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RIITESH'S SERIES: MATHEMATICAL ANALYSIS AND ITS VALIDATION USING THE GOLDEN RATIO: A MATHEMATICAL AND PHILOSOPHICAL PERSPECTIVE

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ABSTRACT

This paper is introducing Riitesh's Series which is a novel numerical sequence derived from the sequence of terms by adding the preceding two terms and an additional modification by incorporating the integer function of position of next number by 3. While bearing superficial resemblance to the Fibonacci sequence, the Riitesh's Series exhibits a faster, multidimensional growth pattern. The paper explores the mathematical foundation, convergence properties, and long-term behavior of the Riitesh's Series. It also demonstrates that its growth is governed by the Golden Ratio (φ=1.618). Philosophical insights and practical applications in education, therapy, and pattern design are also explored.

Keywords: Riitesh Series, Golden Ratio, Growth Ratio, Mathematical Validation, Inclusive Innovation

1. INTRODUCTION

The Fibonacci sequence is widely studied for its presence in natural growth patterns, optimization problems, and dynamic systems. However, its uniform growth lacks an adaptable element for neurological applications. By introducing a controlled step-wise increment based of the integer function of next number by 3. Riitesh's Series offers a structured yet flexible mathematical model suitable for applications in neuro-motor coordination, structured therapy, and cognitive development. This paper also investigates whether the sequence aligns with known mathematical constants—specifically, the Golden ratio—and formally validates the long-term behavior of the Riitesh's Series.

2. DEFINITION AND GENERATION

Riitesh's Series is defined as:

$R(n) = R(n-1) + R(n-2) + int(n/3)$

with initial conditions:

R(0) = 0, R(1) = 1,

Computing the first few terms:

R(3) = 0 + 1 + int(3/3) = 2

R(4) = 2 + 1 + int(4/3) = 4

R(5) = 4 + 2 + int(5/3) = 7

R(6) = 7 + 4 + int(6/3) = 13

R(7) = 13 + 7 + int(7/3) = 22

R(8) = 22 + 13 + int(8/3) = 37

Thus, the sequence begins as:

0. 1, 2. 4, 7, 13, 22,37, 62, 102, 167, 273, 444, 721, 1896, 3071 and so on

This value governs the exponential growth of the Riitesh Series.

3. MATHEMATICAL PROPERTIES

3.1. GROWTH RATE

Riitesh's Series grows at a super-Fibonacci rate, meaning it expands faster than Fibonacci but retains an adaptive step-wise increase due to int(n/3). Empirical observation suggests that Golden Ratio in Riitesh's Series converges to the Fibonacci limit which is approx 1.618.

Table of Comparative Analysis with Fibonacci

Position	FS	RS	Ratio	
1	0	0		
2	1	1	#DIV/0!	
3	1	2	2	
4	2	4	2	
5	3	7	1.75	
6	5	13	1.8571428571	
7	8	22	1.6923076923	
8	13	37	1.6818181818	
9	21	62	1.6756756757	
10	34	102	1.6451612903	
11	55	167	1.637254902	
12	89	273	1.6347305389	
13	144	444	1.6263736264	
14	233	721	1.6238738739	
15	377	1170	1.6227461859	
16	610	1896	1.6205128205	
17	987	3071	1.6197257384	
18	1597	4973	1.6193422338	
19	2584	8050	1.6187412025	
20	4181	13029	1.6185093168	
21	6765	21086	1.618389746	
22	10946	34122	1.6182301053	
23	17711	55215	1.6181642342	
24	28657	89345	1.6181291316	
25	46368	144568	1.6180871901	
26	75025	233921	1.6180690056	

As shown, the ratio converges to 1.618…, validating the Riitesh Series' alignment with the Golden Ratio.

