A Study on Interval Lagrange Interpolation

Angelina Cardenas

Numerical Interpolation and approximation are powerful tools to solve real world application problems. However, due to data measurements in the real world not being 100% accurate, and current computers only perform finite floating point arithmetic, classical numerical interpolation and approximation methods may not accurately represent the real world.

To correctly reflect the errors mentioned above, people have studied interpolations with interval data and interval computations. In this project, software was developed to implement the well-known Lagrange interpolation algorithm with both interval data type and interval computations. In this report, programs and numerical results are presented. Basic concepts of numerical interpolation and approximation are also reviewed briefly in the report.

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Department of Computer and Mathematical Sciences, University of Houston-Downtown.