

NURBS應用於損壞影像修復及影像壓縮之研究

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摘要

“ Non-Uniform Rational B-Splines ” 非均勻有理仿曲線一般簡稱為NURBS，由於NURBS具有完整的數學架構，因此被廣為採納而制訂成國際標準，在CAD/CAM及電腦繪圖等領域被廣泛應用。在2-D數位影像中可以視為NURBS的3-D曲面，因此我們將它應用在影像處理上。絕大多數的B-Spline應用在影像內插，直到1997年T. Watanabe提出以B-Spline的數學架構作為影像壓縮，爾後1999年J. W. Park and S. U. Lee利用B-Spline的內插的特性將它應用在影像修補上。然而Park and Lee ' s 未能適當的找出節點(knot vector)及控制點(control points)。為了解決這方面的缺點，我們使用bi-variate NURBS 曲面以解決影像上修補及壓縮的問題。在這我們提出單一隱藏層的類神經架構來決定3-D NURBS曲面所需的控制點，而實驗證明我們所提出的方法能得到較佳的結果。

關鍵詞：非均勻有理仿曲線

目錄

Table Chinese abstract.....	v	English abstract.....	v
.....vi Acknowledgment.....	vii	Table.....	vii
.....ix List of figure.....	xi	List of table.....	xi
.....xiv Symbol.....	xv	1 Introduction.....	xv
.....1 2 Introduction to B-Spline Curve and Surfaces.....	6	2.1 B-Spline Curve.....	10
.....7 2.2 Degree of a B-spline curve.....	9	2.3 Control Points.....	10
2.4 Knot vector and parameter u.....	11	2.4.1 Parameterization.....	11
.....16 2.5 B-Spline Basis functions.....	20	2.4.2 Knot Vectors.....	11
.....25 2.7 Rational B-Spline Curve and Surface.....	26	2.6 B-Spline Surface... ..	20
.....28 3 Introduction to B-Spline Curve and Surfaces.....	28	2.7 Rational B-Spline Curve and Surface.....	26
.....28 3.1 Parameterization, Knot Vector Selection and NURBS Surface Rendering.....	31	3 Introduction to B-Spline Curve and Surfaces.....	28
.....34 3.2 Determination of the Values of Control Points... ..	31	3.1 Parameterization, Knot Vector Selection and NURBS Surface Rendering.....	28
.....34 3.3 Experimental Results of Corrupted Image Restoration Using NURBS.....	34	3.2 Determination of the Values of Control Points... ..	31
.....40 4.1 Proposed approach for Image Compression Using NURBS.....	40	3.3 Experimental Results of Corrupted Image Restoration Using NURBS.....	34
4.2 Determination of Number of Control Points Needed for Image Block.....	43	4 Image Compression Using NURBS.....	40
.....47 5 Conclusions and Future Study.....	57	4.1 Proposed approach for Image Compression Using NURBS.....	40
.....57 Reference.....	59	4.2 Determination of Number of Control Points Needed for Image Block.....	43
	47 5 Conclusions and Future Study.....	47
	57 Reference.....	59

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