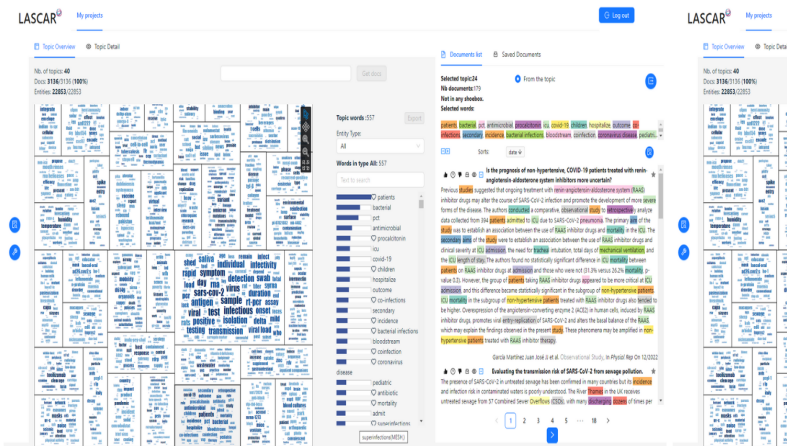


LASCAR

Papyrus, a visualization software for large scale systematic literature reviews: from a proof-of-concept to a minimum viable product



Inspiration

In a rapidly evolving healthcare research and development field, it is more difficult than ever to turn complex, multi-dimensional healthcare problems into research questions that are readily answerable within available time and resources. LIST has developed Papyrus, an NLP-based visualization software to facilitate the literature review process and has published a ‘proof of concept’ study, in which a first version of the tool was trialed in a scoping review (see: [Applying a novel approach to scoping review incorporating artificial intelligence: mapping the natural history of gonorrhoea | BMC Medical Research Methodology](#)). Using public research funds from the [JUMP programme](#) of the [Luxembourg National Research Fund \(FNR\)](#), we are currently lifting the Papyrus technology from a proof-of-concept software to a minimum viable product.

Innovation

The LASCAR project aims to further develop interactive visualizations and integrate them in an easy to deploy and operate software to improve the efficiency, reproducibility, and reliability of the systematic literature review process. In this framework, LIST aims to support the following functionality:

- Explore a large scientific corpus quickly and define efficiently key concepts under research;
- Identify areas within a topic that are most relevant and quantify the related literature available;
- Formulate optimal research questions leading to a focused but comprehensive literature search;
- Screen titles/abstracts and full-texts efficiently and transparently.

To achieve this, LIST will adapt Papyrus to integrate interactive visualizations to support the pre-scoping phase of systematic reviews with better transparency and quality:

- for a **better quality of the systematic literature review output**;
- to **save time by avoiding an unnecessarily long process** leading to poor results eventually.

APPROACH

In the LASCAR project two main features are planned to be integrated in Papyrus:

1. Visualization of topics and queries
 - for a better transparency and quality of the pre-scoping phase;
 - for a better trade-off between sensitivity and precision of queries.
- Visualization for contextualized AI-assisted screening
 - to support sophisticated strategies for inclusion/exclusion decisions;
 - to use explainable and trustworthy AI;
 - to reduce time and effort during screening;
 - to increase the accuracy of the article selection.

Involving experts early in a user-centered design is key to ensuring a useful and usable solution. To understand the experience with, and the limitations of, the systematic literature review process, and identify how the software could improve this process, we are collecting information from experts:

1. A fifteen-minute anonymous survey can be taken at the link below: <https://survey.list.lu/index.php/686541>.
2. We organize one-hour remote discussion sessions to better understand the expert needs, and to hear their views concerning the features they would like to see integrated in such visualization software.
3. We offer experts the opportunity to test the software and give us feedback concerning which features to add or to improve.

Contact us at lascar@list.lu if you would like to receive more information or to test the software.

Partners

Epi-C, Epidemiology-Consultancy (NL)

Financial Support

Luxembourg National Research Fund (FNR)

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