

Capturing Planar Shapes By Approximating Their Outlines

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Summary

A non-deterministic evolutionary approach for approximating the outlines of planar shapes has been developed. Non-uniform Rational B-splines (NURBS) have been utilized as an underlying approximation curve scheme. Simulated Annealing heuristic is used as an evolutionary methodology. In addition to independent studies of the optimization of weight and knot parameters of the NURBS, a separate scheme has also been developed for the optimization of weights and knots simultaneously. The optimized NURBS models have been fitted over the contour data of the planar shapes for the ultimate and automatic output. The output results are visually pleasing with respect to the threshold provided by the user. A web-based system has also been developed for the effective and worldwide utilization. The objective of this system is to provide the facility to visualize the output to the whole world through internet by providing the freedom to the user for various desired input parameters setting in the algorithm designed. (c) 2005 Elsevier B.V. All rights reserved.

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