Capturing Outline Of Fonts Using Genetic Algorithm And Splines

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Summary

In order to obtain a good spline model from large measurement data, we frequently have to deal with knots as variables, which becomes a continuous, non-linear and multivariate optimization problem with many local optima. Hence, it is very difficult to obtain a global optima. In this paper, we present a method to convert the original problem into a discrete combinatorial optimization problem and solve it by a genetic algorithm. We also incorporate a corner detection algorithm to detect significant points which are necessary, to capture a pleasant looking spline fitting for shapes such cis fonts. A parametric B-Spline has been approximated to various characters and symbols. The chromosomes have been constructed by considering the candidates of the locations of knots as genes. The best model among the candidates is searched by using Akaike's Information Criterion(AIC). The method determines the appropriate member and location of knots automatically and simultaneously. Some examples are given to show the results obtained from the algorithm.

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