CS 520 Final: Question 4 – The Big Picture

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NobelPrizeInChemistryOrBiologyBot

Nobel Prize is one of the most famous prizes all around the world, which presented for the greatest people who have made significant contributions to the world. The prize in chemistry and the prize in biology (in fact it is physiology or medicine) are both presented to the greatest scientists in the related areas. However, to distinguish whether one result is a prize in chemistry or a prize in biology is not so easy. There are both lots of names of chemicals and lots of words related with a large amount of experiments. Therefore, how to distinguish a result between chemistry or biology automatically is important, and it can help the general public to get it quickly.

There are several issues to build such a bot. First, most results today are represented in language, so how to model the language more effectively is very important. Word embeddings have been used for lots of years and nowadays they are gradually replaced by deep neural networks. More and more linguistic models are able to do better in representing languages.

Secondly, the references and citations of the academic results are very useful for us to get more information about the results. By search algorithms and the probabilistic knowledge, we have learned in the course, effective searching tools such as search engine and knowledge graphs are being used now. By using these techniques, we can gain more information.

Finally, while the labeled data are not so much, we can also use some unsupervised learning methods such as Clustering to let the system learn a part of the data all on its own. It will help the bot to get more data and may get a better result. However, clustering methods nowadays are not so effective in solving problems. It's a long way to go.

In conclusion, my bot is very powerful with these amazing models and algorithms. I really hope it can come true in one day.

Bonus:

ii) She dressed as superman.

iii) Here is the picture:


Yellow
Red
Blue