# **COMP 543, Tools and Models for Data Science**

Chengyin Liu, cl93

## **Assignment #4**

#### #task 1

20\_newsgroups/comp.graphics/37261:

- [8. 2. 6. 3. 12. 4. 3. 6. 2. 1. 1. 5. 2. 2. 2. 3. 1. 1.
- 1. 1. 3. 1. 1. 2. 3. 4. 1. 1. 1. 1. 1. 3. 1. 1. 1. 2.
- 1. 1. 1. 2. 1. 1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 2. 1. 1.
- 2. 2. 1. 2. 1. 1. 1. 3. 4. 1. 1. 1. 1. 2. 1. 1. 1. 1.
- 1. 1. 1. 1. 2. 1. 1. 1. 5. 2. 2. 1. 1. 5. 1. 4. 1.
- 1. 1. 2. 1. 2. 1. 11. 1. 1. 1. 1. 2. 2. 2. 5. 1. 2. 1.
- 1. 1. 2. 1. 2. 1. 2. 4. 1. 1. 1. 5. 1. 1. 1. 1. 2. 4.
- 1. 1. 1. 3. 1. 1. 1. 3. 2. 2. 1. 1. 6. 1. 6. 1. 1.
- 3. 1. 1. 2. 1. 1. 1. 1. 2. 7. 1. 1. 1. 1.

## 20\_newsgroups/talk.politics.mideast/75944:

[135, 37, 71, 28, 49, 19, 46, 16, 13, 22, 9, 22, 11, 7,

- 7. 6. 4. 6. 12. 11. 10. 3. 10. 4. 2. 21. 5. 4.
- 2. 2. 1. 1. 1. 5. 1. 23. 5. 2. 1. 6. 8. 4.
- 7. 3. 3. 2. 1. 1. 6. 4. 4. 7. 1. 8. 7. 13.
- 4. 4. 10. 3. 3. 2. 2. 3. 7. 4. 1. 2. 4. 8.
- 4. 7. 2. 1. 1. 2. 1. 2. 2. 1. 5. 3. 3. 3.
- 1. 1. 1. 2. 1. 4. 3. 1. 3. 3. 4. 7. 1. 2.
- 1. 3. 2. 1. 4. 6. 3. 11. 1. 6. 3. 1. 3. 1.
- 2. 1. 1. 1. 3. 3. 2. 5. 2. 2. 2. 2. 1. 1.
- 1. 1. 1. 3. 1. 1. 1. 3. 3. 4. 1. 1. 5.

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1. 1. 2. 6. 2. 2. 1. 1. 1. 1. 1. 1. 3. 5.
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1. 1. 1. 4. 2. 3. 1. 1. 2. 1. 2. 1.]

## 20\_newsgroups/sci.med/58763:

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#### #task 2

20\_newsgroups/comp.graphics/37261:

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1.12875531e-02 1.21246137e-02 1.11134211e-02 1.17675584e-02 1.13832730e-02 1.16547374e-02 1.19141955e-02 1.18137818e-02 2.44437150e-02 1.30888977e-02 1.22682308e-02 1.23492655e-02 1.36152909e-02 6.70576326e-02 2.64925945e-02 2.65105285e-02 1.24746487e-02 1.27792476e-02 6.61867722e-02 1.24817551e-02 5.52019210e-02 1.28262615e-02 1.36555612e-02 1.34684809e-02 2.68608061e-02 1.36860876e-02 3.05650009e-02 1.38970956e-02 1.68107505e-01 1.47351409e-02 1.49975608e-02 1.47211524e-02 1.51847799e-02 3.02423881e-02 3.00867717e-02 2.97860634e-02 8.19522299e-02 1.54520402e-02 3.20808221e-02 1.60197115e-02 1.61673918e-02 1.61673918e-02 3.42175904e-02 1.61890353e-02 3.41040061e-02 1.63674545e-02 3.57578004e-02 7.21063220e-02 1.79519198e-02 1.75036829e-02 1.71958463e-02 1.04525243e-01 1.98389100e-02 2.03293950e-02 1.82611903e-02 1.84273379e-02 4.21793321e-02 7.53386184e-02 1.89823349e-02 1.89323752e-02 1.91900437e-02 5.65039638e-02 1.92989800e-02 1.94116097e-02 1.88831556e-02 1.92989800e-02 5.99154543e-02 3.94222301e-02 4.00806414e-02 2.01817148e-02 2.03293950e-02 1.32463276e-01 2.13873809e-02 1.40932708e-01 2.11859702e-02 2.34887847e-02 6.83602834e-02 2.11859702e-02 2.18310067e-02 4.36620135e-02 2.22075140e-02 2.27867611e-02 2.29488547e-02 2.27867611e-02 4.65977793e-02 2.04761052e-01 2.31192643e-02 2.43800272e-02 2.41338213e-02 2.49350241e-021

