REDDIT TOPIC TRENDS IN r/datascience

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CONTENTS

INTRODUCTION

- Reddit shows top posts but no topic trends
- Top posts are usually memes or cross-posted fun/trivia content
- Reddit can benefit from deploying a Trending Topics under subreddits
- Propose to identify top 5 topics under subreddits

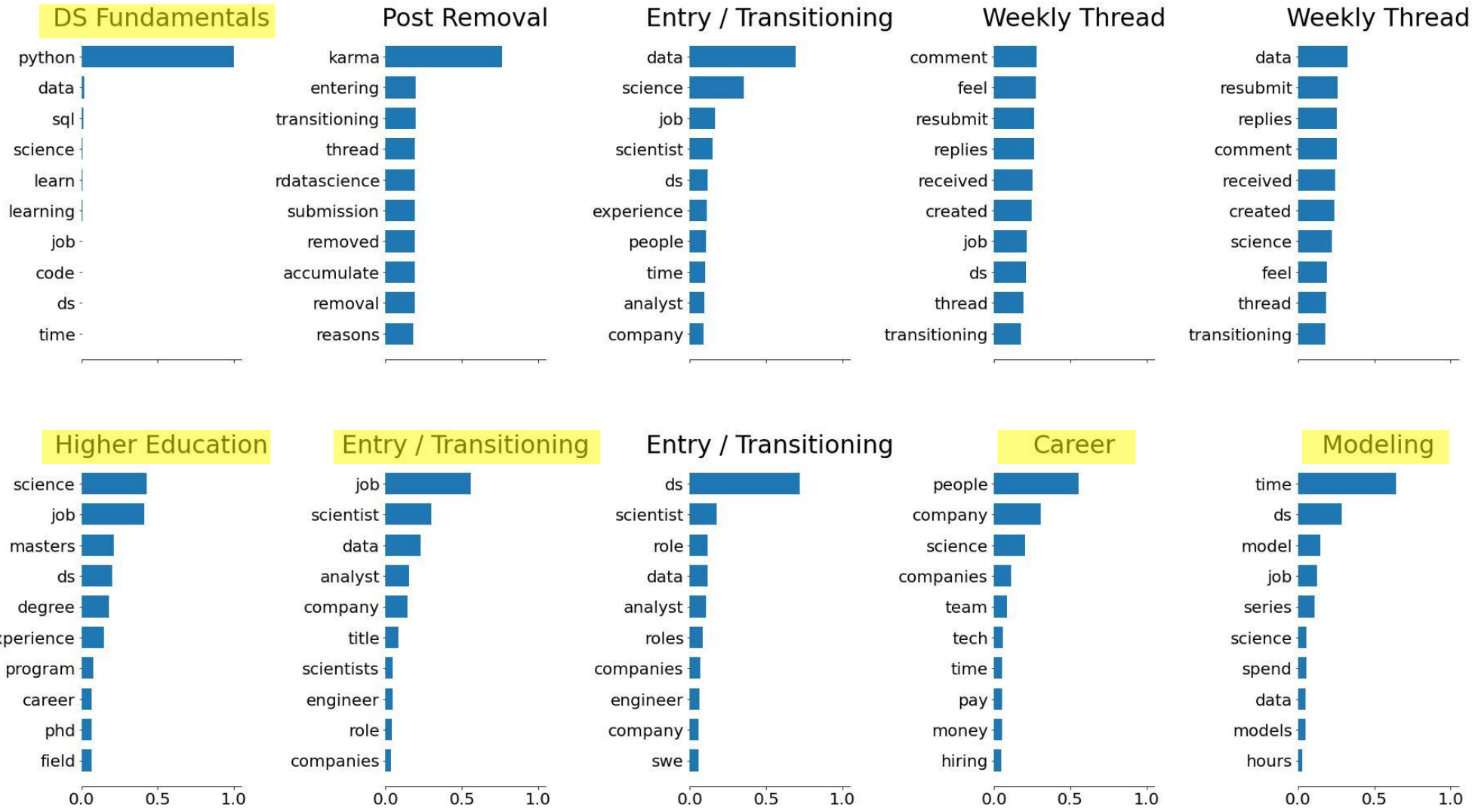
METHODOLOGY -1

- DATA: Used PushshiftAPI to scrape post and comment data for six months
- 8,715 Submissions & 86,212 Comments
- After EDA, iterative clean-up and tokenization ended up with +10K feature terms.