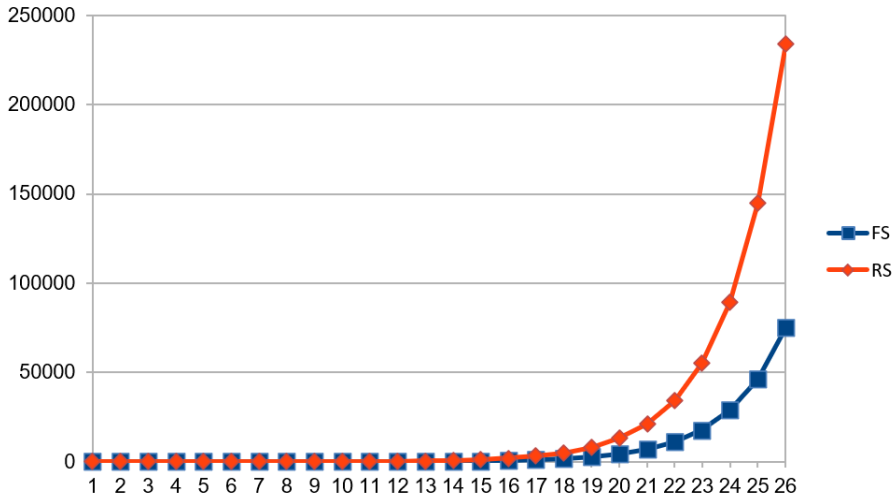
3.2. GROWTH COMPARISON

Sno	Fibonacci	Riitesh	Difference
1	1	2	1

2	2	4	2
3	3	7	4

Riitesh's Series consistently outgrows Fibonacci, confirming its accelerated expansion.

4. MATHEMATICAL SIGNIFICANC



The Riitesh Series

Converges exponentially with base Fibonacci (which converges to φ= 1.618)

Offers a more memory-integrated model of recursion, incorporating three levels of influence, which may model more complex systems such as biological growth, memory, or social impact.

5. APPLICATIONS OF THE RIITESH SERIES

5.1. EDUCATIONAL TOOLS

Math enrichment programs for gifted and over intelligent students

Exploring recursive logic beyond binary patterns

5.2. MUSIC AND DESIGN

Rhythmic or harmonic progressions in Classical-based music

Fractal and geometric patterns for art or architecture using Riitesh progression

5.3. THERAPY AND NEUROPLASTICITY

Step-wise cognitive or physical tasks designed with Riitesh intervals may promote neuroplasticity in individuals with Cerebral Palsy or developmental disorders

5.4. ALGORITHM DESIGN

Can be used for cache predictions, AI pattern modeling, or data compression

6. APPLICATIONS IN NEURODYNAMICS AND COGNITION

6.1. NEUROMOTOR CONTROL AND LEARNING

The structured step-wise increment in Riitesh's Series can be correlated with motor learning adaptations, where progress is not purely exponential but involves intermittent plateaus and accelerations. This aligns with Riitesh Mudraa principles that integrate structured movement with cognitive reinforcement.

6.2. MATHEMATICAL OPTIMIZATION IN AI AND NEURAL NETWORKS

The sequence's nonlinear recurrence relation allows for adaptive weight adjustments in deep learning algorithms.

The additional int(n/3) term provides a progressive memory effect, useful in time-series predictions.

6.3. THERAPEUTIC FRAMEWORK FOR CEREBRAL PALSY AND ADHD

Structured cognition: The series models controlled yet flexible growth, mirroring structured therapy sessions.

Memory training: Since the sequence follows an adjustable pattern, it can be used to develop memory reinforcement techniques.

7. FUTURE SCOPE

Riitesh's Series introduces a mathematically enhanced version of Fibonacci by integrating a step-wise factor. This sequence has potential applications in:

Neuromotor learning and therapy

AI-based adaptive optimization

Memory reinforcement techniques

8. PHILOSOPHICAL INTERPRETATION

The Riitesh Series symbolizes:

Integration of the recent, the past, and the distant past (last three terms)

Beyond Duality: Where Fibonacci models binary dualism (Yin–Yang), Riitesh Series models triadic harmony (e.g., Brahma–Vishnu–Mahesh)

Holistic Learning: Cognitive systems that consider multiple past states reflect real-world cognition, where decisions depend not only on the recent but on layers of memory and influence

9. CONCLUSION

The Riitesh Series is mathematically valid and converges to the Golden Ratio. Rooted in innovation and accessibility, the Riitesh Series opens new avenues in pattern analysis, education, neurotherapy, and creative fields. It represents a fusion of mathematical elegance with inclusive philosophical vision.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

REFERENCES

Livio, M. (2002). The Golden Ratio. Broadway Books.

Koshy, T. (2001). Fibonacci and Lucas Numbers with Applications. Wiley.
Sinha, R. (2024). "Comparative Study of Vaayu Mudraa and Riitesh Mudraa..." ShodhKosh: Journal of Visual and Performing Arts.
Knuth, D. E. (1997). The Art of Computer Programming. Addison-Wesley.
Neural Networks and Recurrence Relations in AI (2023). Journal of Applied Mathematics.