“Intuitive Access to Browser Information: Retrieval and Interaction”

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Target Group
Master Students interested in the domain of information retrieval and human-computer interaction. The research would focus on exploring data analysis and UX methodology. The development would focus on information extraction, ranking, and browser plugin implementation.

The Topic
Browser history and tabs are an integral part of how people browse and navigate the Web. In our daily browsing operations, we often need to revisit the pages we have seen before. Although history and tab management is a common feature in all major web browsers, it is typically represented by simple temporally ordered lists of independent pages with limited contextual cues and opportunities for intuitive access. However, more often end-user need a specific piece of information and would require to revisit several pages from history or browse through all tabs. Therefore, in this project, the goal is to provide intuitive access to browser historical information so users can query and access the specific information. This will include two-fold research challenge:

Retrieval: How can we effectively structure user browsing history? – includes the challenge to propose a data collection and analysis framework for browsing activity, e.g., parsing and indexing mechanism to organize the browser information in semi-structured and structured form.

Interaction: How can we provide intuitive access to users on their browsing history? – Need to study different interaction methods to satisfy information need for end-users, e.g., you may enable Siri like assistance to support queries like “show me the image of Cristiano Ronaldo I saw yesterday” or “show me the page with a table on covid vaccine side effects”

Procedure
First you need to study the current challenges user face while accessing browser history or managing tabs. Then as per user requirements, work will focus on the research and development of different modules and integration for effective access to browser information. We will follow the complete user-centered research cycle including the requirement analysis, design, development, and evaluation. Students would submit a comprehensive report (in English) at the end of the project to document their work.