Architectural Components

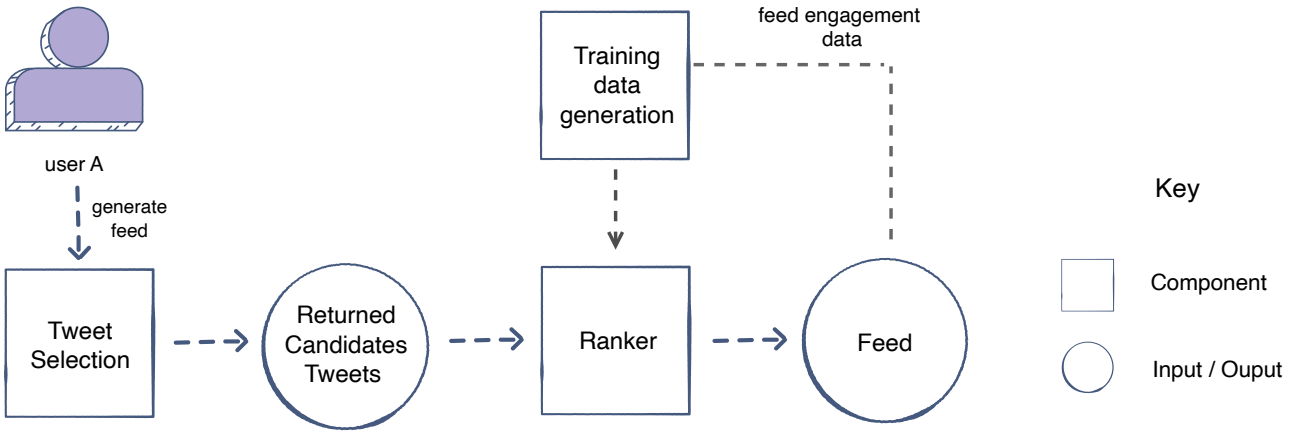
Have a look at the architectural components of the feed ranking system.

We'll cover the following

- Architecture
  - Tweet selection
  - Training data generation
  - Ranker

Architecture#

Let’s have a look at the architectural components that are integral in creating our Twitter feed system.



Architectural diagram of feed based system

Let’s briefly look at each component here. Further explanation will be provided in the following lessons.

Tweet selection#

This component performs the first step in generating a user's feed, i.e., it fetches a pool of Tweets from the user's network (the followees), since their last login. This pool of Tweets is then forwarded to the ranker component.

Training data generation#

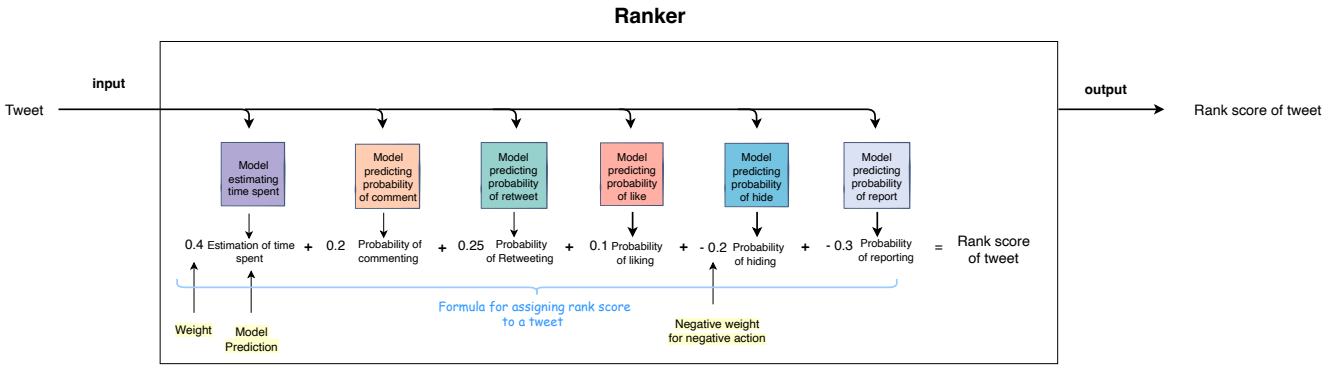
Each user engagement action on the Twitter feed will generate positive and negative training examples for the user engagement prediction models.

Ranker#

The ranker component will receive the pool of selected Tweets and predict their probability of engagement. The Tweets will then be ranked according to their predicted engagement probabilities for display on user A's feed. If we zoom into this component, we can:

1. Train a single model to predict the overall engagement on the tweet.
2. Train *separate models*. Each model can *focus on predicting the occurrence probability of a certain user action for the tweet*. There will be a separate predictor for *like*, *comment*, *time spent*, *share*, *hide*, and *report*. The results of these models can be merged, each having a different weight/importance, to generate a rank score. The Tweets will then be ranked according to this score.

   The following illustration gives an idea of how the ranker component combines the outputs of these models to come up with a rank score for a Tweet.



Combining the output of different predictors with weights according to importance of user action

Separately predicting each *user action* allows us to have greater control over the importance we want to give to each action when calculating the rank of the Tweet. We can tweak the weights to display Tweets in such a manner that would align with our current business objectives, i.e., give certain user actions higher/lower weight according to the business needs.

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Tweet Selection

Completed

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