Bagadi, R. (2017). Finding The Next Term Of Any Given Sequence Using Total Similarity & Dissimilarity {New}. ISSN 1751-3030. *PHILICA.COM Article number 1164.* http://philica.com/display_article.php?article_id=1164

Finding The Next Term Of Any Given Sequence Using Total Similarity & Dissimilarity {New}

ISSN 1751-3030

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Abstract

In this research investigation, the author has detailed a novel scheme of finding the next term of any given sequence.

Theory

Given any Sequence of the kind,
$S = \{y_1, y_2, y_{3,}.....,y_{n-1}, y_n\}$ which represent some Time Series data of concern, we write the Next Term of this sequence as

$$y_{n+1} = \frac{\left\{\overbrace{\sum_{i=1}^{n}\{Smaller(y_i, y_{n+1})\}}^{Similarity}\right\} + \left\{\overbrace{\sum_{i=1}^{n}\{Larger(y_i, y_{n+1}) - Smaller(y_i, y_{n+1})\}}^{Dissimilarity}\right\}}{n}$$

Equation 1

Solving the above Equation 1 for y_{n+1} gives us the Next Term of the given Sequence $S = \{y_1, y_2, y_{3,}.....,y_{n-1}, y_n\}$.

One can note that this Grand Equation can be used to find the Next Prime as well, given a sequence of Primes from the beginning, while considering 1 as Prime as well. One can note the concepts of Similarity & Dissimilarity from author's [1].

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