Conceptual framework of information retrieval system in the field of gastroenterology and hepatology

Masoud Mohammadi
Golestan University of Medical Science

Fatemeh Sheikhshoaei
Tehran University of Medical Sciences, fashoaei@sina.tums.ac.ir

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Authors:

Masoud Mohammadi

Assistant profressor in medical library and informtation Sciences, Golestan University of Medical Sciences, Iran.

Fatemeh Sheikhshoaei

Associate profressor in medical library and informtation Sciences, Tehran University of Medical Sciences, Iran.

Presented by:

Fatemeh Sheikhshoaei

Introduction

- The information needs of the user are the focus of the providers of information systems and services.
- In designing an information retrieval system, the purpose is to fitting job demands with the knowledge and skills of the system users; therefore, each group considered specific tasks and resources.
- In order to interact effectively, the methods for achieving certain tasks must be compatible with the user's conventional cognitive characteristics.

Introduction (Cont.)

- On the other hand, personalized information retrieval services and systems are a model that aims to provide different service strategies, different contents and functions for different customers.

- Despite the great need, the design and consideration of information retrieval systems in the field of gastroenterology and hepatology has little history. None of the researches done so far (March 2020) has designed the clinical and research information retrieval system and the required ontologies or predicted framework.

Aim of this research

- Due to the importance of personalized information retrieval services and systems, the vacuum of a clinical and research information retrieval system and the tools needed to meet the information needs of experts in this field is evident. Therefore, the purpose of this study is to provide a conceptual framework of information retrieval system in the field of Gastroenterology and hepatology.

Methodology

- This research is an applied research and presents a conceptual framework.
- In this study, in order to obtain the desired features of the retrieval system, from the results of two other studies of researchers, in one of which, during a systematic review study, current models and approaches in information retrieval systems in medical sciences were extracted (1).
- In another study, the characteristics of an optimal information retrieval system were extracted qualitatively from the perspective of gastroenterology and hepatology experts (1).

Methodology (Cont.)

- Also, according to the design of the specialized ontology of gastroenterology and hepatology in another study by the researchers of this research, this ontology will be used in the conceptual framework (1).

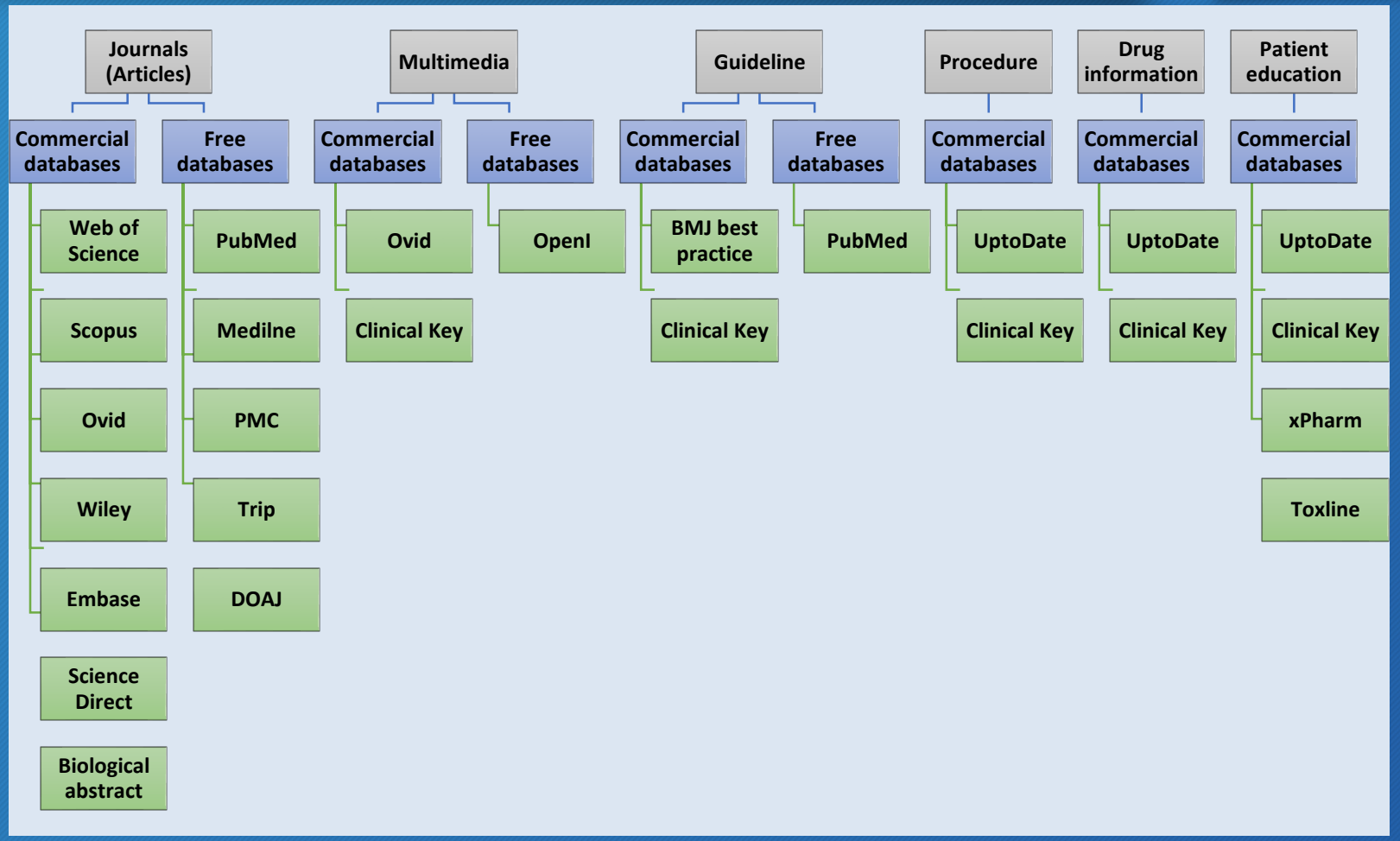
- Also, the initial model of the framework presented in this research, based on after studying and evaluating similar conceptual frameworks in similar systems, the conceptual framework of Zhou, Nimmagadda and Rainers (2018) was used as a basis .

