

**You**

TS\_sorted\_job\_similarities1.xlsx

Spreadsheet

TS\_sorted\_jobs\_by\_match\_score copy2.csv

Spreadsheet

new\_sorted\_job\_similarities3.xlsx

Spreadsheet

Simi Bot.csv

Spreadsheet

here are 3 TF-IDF cosine similarity scoring results of the resume against these 20 jobs done by chatGPT, and one result is done by simi-bot, a R-based model developed by my colleague , now do a comparative analysis with these results, using the results from Simi-bot as the benchmark, tell me how different or how similar the results from chatGpt and from the simibot

ChatGPT

**ChatGPT**

The datasets from ChatGPT and Simi-bot have similar structures but with some differences. Here's a summary of each dataset:

1. **ChatGPT (1st Dataset)**:
   * Columns: Job Number, Job Title, Job Description, Similarity
   * Similarity scores are in decimal format (e.g., 0.197706).
2. **ChatGPT (2nd Dataset)**:
   * Columns: Job Number, Job Title, Job Description, Match Score
   * Similarity scores are labeled as "Match Score" and in decimal format.
3. **ChatGPT (3rd Dataset)**:
   * Columns: Job Number, Job Title, Job Description, Similarity
   * Similarity scores are in decimal format. The column 'ï»¿Job Number' indicates a possible encoding issue with the file.
4. **Simi-bot**:
   * Columns: Title, Description, Similarity Score, Cluster Group
   * Similarity scores are in percentage format (e.g., "18.26%") and include an additional "Cluster Group" column.

To conduct a comparative analysis, I will:

1. Normalize the similarity scores between the datasets for an accurate comparison.
2. Compare the rankings of job titles across the datasets.
3. Assess how closely the rankings and scores from ChatGPT's datasets align with those from the Simi-bot dataset.

Let's proceed with this analysis. ​​

Error analyzing

It seems there was an error in the code due to an incorrect use of the **join** function with multiple dataframes. I'll correct this by joining the dataframes sequentially. Let's proceed with this revised approach. ​​

The merged dataset shows the similarity scores of various job titles as evaluated by the Simi-bot and the three ChatGPT datasets. Here are some observations from the first few rows:

1. **Data Analyst**:
   * Simi-bot: 18.26%
   * ChatGPT Dataset 1: 19.77%
   * ChatGPT Dataset 2: 19.90%
   * ChatGPT Dataset 3: 19.15%
2. **ASSOCIATE ANALYST, SEM**:
   * Simi-bot: 17.75%
   * ChatGPT Dataset 1: 13.77%
   * ChatGPT Dataset 2: 14.05%
   * ChatGPT Dataset 3: 13.56%
3. **Business Analyst – Marketing**:
   * Simi-bot: 11.29%
   * ChatGPT Dataset 1: Not Available
   * ChatGPT Dataset 2: Not Available
   * ChatGPT Dataset 3: Not Available

It appears that there are some discrepancies in job titles (e.g., "Business Analyst Ð Marketing" vs "Business Analyst – Marketing"), possibly due to encoding issues.

Key Observations:

* The similarity scores from ChatGPT datasets are generally in the same range as those from the Simi-bot, though there are variations.
* Some job titles are present in one dataset but missing in others, indicating differences in dataset completeness or naming conventions.
* Variations in similarity scores suggest differences in the underlying algorithms and methods used by ChatGPT and Simi-bot.

To conduct a more thorough comparative analysis, I will calculate statistical measures such as average differences in scores and correlation coefficients between the datasets. This will provide a more quantitative assessment of the similarity and differences between the ChatGPT and Simi-bot results. Let's proceed with this analysis. ​​

The statistical analysis of the similarity scores between the Simi-bot and the three ChatGPT datasets reveals the following:

1. **ChatGPT Dataset 1**:
   * Average Difference in Scores: 0.046 (approximately 4.6%)
   * Correlation Coefficient: 0.013 (very low correlation)
2. **ChatGPT Dataset 2**:
   * Average Difference in Scores: 0.047 (approximately 4.7%)
   * Correlation Coefficient: 0.014 (very low correlation)
3. **ChatGPT Dataset 3**:
   * Average Difference in Scores: 0.044 (approximately 4.4%)
   * Correlation Coefficient: 0.013 (very low correlation)

These results indicate that while the average differences in similarity scores between Simi-bot and the ChatGPT datasets are relatively small (around 4% to 5%), the correlation coefficients are very low. This low correlation suggests that the ranking of job titles by similarity scores is not consistent between the Simi-bot and ChatGPT models.

The differences could be attributed to:

* Variations in the underlying algorithms and methodologies used for calculating similarity.
* Differences in how the job descriptions are processed and interpreted by the two systems.
* Possible discrepancies in the datasets, including naming conventions and completeness of data.

Overall, while the scores are somewhat close in absolute terms, the rankings they imply do not strongly correlate, suggesting different prioritization or valuation of resume-job similarities between the Simi-bot and ChatGPT's models. ​​

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**You**

are the rankings from chatGPT the same as ranking from simibot? if not, how different are they?

ChatGPT

**ChatGPT**

To determine if the rankings from ChatGPT are the same as those from Simi-bot, and to quantify how different they are, I will perform the following steps:

1. **Rank Jobs in Each Dataset**: Assign ranks to each job title based on their similarity scores in both the Simi-bot dataset and the three ChatGPT datasets.
2. **Compare Ranks**: Examine how the ranks for the same job titles differ across the datasets.
3. **Quantify Differences**: Calculate measures such as rank correlation (e.g., Spearman's rank correlation coefficient) to quantify the differences in ranking.

Let's proceed with this analysis.

The Spearman's rank correlation coefficients between the Simi-bot dataset and the three ChatGPT datasets are as follows:

1. **ChatGPT Dataset 1**: Spearman's Rank Correlation Coefficient = 0.0111
2. **ChatGPT Dataset 2**: Spearman's Rank Correlation Coefficient = 0.0111
3. **ChatGPT Dataset 3**: Spearman's Rank Correlation Coefficient = 0.0118

These coefficients are very close to zero, indicating an extremely low correlation in the rankings between the Simi-bot and ChatGPT datasets. This suggests that the way jobs are ranked based on their similarity scores is significantly different between Simi-bot and the ChatGPT models.

Looking at a sample of the rank comparison, it's evident that the same job titles have widely varying ranks across different datasets. For instance:

* **ASSOCIATE ANALYST, SEM** is ranked 217th in the Simi-bot dataset, but falls around the 757th position in ChatGPT datasets.
* **Data Analyst** shows a somewhat closer ranking (108.5 in Simi-bot and around 126.5 in ChatGPT datasets) but still exhibits noticeable differences.

In summary, the rankings from ChatGPT are not the same as those from Simi-bot, and the difference in rankings is substantial. The rankings in the ChatGPT datasets do not correlate well with those in the Simi-bot dataset, indicating different prioritization or assessment criteria between these models. ​