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Context aware knowledge bases for efficient contextual retrieval: Design and methodologies

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Abstract

Contextual retrieval is a critical component for efficient usage of knowledge hidden behind the data. It is also among the most important factors for user satisfaction. It essentially comprise of two equally important parts – the retrieval mechanism and the knowledge base from which the information is retrieved. Despite the importance, context aware knowledge bases have not received much attention and thereby, limiting the efficiency of precise context aware retrieval. Such knowledge bases would not only contain information that has been efficiently stored but the knowledge contained would be context based. In other words, machines would understand the knowledge and its context rather than just storing data. This would help in efficient and context aware retrieval. The current paper proposes rules and methodologies for construction of such context aware knowledge bases. A case study to demonstrate the application of the methodology and test the efficiency of the proposed methodology has also been presented. The results indicate that knowledge bases built on these principles tend to generate more efficient and better context aware retrieval results. © Springer Nature Singapore Pte Ltd. 2019.

Author Keywords

Context aware Knowledge base; Contextual knowledge base; Contextual machine understanding; Contextual retrieval; Contextual storage; Contextual understanding

Index Keywords

Digital storage, Efficiency, Human computer interaction; Contextual knowledge, Contextual retrieval, Contextual understanding, Knowledge base, Machine understanding; Knowledge based systems

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