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

Authored By
Ramesh Chandra Bagadi
Affiliation 1:
Founder, Owner, Director & Advising Scientist In Principal
Ramesh Bagadi Consulting LLC, Madison, Wisconsin 53726
United States Of America
Email: rameshcbagadi@uwalumni.com
Telephone: +91 9440032711

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

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

Equation 1

Solving the above Equation 1 for y_n 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].

References

1. Bagadi, R. (2017). Total Intra Similarity And Dissimilarity Measure For The Values Taken By A Parameter Of Concern. {Version 2}. ISSN 1751-3030. *PHILICA.COM Article number 1153.*
   http://www.philica.com/display_article.php?article_id=1153
2. http://vixra.org/author/ramesh_chandra_bagadi
3. http://philica.com/advancedsearch.php?author=12897