

MemoriEase at the NTCIR-17 Lifelog-5 Task

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Outline

1. Introduction
2. Methodology
3. UI
4. Conclusion



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Introduction

- MemoriEase is an automatic lifelog retrieval system, upgraded from interactive system at LSC23.
- MemoriEase employs embedding-based search with state-of-the-art BLIP-2 model.
- New enhancement in using LLM to rewrite query.



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Methodology

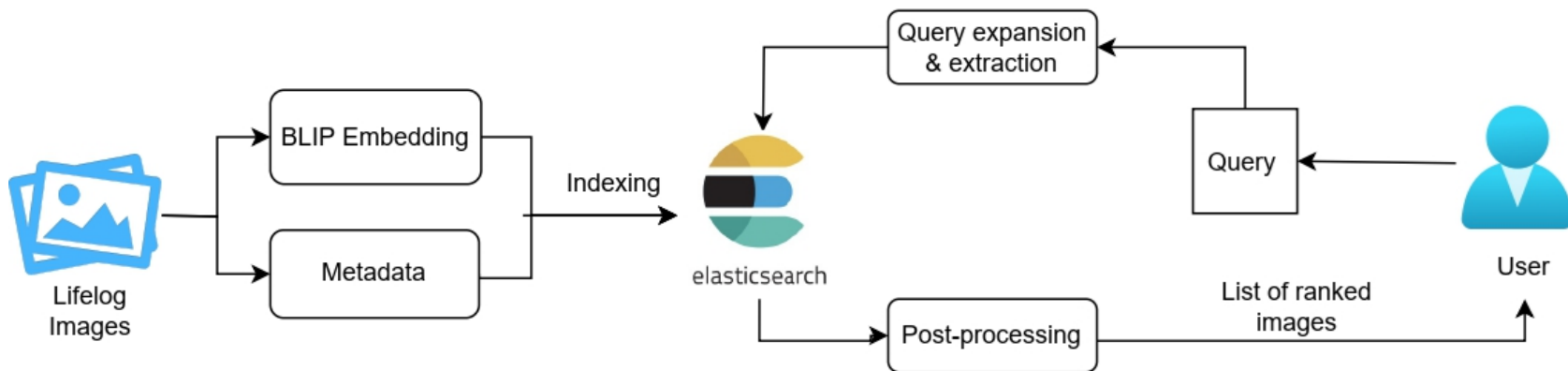


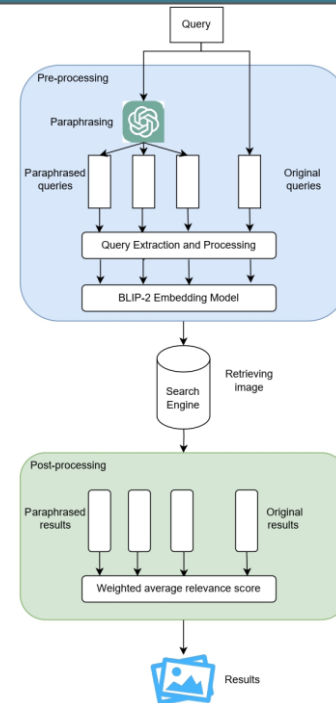
Figure 1: MemoriEase overview

Methodology

- A lifelog dataset of 18-month, from January 2019 to June 2020. Comprise of 725k images.
- Blur image removal using edge weight computation.
- Metadata extraction, enhancement and cleaning.
- New filters by metadata: semantic name, hour, weekend.

Methodology

- BLIP-2 extracts the embedding of images and query to compute the cosine similarity.
- Elasticsearch is a vector-based search engine.
- ChatGPT paraphrases the original query to N queries and perform search parallelly.
- Weighted average for relevant score.



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UI

MemoriEase

Find:

Topic:

Search

Show more

Saved scene

Enter your answer for question answering topic here ▶

Result

Image by time

Grace O'Malley Drive Sat. 20:12 2018-05-05	Novotel Fri. 15:42 2015-03-06	Unknown Place Tue. 22:30 2019-12-24	Mon. 12:37 2015-03-02	Unknown Place Sat. 12:38 2020-03-21
Unknown Place Thu. 17:33 2019-12-28	Sat. 19:49 2018-05-12	Unknown Place Fri. 09:50 2019-12-27	Grace O'Malley Drive Sat. 20:15 2018-05-05	Unknown Place Wed. 10:28 2019-12-25
Work Thu. 16:45 2015-03-05	Sat. 19:57 2018-05-12	Dublin City University (DCU) Thu. 14:49 2019-01-03	Sat. 19:54 2018-05-12	Unknown Place Sat. 12:33 2020-03-21

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UI

MemoriEase

Before:

when: hours

Find:

Topic:

After:

when: hours

Search

Show less

Saved science

Result

Image by time

Donaghmede Shopping Centre
Fri, 18:33 2019-12-20

Donaghmede Shopping Centre
Fri, 18:27 2019-12-20

Donaghmede Shopping Centre
Fri, 18:29 2019-12-20

Donaghmede Shopping Centre
Fri, 18:28 2019-12-20

HOME
Sat, 22:55 2019-12-28

Dunnes Stores
Sun, 18:58 2019-12-01

Conclusion

- Introduce the automatic manner of MemoriEase to take part in the NTCIR-17 Lifelog-5 Task.
- New processing technique in LLM for query rewriting.



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Q&A



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Thank you!



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