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Innovative Approach: Pyramid Series Accumulation

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Abstract

This paper introduces a novel formula to enhance the utilization of accumulating a bunch of series expressions sequentially whereas in terms of traditional method limitation causes in case of large datasets. The research explores advanced techniques that integrate numerical methods with distinctive analysis efficiently. Current methods often fail to work for huge expressions summation such as: $n + (n-1) + (n-2) + (n-3) + \ldots \ldots \ldots (n-N)$ where $n >= N$. The research aims to highlight the continuous decreasing values that sum up and furthermore, works for that equation where the values contain two constant differences. That problem also can be solved using novel formulas. If we know the values of n=given number from user, m=number of expressions, summation of natural numbers till infinity and in other case summation of two continuous deviations from second expression to last one. This method paves the way for more efficient modeling in fields such as physics, engineering, and data science, where real-time solutions are critical and time consuming. Outcome results demonstrate a significant improvement in accuracy and computational time compared to existing techniques, particularly in mathematical cases.

KEYWORDS:
Novel Formula, 2. Series Expressions Summation, 3. Large Datasets, 4. Two Constant Differences in Expressions.

Biographies:

Afroza Amin, Undergraduate Student at American International University-Bangladesh, pursuing a degree in Computer Science & Engineering degree. I have always been passionate about Mathematics, core subjects such as C++ & Java programming language, Data Structure. Apart from academics, actively involved in tutoring pupils which has helped me develop skills like teaching, leadership, and problem-solving. Moreover, it returns in building up my confidence ,improving my communication skills. Furthermore, I have a passion for cake baking, which allows me to explore my creativity and share joy through my culinary creations. I also enjoy coding and deep learning, which allows me to stay creative, balanced and enhance patience level. With hard work and a curious mind, I can make a meaningful impact in my field is my belief.

Md. Mortuza Ahmmed is a Statistician with extensive research interests, primarily focused on practical applications. He specializes in utilizing various statistical techniques across different fields to achieve more accurate and precise analyses and forecasts. His core academic pursuits revolve around public health, education, and machine learning. A key aspect of his work involves empowering students with technical expertise, helping them transform their ideas into tangible outcomes that contribute to building a modern society.