Results

For my portion of this assignment, I utilized BERT as a LLM to analyze text data related to resumes and ultimately tell us what kind of jobs require what skills to be hired for those roles.

BERT was able to take the file that I had (processed\_data.csv) and give me a couple of results:

A white text with black text

Description automatically generated

It was able to tell me what skills were needed if I wanted to apply for a certain position or role.

I also had pulled some graphs and visuals to indicate across all jobs which skills would be most beneficial to have:

A close-up of words

Description automatically generated

It looks like Hadoop and Spark as well as Machine Learning and Data visualization are the biggest and most important skills to get in order to get a job in the computer science or data science field.

The other LLM I looked at was XLnet. Unlike BERT which uses a masked language model (MLM) and next sentence prediction (NSP) tasks during pre-training, XLNet uses a permutation language modeling (PLM) objective. It considers all possible permutations of words in a sentence and learns to predict the probability of each permutation. This allows for bidirectional context understanding without relying on masking tokens.

Given that though, the coding behind the two was still fairly similar and didn’t require much modification. For the results that I achieved during the testing of the LLM, it was also fairly similar to the results of BERT model. I think given that the text was static and it was a limited amount of data, there wasn’t expected to be much variation in the output.

A graph of a number of jobs

Description automatically generated

Here is a slightly different representation of what it was able to show me visually. This time I had pulled a bar graph telling me how many skills were needed for each position and not necessarily which skills yet. This could be helpful in someone trying to determine which field they might want to study based off how many skills they would need to learn. Perhaps after looking at this visual, the user might then decide on a role and look more into what skills specifically they would need.