow testing Extra Credit test set accuracy and discussion\*\*:**

**1.6**

**thetaPosTrue**

love:

wonderful:

best:

great:

superb:

still:

beautiful:

bad:

worst:

stupid:

waste:

boring:

?:

!:

UNK:

**thetaNegTrue**

love:

wonderful:

best:

great:

superb:

still:

beautiful:

bad:

worst:

stupid:

waste:

boring:

?:

!:

UNK:

\*Note: “love” includes words love, loving, loves, loved

**Explanation of how thetaPosTrue and thetaNegTrue were computed (use equations if necessary):**

**Multivariate Bernoulli Naive Bayes Classifier (BNBC) test set Accuracy:**

**Explanation of how you test using BNBC (use equations if necessary):**

**\*\*BNBC Extra credit test set accuracy and discussion\*\*:**