Question Answering Chat-Bot

An overview

INTRODUCTION

When asking a question on a forum, one can expect to get an answer in the next hours/days/weeks. And in many cases, questions, or parts of them, have already been answered. What if there was a way to find and present the previous answer to that question, and enable the user to get an answer within seconds? Well, now there is!

Introducing FamBot, the question-answering chat-bot powered by Elasticsearch. The user inputs a question and is presented the best chatbot answer to that user question. All in a matter of milliseconds!

PROBLEM FORMULATION

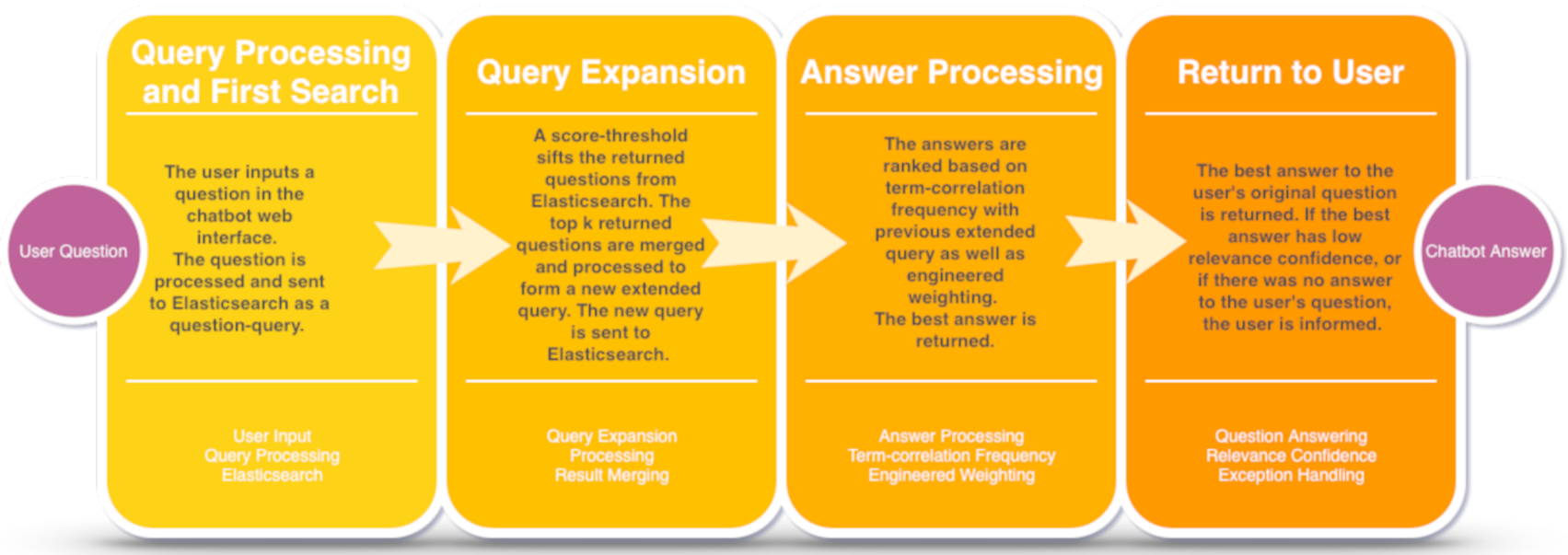
Several problems had to be adressed and solved.

- *How to use Elasticsearch and process the user query*
- *How to optimise the IR from the familjeliv-data*
- *How to process the returned answers by Elasticsearch*
- *How to handle exceptions*
- *How to interact with the user*

SOLUTION METHODS

The following methods were used.

- *Elasticsearch indexes the familjeliv-data*
- *The user question is processed and trimmed*
- *Elasticsearch returns all matching questions*
- *The top k questions are processed and merged*
- *Elasticsearch returns all matching answers*
- *The answers are ranked.*
- *If the highest-ranked answer is below a threshold, the returned answer is flagged.*



- ***The user interaction is done via a web interface.***
- ***The chat-bot does currently not track context***

RESULTS

The results were positive.

The achieved precision was estimated to be 61.25% via the evaluation of the answers to 20 trial questions.

The kappa statistic was calculated to be 0.6251 among the group members.

The flagging function successfully warns the user if the confidence in the fetched answer is low.

In conclusion, it is a working prototype of a chat-bot utilising information retrieval systems.

REFERENCES

1. Utomo et al. *"Question answering system : A review on question analysis, document processing, and answer extraction techniques"*, 2017
2. Komiya et al. *"Question answering system using Q&A site corpus Query expansion and answer candidate evaluation"*, 2013

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