

Entropy and search engines

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Entropy, a term loosely referring to the disorder of a physical system and infamously associated with the Second Law of Thermodynamics, wherein we know that it ultimately increases in any closed system, might be used to gauge something altogether different in the digital world –

search engine optimisation.

S. Lakshmi of the Department of Electronics and Communication Engineering, at RVS College of Engineering, in Dindigul, B. Sathiyabhama of the Department of Computer Science Engineering, at Sona College of Technology, in Salem, and K. Batri of the Department of Electronics and Communication Engineering, at the PSNA College of Engineering and Technology, also in Dindigul, India, have attempted to analyse and measure the uncertainty associated with the relevant document selection in web-[search](#) engines.

Search engine entropy is thus important not only for the efficiency of search engines and those using them to find relevant information as well as to the success of the companies and other bodies running such systems, but also to those who run websites hoping to be found and visited following a search. Search engine optimization (SEO) encompasses a multitude of strategies a website owner might employ in their efforts to ensure that their website reaches a higher position in the [search engine results](#) pages (SERPs).

The team explains how they are using entropy to add a metric to the number of index terms and their frequency, and how this influences the relevance calculation carried out by [search engine](#) algorithms. "The variation in term frequency either in processed web documents or in users' queries influences the relevance calculation," the team explains. "This," they suggest, "leads to an uncertainty associated with the document selection and its relevance calculation." As such, a measure of [entropy](#) can be made by varying the documents' term frequency or user's query term frequency to reveal how SEO might be carried out. The team has successfully tested their entropic approach to SEO against two of the most well-known search engines, Bing and Google.

More information: S. Lakshmi et al. Entropy a new measure to gauge

search engine optimisation, *International Journal of Enterprise Network Management* (2018). [DOI: 10.1504/IJENM.2018.10015770](https://doi.org/10.1504/IJENM.2018.10015770)

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