

Information Retrieval and Question Answering

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# Abstract

COVID-19 pandemic research provides a wide range of scientific studies to discover possible insights to fight against this infectious disease. However, manually searching the documents and writing the paper's abstract is time-consuming. Therefore, we devised an Information retrieval-based question-answering system and presented a summary of relevant information to the user.

…..

# Introduction

COVID-19 was urgent for all researchers worldwide when the number of cases frequently increased. All researchers worldwide were prompted on their research for prevention methods, new drugs and developing new vaccines. At such an alarming time, conducting research is very valuable to help the research and medical community by extracting useful information from thousands of articles (Afsharizadeh 2020, p. 237). However, timing consumption also matters, and automatically generated summarisation will allow users to find important information from different texts and articles and gain knowledge quickly (Cai et al. 2022, p. 1).

## Information Retrieval based Question Answering

In the information retrieval-based question answering, for a given question, ….

## Xxxxx

Xxxxx

**Extractive Summarisation:** The extractive approach involves picking up the documents' most essential phrases and lines. It then combines all the critical lines to create the summary. Therefore, the final summary consists of only sentences and phrases from the original text.

**Abstractive Summarisation:** Abstractive summarization algorithms use parts of the original text to get its essential information and create shortened versions, which might include new words rather than just the original words.

# Preprocessing

## Xxxx

CORD-19 is a free resource …. .

## Mxxx

### Dxxxx

In the dataset preprocessing, we ….

# System Architecture

## Xxxxxx

This study …. .

**Figure 1.** System Architecture for …. system.

## System Architecture Components

Xxxxx

# Model Selection and Training

## Xxxxx

**Table 1.** Performance metrics for Extractive summaries

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Method** | **rouge1** | **rouge2** | **rougeL** | **rougeL sum** | **text\_column** |
| ReductionSummarizer | 0.533937 | 0.26484 | 0.38009 | 0.38009 | intro\_conclusion |
| EdmundsonSummarizer | 0.459893 | 0.227027 | 0.352941 | 0.352941 | introduction |
| EdmundsonSummarizer | 0.465347 | 0.21 | 0.336634 | 0.336634 | intro\_conclusion |

From Table 1. Performance metrics we can see that:

* Xxx .
* Yyy .

## Discussion: xxx

**Zzz :** In ….

**Ddd :** In … .

# User Interaction with the System

This … .

# Conclusion

This … .

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