Hyperiondev

TASK

Capstone Project III

Visit our website

Introduction

WELCOME TO THE FINAL CAPSTONE TASK FOR LEVEL 1!

Great job getting to the last task of the first level! This Capstone Project is going to allow us to work with spaCy and functions to build a recommendation system for books.

Get in touch

Connect for support

Remember that with our courses, you're not alone! You can contact your mentor to get support on any aspect of your course.

The best way to get help is to login to **www.hyperiondev.com/portal** to start a chat with your mentor. You can also schedule a call or get support via email.

Your mentor is happy to offer you support that is tailored to your individual career or education needs. Do not hesitate to ask a question or for additional support!

NATURAL LANGUAGE PROCESSING APPLICATIONS

Language Translation

The volume of information being put up online is growing more than ever. The thirst for the data is also increasing as the paradigm of machine learning and data science is increasingly proving to be very important in our daily lives. Language translation helps us conquer language barriers that we often encounter by translating technical manuals, support content or websites at a significantly reduced cost and at a very high rate. The challenge with language translation technologies is not in translating words, but in understanding the meaning of sentences to provide a true translation. For example, we have movies that are Spanish or Korean and we are able to watch them without knowing these languages.

Text classification

One of the applications of NLP that we experience on a daily basis is the text classification in our email folders: by using predefined categories, we can organise our spam folders and inbox so that we can access relevant emails or messages more efficiently.

Automatic summarisation

When working with huge amounts of information (like articles, books and websites), it can be extremely useful to be able to shorten these pieces into condensed forms that only shows the pieces of information that are most useful to you. This is what automatic summarisation is about. According to Expert System (2020): “Automatic summari[s]ation is relevant not only for summari[s]ing the meaning of documents and information, but also for understand[ing] the emotional meanings inside the information, such as in collecting data from social media.”

Sentiment analysis

Similarly to how we can infer someone’s meaning from their tone, sentiment analysis allows us to detect the emotion behind a piece of text using NLP. This is particularly useful for large companies who want to know what the general sentiment of their company is. By analysing articles and write-ups about their company, they can gain a fairly accurate idea of how people feel about them based on the language used when they are discussed.

Question Answering

This is an application of NLP that has come a long way in a short space of time. Simply put, these systems allow a computer to answer a question posed by a human. Siri and Okay Google are well-known voice-based question answering systems, but text-based systems can now be seen on almost every banking or online shopping site in the form of a chatbox.

Compulsory Task 1

- For this task, categorise which type of NLP application applies for each of the following use-cases:
  (Use the categories we have discussed on this bootcamp so far)
  a. A model that allocates which mail folder an email should be sent to (work, friends, promotions, important), like Gmail's inbox tabs.
  b. A model that helps decide what grade to award to an essay question. This can be used by a university professor who grades a lot of classes or essay competitions.
  c. A model that provides assistive technology for doctors to provide their diagnosis. Remember, doctors ask questions, so the model will use the patients' answers to provide probable diagnosis for the doctor to weigh and make decisions.

Compulsory Task 2

- Think about your environment — school, work or home — and think of a problem you face that can be solved by Natural Language Processing. Be as descriptive as possible and show what value it will add to the environment in question.

  For example, if you are a stand-up comedian, you can come up with a model that analyses the topics and areas your audience responds to the most. This can be done by, say, identifying tweets (or Facebook posts) that have the most 'retweets' (or 'likes'). The tweets or posts will then be categorised into topics and if you want to create a new comic routine, you can stick to the topics mined using your followers' reactions! So, think of a scenario that applies to your life/work/school and how you can apply NLP to your environment, and save that as nlp.txt.

Compulsory Task 3

- Read up on any innovative technology using NLP (by companies such as Google or IBM, for instance) and write a brief summary about the technology, what it achieves/does, and an overview of how it works.

  To take an example, you may have noticed Gmail's auto-response suggestions on your incoming emails. If I send an email to your Gmail address asking for an appointment, on opening the mail you would notice Gmail's automatically suggested response options such as "Yes, that works for me" and "Sorry, I'm not available at that time."

Completed the task(s)?

Ask your mentor to review your work!

Review work

Things to look out for:

1. Make sure that you have installed and setup all programs correctly. You have setup **Dropbox** correctly if you are reading this, but **Python or Notepad++** may not be installed correctly.
2. If you are not using Windows, please ask your mentor for alternative instructions.

Rate us

Share your thoughts

HyperionDev strives to provide internationally-excellent course content that helps you achieve your learning outcomes.

Think that the content of this task, or this course as a whole, can be improved or think we've done a good job?

Click here to share your thoughts anonymously.

References:

Expert Systems. (2020). Natural language processing applications - Learn more. Retrieved 20 August 2020, from **https://expertsystem.com/natural-language-processing-applications/**