UNIVERSITÄT DUISBURG ESSEN

Offen im Denken

WisPerMed

Wissens- und datenbasierte Personalisierung von Medizin am Point of Care

Fachhochschule Dortmund

University of Applied Sciences and Arts

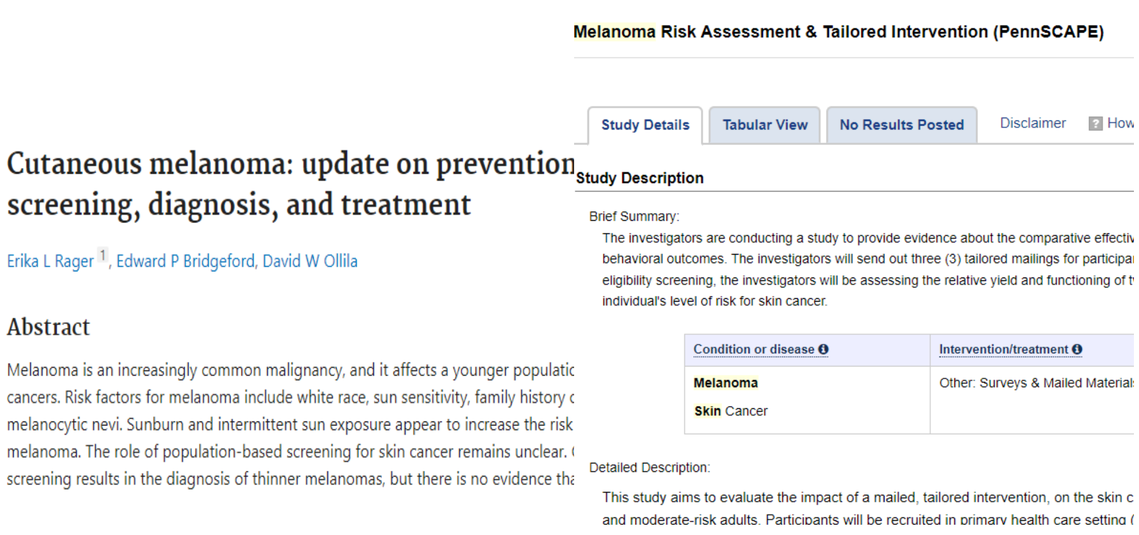
FP10: Context-sensitive, personalized search at Point of Care

Objective

Develop a medical search engine for medical practitioners that takes into account case context and personalization by incorporating the users' interests and knowledge levels into the retrieval process.

Document

It is important to identify the most important documents for medical doctors and researchers. This research project started by considering indexing **medical research articles** and **clinical trials** because of the availability of data and because it is easier to use when it comes to ethics and privacy. Later, we will consider integrating **electronic health records** into the search engine.

