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Knowledge management for space activities in the digital transformation age (2)

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AUTOMATED KNOWLEDGE CENTRE WITH MACHINE LEARNING APPROACH

Abstract

In today's world, most of the organizations are information-driven.Information that is readily available helps teams make more informed decisions. In most of the organizations, information is kept in an unstructured manner such as in- cluttered inboxes, unorganized repositories and the brains of co-workers which consumes significant amount of time in gathering and retrieval of useful information spread across multiple sources. An Automated knowledge Centre with Machine Learning Approach was conceived to mitigate these problems. A centralized knowledge repository was developed for the storage and retrieval of Information. The pooled information is permanently archived, and a knowledge base is build using machine learning technology which can recognize the search patterns and deliver the best of Organization's collective intellectual capital. To collect maximum information from employees social engineering approaches were envisaged and incorporated. Machine learning modules are inbuilt to integrate through the back end for following outcomes- (1) Automated categorization of information, (2) Search engine optimization for faster searching, (3) Artificial intelligence to understand the query and Auto-generation of solution (4) In-context searching by integrating with other resources like library (5) Event monitoring to analyze search pattern so that area of general interest can be understood. A hybrid machine learning method is implemented which uses both domain knowledge and classified training methods. It maps problem-specific "domain theories", represented in propositional logic, into neural networks and then refines this reformulated knowledge using back propagation. For implementing this, whenever new information is uploaded to the knowledge base, OLAP (Online analytical processing) is carried out. As a result, checksum, keyword, indexing and proper labeling are performed. On scheduled basis, this data is given for machine learning.

Automated Knowledge Centre has facilitated in resourceful collaboration among employees by bringing in more views, diverse opinions and varied experiences to the process of decision making based on collective knowledge and expertise. This has enabled faster Information retrieval and ensures proper archival, retrieval and synthesis of knowledge.