Lacunary Interpolation at Odd and Even Nodes

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 153
Number 1

Year of Publication: 2016

Authors:
Kulbhushan Singh, Ambrish Kumar Pandey

10.5120/ijca2016910026

Abstract

Here a special $(0, 2; 0, 3)$ lacunary interpolation scheme is considered where the data are prescribed unevenly at even and odd nodes of an arbitrarily defined partition of the unit interval $I = [0, 1]$.

The problem described as, we have the function values and second derivatives at odd nodes, whereas function values and the third derivatives at even nodes are known, we proved that there exists a unique quartic spline of continuity class $C^2$ by solving the above-mentioned interpolation scheme.

Furthermore, it is also proved that this spline function converges to the given function with the desired order of accuracy.

References

Index Terms

Computer Science
Information Sciences

Keywords

Lacunary interpolation, splines.