Abstract

Let $f$ be a real valued function defined in $[0, 1]$, with values known at intermediate points such that the first derivatives of $f$ at all nodes are also known at intermediate points. In this paper, we construct an interpolatory quartic spline $s$ which interpolates the function $f$. Unique existence and convergence of this spline are also established. This type of construction is known to have found aesthetic utility in finding areas under or bounded by polynomial curves.

**Index Terms**

Computer Science Applied Mathematics

**Keywords**

Lacunary interpolation spline diagonal dominance