# **Information Retrieval using Semantic AI Analysis**

## **Problem and Domain**

Whilst researching for potential ideas to submit as my project proposal, I came to the realisation that many sources are hard to find especially when there are several trusted search engines (i.e. Google, Google Scholar, Bing, Yandex, DuckDuckGo) that provide different sources, where some are useful, and some are completely irrelevant. To counter this unproductive process, I want to suggest, research, analyse and develop an information retrieval application that will find the most appropriate resource for a *(A.1)* particular input.

As the rapid growth of online learning platforms has resulted in vast repositories of learning resources, traditional keyword-based search mechanisms often fail to provide relevant results, leading to frustration among students & educators. Many searches return either too many irrelevant results or miss key learning due to the lack of context-aware retrieval. The domain will be based upon education search and e-learning retrieval systems.

## **References**

*(A.1)* Codex, A.C. (2024). Apache Solr and Machine Learning: Enhancing Search with AI. [online] Reintech.io. Available at: https://reintech.io/blog/apache-solr-machine-learning-enhanced-search [Accessed 18 Feb. 2025].

*(B.1)* Shah, N. (2018). *ARXIV data from 24,000+ papers*. [online] Kaggle.com. Available at: https://www.kaggle.com/datasets/neelshah18/arxivdataset [Accessed 18 Feb. 2025].

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