

# Taalmodellen Assignment 3

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## Output of the program:

1. *Report the percentage of sentences which are assigned probability zero by each of the models.*

### **Without smoothing:**

Percentage sentences with 0 probability: 1.00

### **With Add-one smoothing:**

Percentage sentences with 0 probability: 0.64

### **With Good-Turing smoothing:**

Percentage sentences with 0 probability: 0.36

2. *Report the first 5 sentence in the test corpus which are assigned a probability of zero by each of the models.*

### **Without smoothing:**

Sentence 1 : Phoo phoo replied Charles what's an evening party Never worth remembering Your father might have asked us to dinner I think if he had wanted to see us You may do as you like but I shall go to the play

Sentence 2 : There was a little awkwardness at first in their discourse on another subject They must speak of the accident at Lyme Lady Russell had not been arrived five minutes the day before when a full account of the whole had burst on her but still it must be talked of she must make enquiries she must regret the imprudence lament the result and Captain Wentworth's name must be mentioned by both Anne was conscious of not doing it so well as Lady Russell She could not speak the name and look straight forward to Lady Russell's eye till she had adopted the expedient of telling her briefly what she thought of the attachment between him and Louisa When this was told his name distressed her no longer

Sentence 3 : Her jealous eye was satisfied in one particular Captain Wentworth was acknowledged again by each by Elizabeth more graciously than before She even addressed him once and looked at him more than once Elizabeth was in fact revolving a great measure The sequel explained it After the waste of a few minutes in saying the proper nothings she began to give the invitation which was to comprise all the remaining dues of the Musgroves To morrow evening to meet a few friends no formal party It was all said very gracefully and the cards with which she had provided herself the Miss Elliot at home were laid on the table with a courteous comprehensive smile to all and one smile and one card more decidedly for Captain Wentworth The truth was that Elizabeth had been long enough in Bath to understand the importance of a man of such an air and appearance as his The past was nothing The present was that Captain Wentworth would move about well in her drawing room The card was pointedly given and Sir Walter and Elizabeth arose and disappeared

Sentence 4 : You will stay I am sure you will stay and nurse her cried he turning to her and speaking with a glow and yet a gentleness which seemed almost restoring the past She coloured deeply and he recollected himself and moved away She expressed herself most willing ready happy to remain It was what she had been thinking of and wishing to be allowed to do A bed on the floor in Louisa's room would be sufficient for her if Mrs Harville would but think so

Sentence 5 : Winthrop however or its environs for young men are sometimes to be met with strolling about near home was their destination and after another half mile of gradual ascent through large enclosures where the ploughs at work and the fresh made path spoke the farmer counteracting the sweets of poetical despondence and meaning to have spring again they gained the summit of the most considerable hill which parted Uppercross and Winthrop and soon commanded a full view of the latter at the foot of the hill on the other side

#### **With Add-one smoothing:**

Sentence 1 : There was a little awkwardness at first in their discourse on another subject They must speak of the accident at Lyme Lady Russell had not been arrived five minutes the day before when a full account of the whole had burst on her but still it must be talked of she must make enquiries she must regret the imprudence lament the result and Captain Wentworth's name must be mentioned by both Anne was conscious of not doing it so well as Lady Russell She could not speak the name and look straight forward to Lady Russell's eye till she had adopted the expedient of telling her briefly what she thought of the attachment between him and Louisa When this was told his name distressed her no longer

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Sentence 5 : The house and grounds and furniture were approved the Crofts were approved terms time every thing and every body was right and Mr Shepherd's clerks were set to work without there having been a single preliminary difference to modify of all that This indenture sheweth

### **With Good-Turing smoothing:**

Sentence 1 : There was a little awkwardness at first in their discourse on another subject They must speak of the accident at Lyme Lady Russell had not been arrived five minutes the day before when a full account of the whole had burst on her but still it must be talked of she must make enquiries she must regret the imprudence lament the result and Captain Wentworth's name must be mentioned by both Anne was conscious of not doing it so well as Lady Russell She could not speak the name and look straight forward to Lady Russell's eye till she had adopted the expedient of telling her briefly what she thought of the attachment between him and Louisa When this was told his name distressed her no longer

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Sentence 4 : Are you serious cried Mary her eyes brightening Dear me that's a very good thought very good indeed To be sure I may just as well go as not for I am of no use at home am I and it only harasses me You who have not a mother's feelings are a great deal the properest person You can make little Charles do anything he always minds you at a word It will be a great deal better than leaving him only with Jemima Oh I shall certainly go I am sure I ought if I can quite as much as Charles for they want me excessively to be acquainted with Captain Wentworth and I know you do not mind being left alone An excellent thought of yours indeed Anne I will go and tell Charles and get ready directly You can send for us you know at a moment's notice if anything is the matter but I dare say there will be nothing to alarm you I should not go you may be sure if I did not feel quite at ease about my dear child

Sentence 5 : Mr Shepherd was eloquent on the subject pointing out all the circumstances of the Admiral's family which made him peculiarly desirable as a tenant He was a married man and without children the very state to be wished for A house was never taken good care of Mr Shepherd observed without a lady he did not know whether furniture might not be in danger of suffering as much where there was no lady as where there were many children A lady without a family was the very best preserver of furniture in the world He had seen Mrs Croft too she was at Taunton with the admiral and had been present almost all the time they were talking the matter over

3. *Explain the differences between the models.*

When using add-one smoothing, every unseen event gets the same probability assigned to. On the other hand, with Good-Turing smoothing the probability for unseen events is better divided.