Results

- The conceptual framework of Gastroenterology and hepatology recovery system consists of 4 parts. Information resources section, section, resource management, personalization section and query section. The resources and databases that make up the gastroenterology and hepatology knowledge system database are created from different collections, and in order to integrate the data from these databases in the information retrieval system knowledge-base, it is necessary to create a data warehouse. Machine learning and data mining are embedded throughout the conceptual framework. In the field of resource management, in addition to classifying data using data mining processes, the conceptual mapping process of resources is also performed using specialized ontology gastroenterology and hepatology.

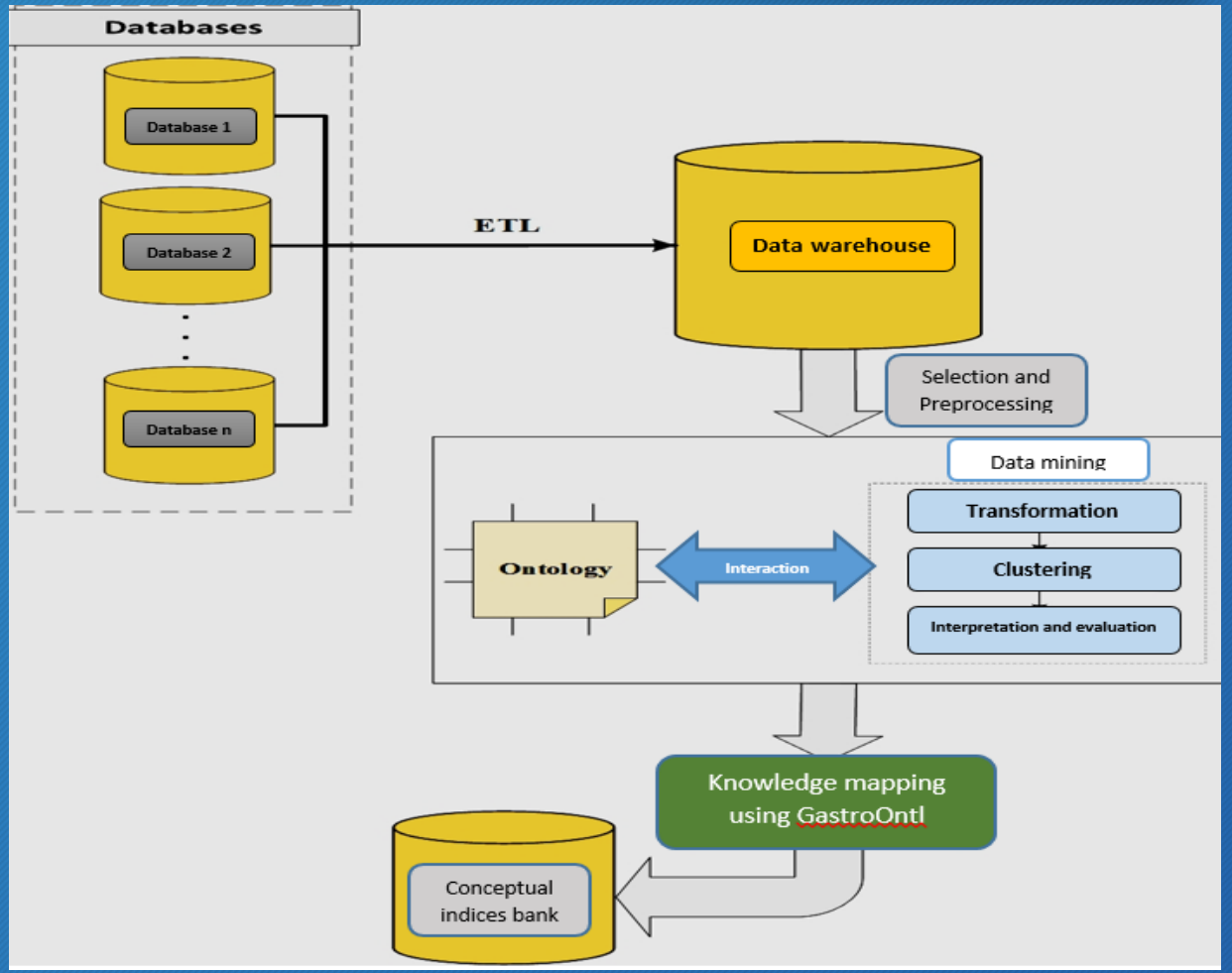
Results (Cont.)