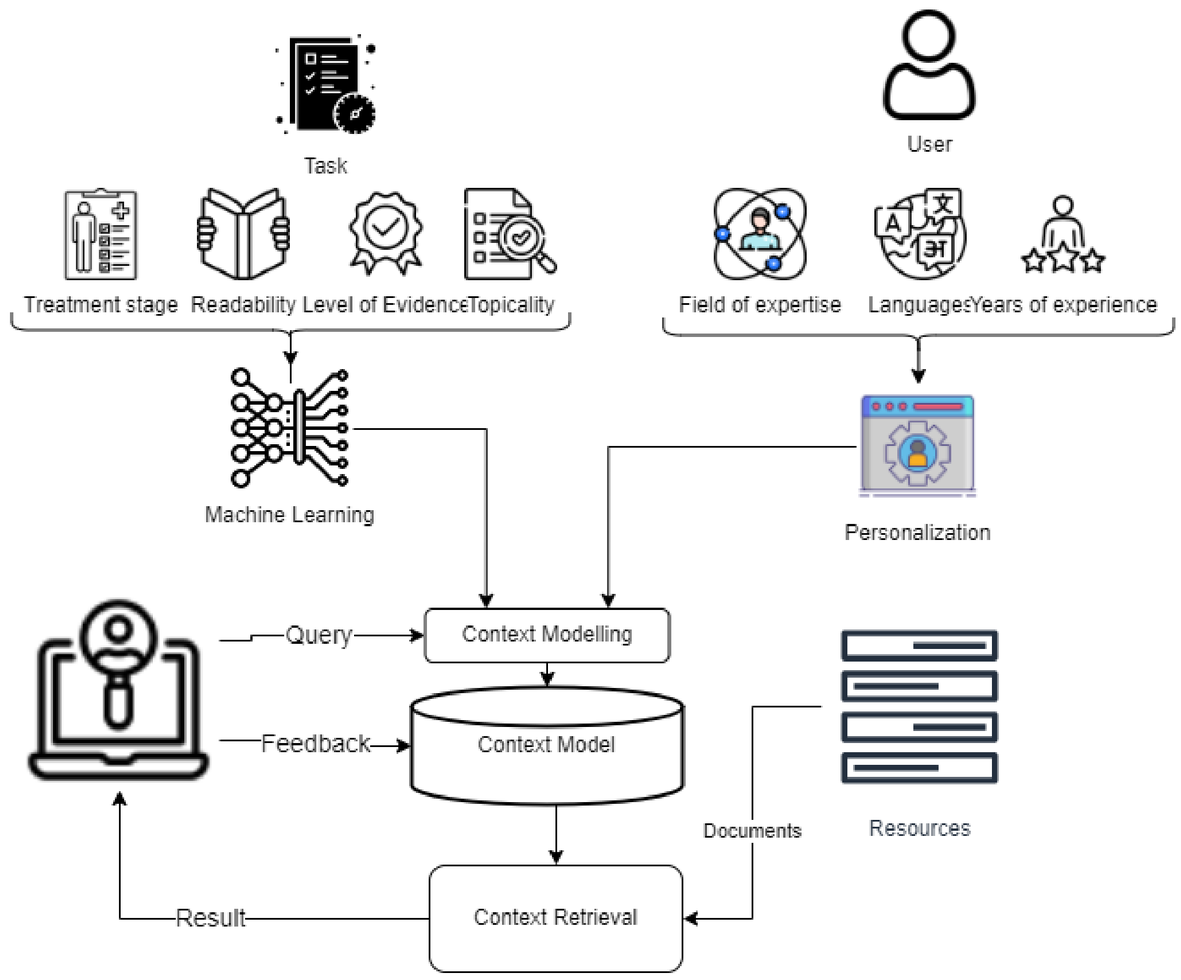


Example of Medical documents

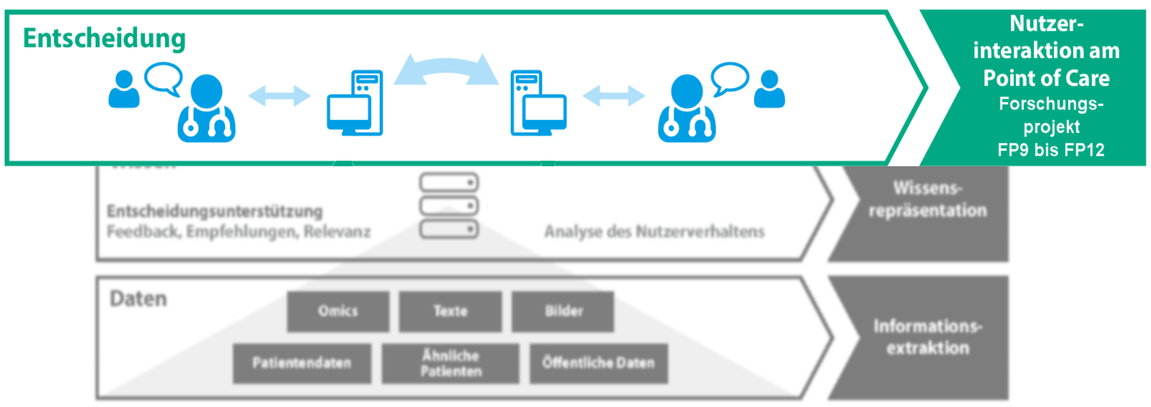
Research Question

- What contextual aspects with regard to context and personalization of information retrieval in the medical domain?
- How to extract context-feature values at the document and query levels, and what personalization features could be automatically extracted or manually configured?
- How can these features be integrated into the retrieval process to consider these factors during retrieval?
- How to include these features in the interactive retrieval process?

Solution



Architecture of the contextual IR system.



- After Implementing this search engine, we will determine interaction elements that aim to improve the retrieval process by placing the user at the center of the process.

Prof. Norbert Fuhr

Universität Duisburg-Essen

Sameh Frihat, M.Sc.

Universität Duisburg-Essen

Literatur

Fuhr, Norbert, et al. "An information nutritional label for online documents." ACM SIGIR Forum. Vol. 51. No. 3. New York, NY, USA: ACM, 2018.

Aswani N., Fuhr N. et. al., Khresmoi, Professional: Multilingual Semantic Search for Medical Professionals, ACM SIGIR Workshop on Health Search and Discovery: Helping Users and Advancing Medicine, 2013.

Fuhr N., Jordan M., Frommholz I., *Combining Cognitive and System-Oriented Approaches for Designing IR User Interfaces,* Proceedings of the 2nd International Workshop on Adaptive Information Retrieval, AIR, 2008.

Fuhr, N., *A Probability Ranking Principle for Interactive Information Retrieval.* Information Retrieval 11(3), 2008.

Kriewel S., Fuhr N., *An evaluation of an adaptive search suggestion system*, 32nd European Conference on Information Retrieval Research, *Springer, ECIR, 2010.*