Building Knowledge Graphs based on Binary Associations between Research Topics using Apriori

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Abstract

Academic and scientific research is very important in developing communities. Interdisciplinary research is thriving and it became the focus of many organizations in academia and industry. Scopus is one of the largest databases of peer-reviewed content. It is a very popular platform for researchers to visit when doing research. Scopus have developed the All Subject Journal Classification (ASJC) hierarchy to denote the research topics covered in their database. The relations between the subjects is not represented by the ASJC. It is represented in a tree like structure of topics and subtopics of research. Journals indexed in Scopus state research topics that they publish in using ASJC topics. The combination of such research topics can be used for discovering associations between research topics. Using Apriori for frequent patterns discovery of co-occurring ASJC topics can build a knowledge graph of associations between the research topics. Using data retrieved from Scopus and with D3 visualization, this paper present a technique for building such knowledge graphs which can be used to build a larger graph database of connected research keywords.
References

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Index Terms

Computer Science           Data Mining

Keywords

Association Rules, Scopus, Apriori, Topics Analysis, Knowledge Graphs.