

Capturing Outlines Of Arabic Characters By Cubic Bezier

Approximation

Sarfraz, M; Masood, A

JOINT CONFERENCE INFORMATION SCIENCES, PROCEEDINGS OF THE 8TH

JOINT CONFERENCE ON INFORMATION SCIENCES, VOLS

1-3; pp: 1649-1652; Vol: ##

King Fahd University of Petroleum & Minerals

<http://www.kfupm.edu.sa>

Summary

An efficient outline approximation technique is presented using cubic Bezier curves which is ultimately used for capturing Arabic characters. Approximation technique is based on computation of data points which is a mixture of interpolating and approximating data points. Approximating data points can represent blobby and circular shapes very efficiently and interpolating points are useful to preserve the original shape of outlines at sharp corners. A normal piecewise cubic Bezier spline through these data points is an approximating curve which is CG(1) continuous. Data point detection process is based on efficient control point search algorithm. Recursive segment subdivision is employed to keep the approximation error within specified threshold limits. Demonstrated results show that only few data points can accurately represent the captured outlines. Any transformation operation on these data points results in overall transformation of captured outlines.

References:

1. BEUS HL, 1987, PATTERN RECOGN, V20, P291
2. CHETVERIKOV D, 1999, P 23 WORKSH AUSTR PA, P175
3. FREEMAN H, 1977, IEEE T COMPUT, V26, P297
4. HEARN D, 1997, COMPUTER GRAPHICS
5. HUSSAIN F, 2000, P INT C INF VIS, P337
6. KATZ R, 2003, JCS T, V3
7. LAM KM, 1994, P INT S SPEECH IM PR, P17
8. OTSU N, 1979, IEEE T SYST MAN CYB, V9, P62
9. ROSENFELD A, 1975, IEEE T COMPUT, V24, P940

10. SARFRAZ M, 2002, COMPUT GRAPH-UK, V26, P795
11. SARFRAZ M, 2003, ADV SOFT COMPUTING E, P109
12. SARFRAZ M, 2004, INT J IMAGE GRAPHICS, V4, P301
13. SARFRAZ M, 2004, P 1 INT C INF COMM T
14. SERRA J, 1982, IMAGE ANAL MATH MORP
15. SONKA M, 2001, IMAGE PROCESSING ANA, P142

For pre-prints please write to: abstracts@kfupm.edu.sa