Week 11 Quiz

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Q1

10.0/10.0 points (graded)

The higher the probability of the test corpus the more perplex is the language model.

- True
- False ✔

Submit You have used 1 of 1 attempt

Answers are displayed within the problem

Q2

10.0/10.0 points (graded)

In calculating the probability of a word, a trigram model looks at the three previous words.

- True
- False ✔

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Answers are displayed within the problem

Q3

10/10 points (graded)

Check all that apply:

Learning

▸ Week 10: Logical Agents

▾ **Week 11: AI Applications: NLP**

Week 11: Suggested Readings

11.1 AI Applications: NLP

11.2 Text Classification

11.3 Text Classification Example

11.4 Language Models

11.5 Example of Bigrams

11.6 Progress in NLP

Week 11 Quiz: NLP
Quiz due Apr 11, 2017 05:00 IST

Week 11 Project: NLP
Project due Apr 11, 2017 05:00 IST

Week 11 Discussion Questions

- [x] There is high interest in natural language processing nowadays ✔
- [x] There are vast amounts of text around on the web ✔
- [x] With tools like Siri and Alexa Echo, using natural language is becoming increasingly common ✔
- [ ] Learning from text is a low hanging fruit because human language is so simple
- [x] Language is difficult to model in AI ✔

✔

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ℹ Answers are displayed within the problem

Q4

10.0/10.0 points (graded)

There has been significant progress in machine translation over the last decade, because statistical models were trained to learn how to translate from a very large dataset of good quality translations.

- (•) Yes ✔
- ( ) No

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ℹ Answers are displayed within the problem

Q5

10.0/10.0 points (graded)

Text classification uses m-estimate of the probabilities: $p(w_k|c_j) = \frac{n_k+1}{n_j+|\text{Vocabulary}|}$. The use of m-estimate is a smoothing technique.

- (•) Yes ✔
- ( ) No

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Answers are displayed within the problem

Q6

10.0/10.0 points (graded)

The idea behind bigram models is to look only one word in the past. That is, approximate the probability $P(w_k|w_1 \cdots w_{k-1})$ with $P(w_k|w_{k-1})$

- (•) True ✔
- ( ) False

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Answers are displayed within the problem

Q7

10.0/10.0 points (graded)

Check all that apply:

- [x] A language model is a probability distribution over sequences of words ✔
- [x] Smoothing is a modification of the probability of words to avoid probabilities of zero ✔
- [x] Perplexity asseses how confused is the language model when applied on a new corpus. If the model is confused, the perplexity will be high. ✔

✔

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Answers are displayed within the problem

Q8

10.0/10.0 points (graded)

Below are the steps in deriving the language model probabilities using trigrams. Please put them in order:

a. Make Markov independence assumptions
$p(w_i|w_1, w_2 \ldots w_{i-2}, w_{i-1}) = p(w_i|w_{i-2}, w_{i-1})$

2 ✔ **Answer:** 2

b. Smooth the estimates

3 ✔ **Answer:** 3

c. Expand $p(w_1, w_2 \ldots w_n)$ using the chain rule

1 ✔ **Answer:** 1

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Answers are displayed within the problem

Q9

10/10 points (graded)

According to this week's suggested reading "AI's Language Problem" (Check all that apply):

- [x] What makes text different from images is that unlike images, two words can have same meaning but look completely different ✔
- [ ] It is easy to give machines human skills like creativity and abstraction

- [x] A problem with applying advanced machine learning methods to text is that a same word can have different meanings in different contexts ✔
- [x] Deep learning shows great promise to generalize from vision and games to understanding text ✔

✔

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Answers are displayed within the problem

Q10

10/10 points (graded)

According to this week's suggested reading "AI's Language Problem" (Check all that apply):

- [ ] Advanced deep learning systems not only excel in recognizing images and playing games, they are intelligible, that is we understand well how they come up with their answers
- [x] The ultimate AI system would not only be able to provide answers, it would also be able to communicate with human language ✔
- [x] The ultimate AI system would not only be able to provide an answers, it would also be able to provide explanations ✔
- [x] Today, Google search algorithms embed a functionality to get the meaning of text rather than just leveraging keywords and links between webpages ✔

✔

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Answers are displayed within the problem