Special Issue on Machine Learning in Scientometrics

Scientometrics is a domain that performs a quantitative and qualitative assessment of research and scientific progress. The field has earned popularity in the last few years owing to the need to measure research outputs at individual, institutional, and geographical levels. As a result of this need, different parameters are brought up, and various databases like Scopus, Web of Science, and Google Scholar are built for the computation of these parameters. The data generated and stored as a result of proliferation of research papers and other scientific activities is vast. Analysis of the data cannot be performed without the intervention of sophisticated tools and techniques. Consequently, the use of machine learning algorithms for carrying out tasks like classification, regression, clustering, and associations on these databases becomes imminent. The indicators to mark research performance use citation information in a well-defined way. Citations have become a key component in evaluating performance for authors, articles, and journals. To evaluate the role of machine learning in scientometrics, ML techniques can help in predicting citation count, can provide useful insights on computing new bibliometric indexes and also, in finding associations among them. The usage of powerful statistical tools like multiple linear regression, convex/concave optimization, and gradient ascent/descent algorithms can be explored in scientometric and bibliographic analysis.

The special issue captures the baseline, sets the tempo for future research in India and abroad and prepares a scholastic primer that would serve as a standard document for future research. The special issue discusses methods that are applicable to scientometrics but are not currently used, and also making computer science practitioners aware of the interesting problems that complex scientometric/bibliometric data sets provide. We’re extremely happy to announce that selected articles, original and unpublished, discuss new developments in efficient models for complex computer experiments and data analytic techniques which can be used in scientometric data analysis as well as related branches in physical, statistical, and computational sciences.

Regards

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