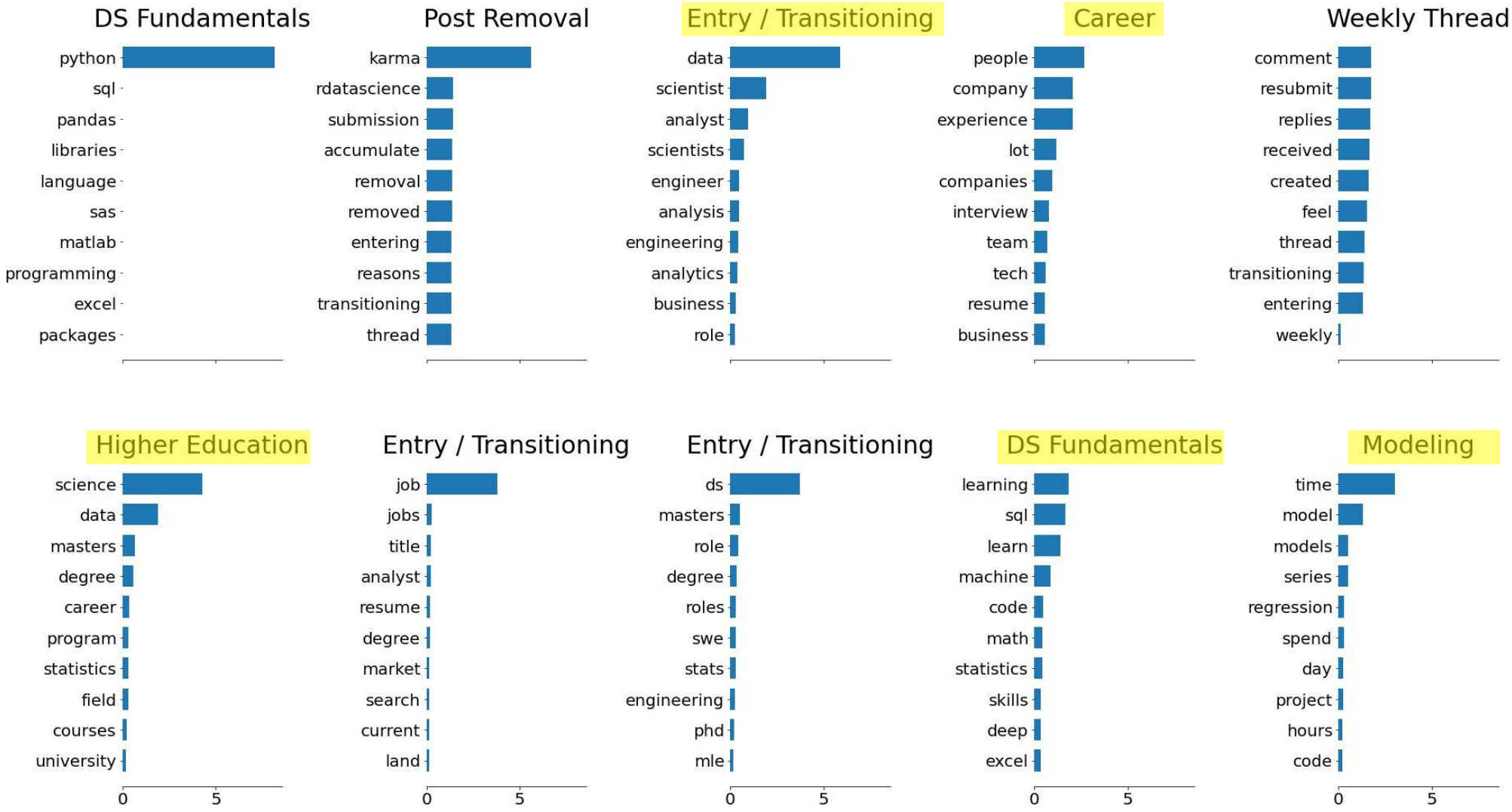
METHODOLOGY -2

- Used LSA, NMF & LDA to generate 10 topic components each with 10 terms
- Visualize components based on weight / probability
- Interpret results and assign topic names

