INTERPOLATING OF QUARTIC HERMITE SPLINE CURVE IN DESIGNING 2-DIMENSIONAL OJECTS

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ABSTRACT

This project addresses the problem of designing 2-Dimensional(2-D) objects using quartic Hermite spline with different shape parameters in the field of Computer-Aided Geometric Design (CAGD). The study achieves three objectives which are, designing 2-Dimensional objects using quartic Hermite spline with different shape parameter values, second, analysing the behaviour and characteristics of these objects, and third, determining the optimal shape parameter value for designing 2-Dimensional objects. By adjusting the shape parameter, the curvature and shape of the spline curve change, influencing the overall design. The results demonstrate the versatility of quartic Hermite spline curves, revealing optimal shape parameter values for specific objects like a 2-D torus, flower, sun, and circular saw. The study provided understanding of the influence of shape parameters on the resulting curves and offered a methodology for selecting the best parameter values to achieve the desired shape.

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