Resources of gastroenterology and hepatology information retrieval system :



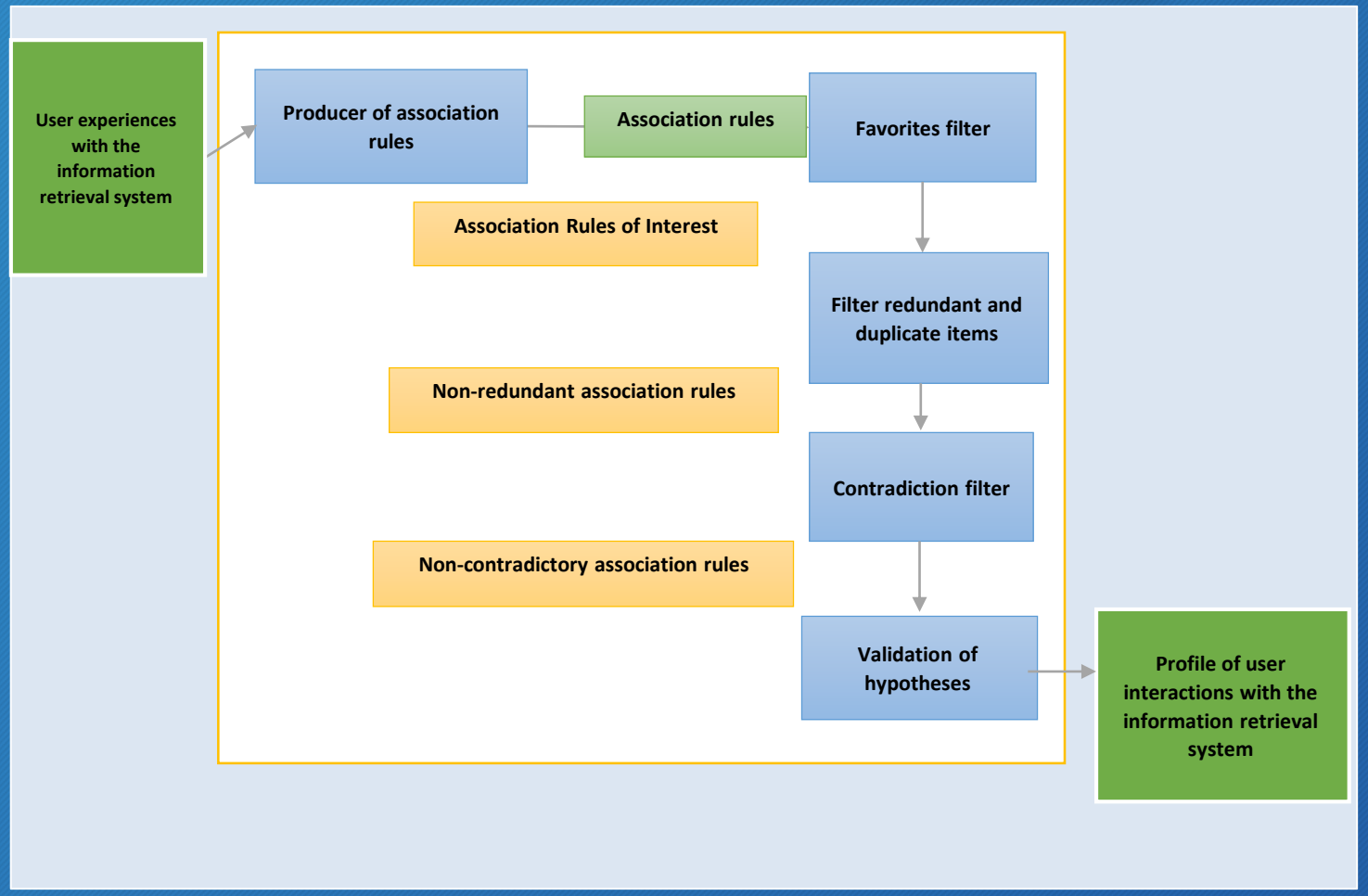
Results (Cont.)