## 20\_newsgroups/talk.politics.mideast/75944:

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9.87490274e-04 4.42576051e-03 1.48988090e-03 5.28379800e-04 1.04155493e-02 1.85989414e-03 1.49688356e-03 1.04028348e-03 1.64104490e-06 2.22496490e-03 4.73306349e-05 1.23323061e-02 1.00048182e-03 9.82615845e-04 9.64662232e-04 3.03428255e-03 3.98035222e-03 2.13077916e-03 3.57451506e-03 1.57324288e-03 2.17832819e-03 1.07383508e-03 5.39921739e-04 5.59201842e-04 3.84560073e-03 1.44552767e-03 2.21080704e-03 6.23697134e-03 5.62786071e-04 4.85804932e-03 4.90177955e-03 7.84286389e-03 1.77525684e-03 2.30283470e-03 7.10097183e-03 1.96739543e-03 2.16581052e-03 1.30961444e-03 1.36856853e-03 1.94055110e-03 5.81598562e-03 2.86836293e-03 1.36190805e-03 1.45221879e-03 3.47600160e-03 6.74729532e-03 2.96279520e-03 5.13386119e-03 1.55211646e-03 1.39296182e-03 7.44062989e-04 1.48875882e-03 8.19414080e-04 1.73196602e-03 1.59788970e-03 8.03729315e-04 5.12648513e-03 2.50664025e-03 2.55492955e-03 2.43455181e-03 8.67949044e-04 8.89629920e-04 1.51414794e-03 1.87309677e-03 1.47092665e-03 3.73141719e-03 2.90995443e-03 8.94976047e-04 2.74763979e-03 2.73439987e-03 3.94698417e-03 6.42920885e-03 9.40714642e-04 2.15026898e-03 9.90321825e-04 2.99114035e-03 2.01440546e-03 9.62795583e-04 4.03419320e-03 6.18315034e-03 3.09262595e-03 1.14347779e-02 1.04668597e-03 6.46447563e-03 2.94571849e-03 8.38156325e-04 3.02716115e-03 1.24491251e-03 2.07443489e-03 1.04416938e-03 1.06798047e-03 9.54318151e-04 3.66407449e-03 3.47346518e-03 2.18920317e-03 5.46224282e-03 2.17284946e-03 2.28492129e-03 2.17866294e-03 2.14422244e-03 1.21525558e-03 1.35720645e-03 1.14782196e-03 1.20395817e-03 1.23502049e-03 3.65379780e-03 1.48210694e-03 1.19055343e-03 1.72021046e-03 1.19405027e-03 4.09804395e-03 3.68258216e-03 5.05245525e-03 1.23276211e-03 1.23051271e-03 6.42329838e-03 1.26100374e-03 1.22901808e-03 2.77731072e-03 8.50455740e-03

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1.40710369e-03 1.49670039e-03 9.17001344e-03 1.79092410e-03
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2.00901036e-03 1.95795813e-03 2.11539105e-03 3.97721006e-03
1.99436031e-03 2.15625018e-03 5.10086532e-03 2.08844735e-02
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2.10357112e-03 2.13113619e-03 1.38922121e-02 2.03845850e-03
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4.76808788e-03 2.31536868e-03 2.37262998e-03 2.23169164e-03
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4.66179121e-03 2.29860271e-03 2.34866347e-03 2.24355500e-03
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2.69685809e-03 2.63666417e-02 2.43215570e-03 2.53016244e-03
2.61024509e-03 5.12169437e-03 2.51542321e-03 4.94226944e-03
8.18332835e-03 1.16184488e-02 2.52767905e-03 2.55822550e-03
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2.18790622e-02 2.76048458e-03 2.71382549e-03 2.70021105e-03
2.91928762e-03 2.59888849e-03 2.57954772e-03 2.72425603e-03
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2.84075719e-03 2.77182219e-03 2.78339198e-03 2.64881457e-03
2.93435443e-03 6.08084629e-03 2.73846991e-03 2.83219684e-03
2.75675538e-03 2.74571323e-03 2.74937002e-03 2.86274330e-03
3.33110002e-02 5.72548659e-03 2.75675538e-03 2.69685809e-03
2.89503619e-03 2.70358403e-03 2.74207996e-03 5.54364437e-03
2.77565252e-03 2.80726758e-03 8.29271567e-03 8.81840199e-03
3.04659776e-03 2.96039460e-03 2.79123893e-03 3.11938469e-03
2.99331489e-03 2.79520366e-03 2.77565252e-03 2.83219684e-03
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2.90946178e-03 2.82796483e-03 2.76801765e-03 2.81134681e-03
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#task 3

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