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Document type
Conference Paper

Source type
Conference Proceedings

ISBN
978-172811064-6

DOI
10.1109/ICCCE50029.2021.9467178

Publisher
Institute of Electrical and Electronics Engineers Inc.

Original language
English

View less ⌃

Classification of Quranic Topics Using Ensemble Learning

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Author keywords

Indexed keywords

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Citations

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Funding details

Abstract

the real datasets in the world usually are imbalanced; the number of samples for their classes is not equal. Classifying these datasets makes the classifiers pay attention to the class with more samples

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than the classes with fewer samples. The Qur'anic dataset can be considered an imbalanced dataset because verses of the Qur'anic topics are not equal. Many studies have been performed to classify Qur'anic text using different classifiers. However, few studies classified the Qur'anic verses based on Imbalanced Learning (IL). So, this work aims to classify the Qur'anic text using Ensemble methods, Boosting and Bagging. The base classifiers of these methods were LibSVM, Naïve Bayes, KNN, and J48. Three techniques are conducted in this paper based on the standard classifiers. The three techniques are: implementing the base classifiers alone, implementing these classifiers with the Boosting method, and implementing the classifiers with the Bagging method. The results showed that the Quranic classification performance was improved when the ensemble methods were applied for the imbalanced Qur'anic verses in the standard classifiers. © 2021 IEEE.

Author keywords

classification ; ensemble methods; imbalanced; Quran; topics

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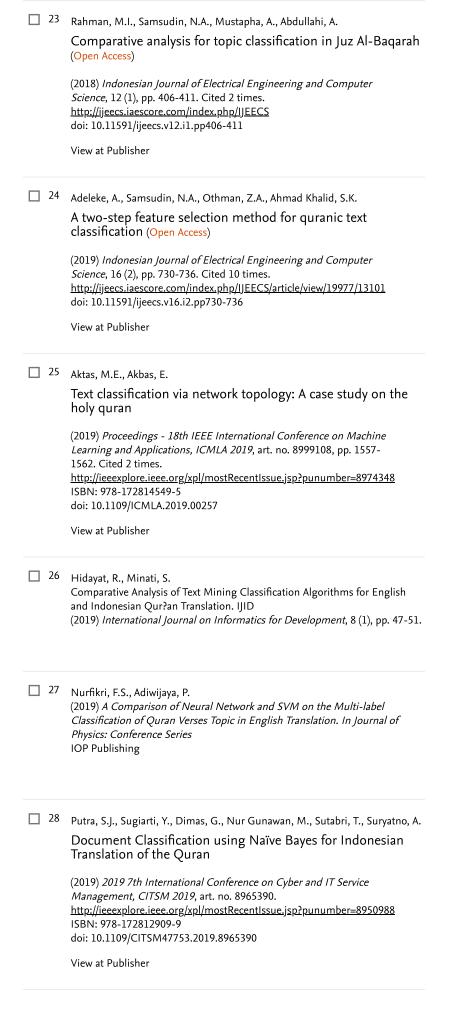ISBN: 978-146736400-3
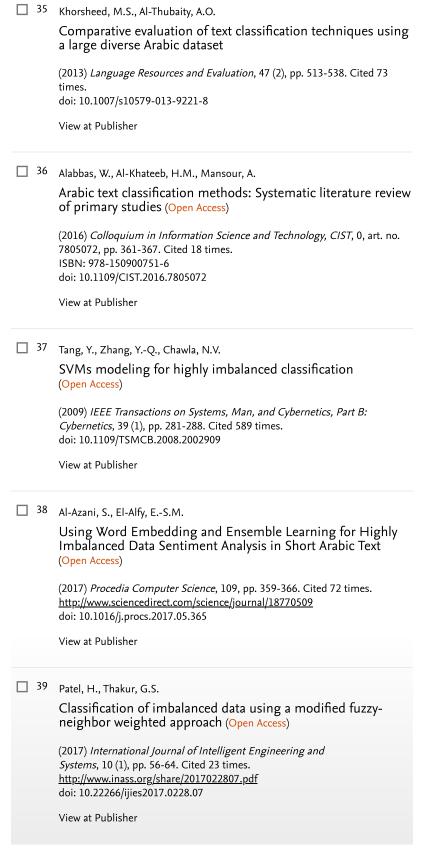doi: 10.1109/SACI.2013.6609011

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