

عنوان مقاله:

Accelerating Legislation Processes through Semantic Similarity Analysis with BERT-based Deep Learning

محل انتشار:

ماهنامه بین المللی مهندسی، دوره 37، شماره 6 (سال: 1403)

تعداد صفحات اصل مقاله: 9

نویسندگان:

J. Naseri - Faculty of Computer Engineering, Shahrood University of Technology, Shahrood, Iran

H. Hasanpour - Faculty of Computer Engineering, Shahrood University of Technology, Shahrood, Iran

A. Ghanbari Sorkhi - Faculty of Electrical and Computer Engineering, University of Science and Technology of Mazandaran, Behshahr, Iran

خلاصه مقاله:

Countries are managed based on accurate and precise laws. Enacting appropriate and timely laws can cause national progress. Each law is a textual term that is added to the set of existing laws after passing a process with the approval of the assembly. In the review of each new law, the relevant laws are extracted and analyzed among the set of existing laws. This paper presents a new solution for extracting the relevant rules for a term from an existing set of rules using semantic similarity and deep learning techniques based on the BERT model. The proposed method encodes sentences or paragraphs of text in a fixed-length vector (dense vector space). Thereafter, the vectors are utilized to evaluate and score the semantic similarity of the sentences with the cosine distance measurement scale. In the proposed method, the machine can understand the meaning and concept of the sentences by using the BERT model coding method. The BERT model considers the position of the entities in the sentences. Then the semantic similarities of documents, calculating the degree of similarity between their documents with a subject, and detecting their semantic similarity are done. The results obtained from the test dataset indicated the precision and accuracy of the method in detecting semantic similarities of legal documents related to the Islamic Consultative Assembly of Iran, as well as the precision and accuracy of performance above 90%.

کلمات کلیدی:

Text Mining, Neural Network, Semantic search, Sentence embedding in vector space, BERT model

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1941847>

