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Editorial

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Two papers are contained in this issue.

The first one [1] presents a semantic method of matching queries and documents which realizes more phrase-level semantic information retrieval. The second paper [2] tries to find significant features of agricultural products based on correlation analysis. It demonstrates how the correlation analysis is important to draw useful features.

The first paper discusses a promising way to improve information retrieval from the viewpoint of phrase-oriented semantics rather than a standard bag-of-words approach. For this purpose, it proposes to use semantic processing representation of sentences, which can describe roles and their participants in phrases. The input query is also a text in natural language, so it must be matched with the semantic processing forms extracted from a document. The set of semantic processing forms is viewed as a kind of conceptual graph of words related to another words by means of roles. In addition, words are placed in a knowledge lattice. The act of matching input queries with documents is performed at the conceptual graph level under the help of the knowledge lattice. The initial knowledge lattice is formed in a standard way, but the proposed system has a function of placing a new term (word) at an adequate place in the knowledge lattice. It would be so important to have such a method of classifying terms in the knowledge lattice. The paper also demonstrates how the semantic processing approach under knowledge lattice is more powerful and significant particularly when the target documents come from some specialized areas of researches in which phrase level information among words is a key to find their meaning.

The second paper examined several physicochemical parameters about agricultural produces as tomatoes, and found some indices for their quality. Particularly, two important correlations among the parameters are proposed experimentally. The first one

is the correlation between firmness and Hue of tomatoes calculated from the data in the color space. The author gives a highly accurate correlation expression using exponential function. The second one is a prediction model using a linear regression for lycopene in terms of absorbance at a particular wavelength. It would be valuable for production control based on such correlations of good fitness.

References

1. J. Leone and Dong-Guk Shin, A Phrase-based Ontology Enabled Semantic Processing System for Web Search, Transactions on Machine Learning and Data Mining, Volume 6 - Number 2 - October 2013, p. 3-19, ibai publishing, (ISSN: 1865-6781).
2. G. Niño-Medina, J. Cecilia Rivera-Castro, J.A. Vidales-Contreras, H. Rodriguez-Fuentes and A.I. Luna- Maldonado, Physicochemical parameters for obtaining prediction models in the postharvest quality of tomatoes (Solanum lycopersicum L.), Transactions on Machine Learning and Data Mining, Volume 6 - Number 2 - October 2013, p. 19-31, ibai publishing, (ISSN: 1865-6781).