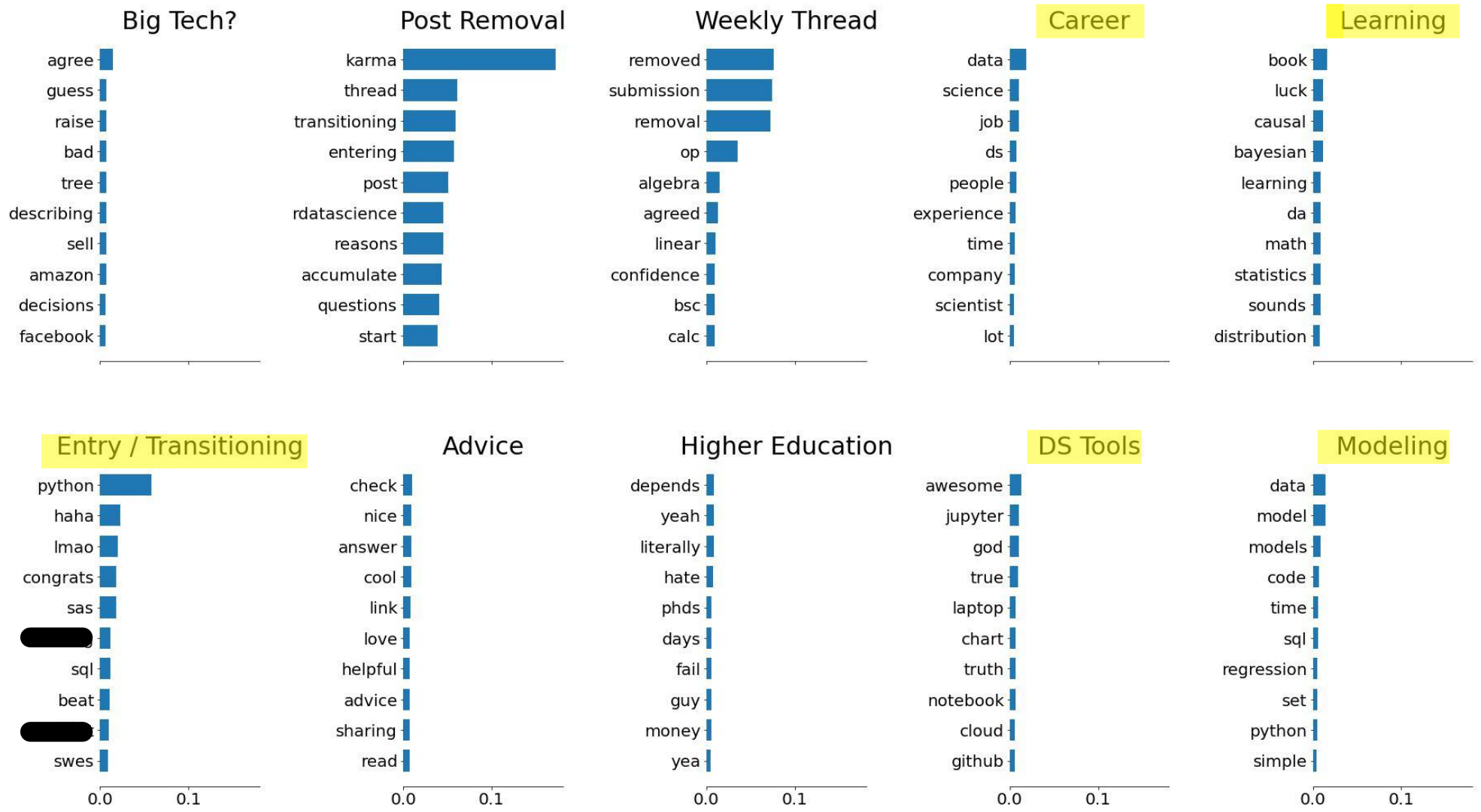
ANALYSIS – LSA



ANALYSIS – NMF

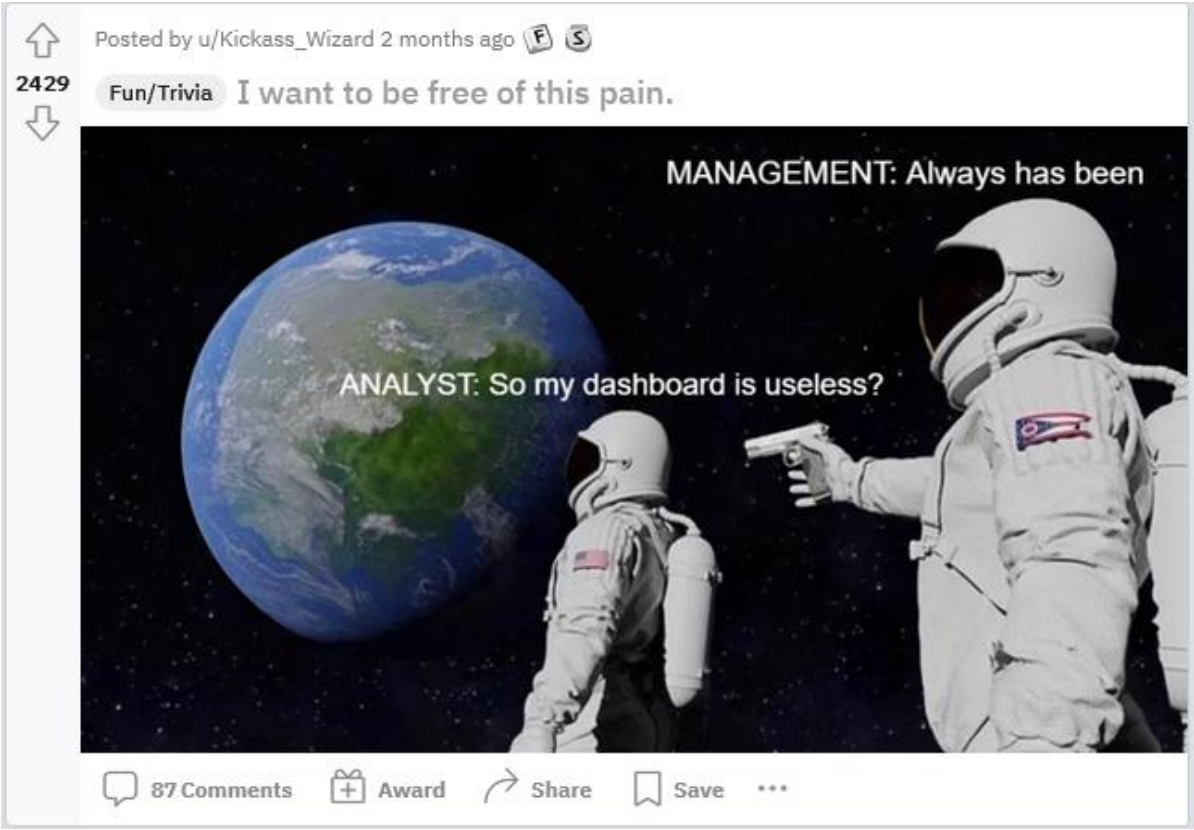


ANALYSIS – LDA



CONCLUSIONS

- LSA is the model of choice due to its speed and accuracy for this use case
- Trending Topics will potentially draw new users
- Reddit can make use of Trending Topics along with Filter by Flair



FUTURE IMPROVEMENTS

- Exclude LDA in the next iteration of this project
- Explore correlation between a post's / comment's score in reddit vs its term weight / probability in document term matrix.
- Conduct a topic trending analysis in r/MachineLearning for more insightful topics

APPENDIX

- https://www.reddit.com/r/datascience/top/?t=all
- https://scikit-learn.org/stable/auto_examples/applications/plot_topics_extraction_with_nmf_lda.html#sphx-glr-auto-examples-applications-plot-topics-extraction-with-nmf-lda-py
- https://towardsdatascience.com/scraping-reddit-data-1c0af3040768
- https://medium.com/swlh/how-to-scrape-large-amounts-of-reddit-data-using-pushshift-1d33bde9286
- https://medium.com/mlearning-ai/extracting-philosophical-topics-from-reddit-posts-via-topic-modeling-affbaaa8a0b9