Ranking and Mapping Scholarly Literature

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Eigenfactor.org: A New Measure of Journal Quality

Using a method similar to that used by Google to rank webpages, Eigenfactor.org is a new way to measure the importance of scholarly literature. By this approach, journals are considered to be influential if they are cited often by other influential journals. Iterative ranking schemes of this type are known as eigenvector centrality methods.

The Eigenfactor score of a journal is an estimate of the percentage of time that library users spend with that journal. The Eigenfactor algorithm corresponds to a simple model of research in which readers follow chains of citations as they move from journal to journal. Imagine that a researcher goes to the library and selects a journal article at random. After reading the article, the researcher selects at random one of the citations from the article. She then proceeds to the journal that was cited, reads a random article there, and selects a citation to direct her to her next journal volume. This researcher does this ad infinitum.

The amount of time that the researcher spends with each journal gives us a measure of that journal’s importance within network of academic citations. Moreover, if real researchers find a usable fraction of the articles that they read, the amount of time that our random researcher spends with each journal gives us an estimate of the amount of time that real researchers spend with each journal. While we cannot carry out this experiment in practice, we can use mathematics to simulate this process (see Eigenfactor.org).

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