Processes of creating data warehousing and data mining and creating conceptual index banks

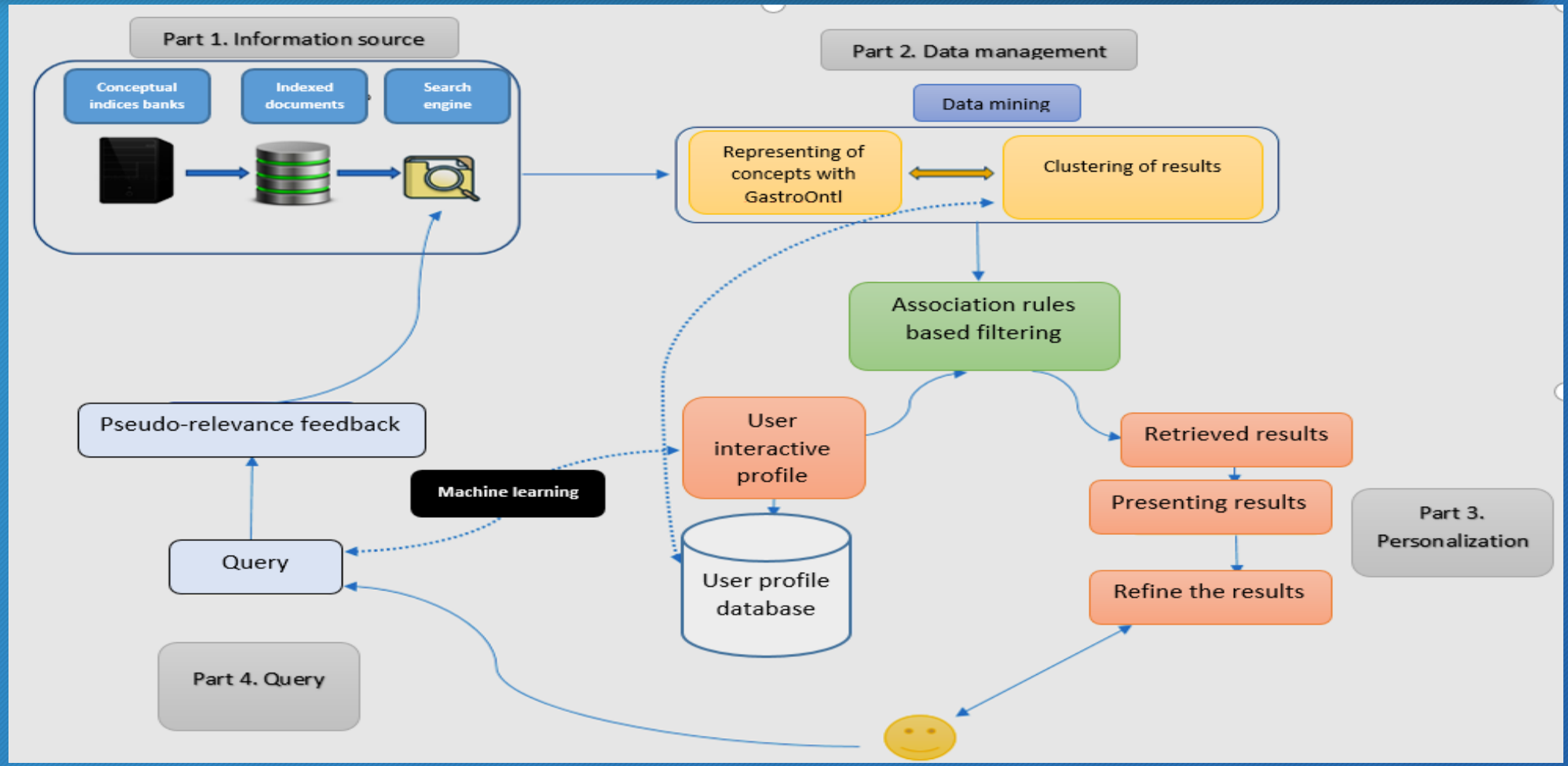


Results (Cont.)

Filtering algorithm based on association rules



Conceptual framework of Gastroenterology and hepatology information retrieval system



Conclusion

- Considering the comparison of this research with other researches in the field of frameworks and conceptual models of retrieval systems, special needs of users and utilization of methods of personalization of information as well as conceptual mapping of resources have been the most important differences with other researches.

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