Errata on Chapter 8 in "Discrete Surfaces and Manifolds" by Li Chen

Chapter 8

Page 100: 8th line Definition 8.3.1. $f_J : J \to D'$

Page 101: 21st line "$d(r,p) - 1 \geq$" should be "$d(r,p) - 1 >$"

Page 101: 5th line from bottom, "x is obviously the shortest" should be "x is obviously in a shortest..."

Page 101: second line from bottom, "$<$" should be "$\leq$"

Page 102: 1st line from top, "$< \ldots <$" should be "$\leq \ldots \leq$"

Page 102: 7th line "2.2.1.1) if $d(r,p)$" should be "2.2.1.1) if $d(r,q)$"

Page 102: 9th line add "let $f(x) = f(r)$"

Page 102: 11th line "$<$" should be "$\leq$"

Page 102: 12th line "$f(p)$ and $f(p)$" should be "$f(p)$ and $f(q)$"

Page 102: At the end of line 18 miss a paragraph:

(*The paper was translated from Chinese, the previous one missed a paragraph*)

One can view $D' = T$ to be the tree with $f(r)$ as the root. When the path does not go through $f(r)$, $f(p)$ and $f(q)$ must be in the same proper subtree of T. There must be an α that is adjacent to $f(r)$ such that

$d(\alpha, f(p)) = d(f(r), f(p)) - 1$

$d(\alpha, f(q)) = d(f(r), f(q)) - 1$**.**

We should add here let $f(x) = \alpha$. (*It was not added since the last paragraph of the Chinese version the proof stated such a valuation. We can easily get $d(x,p) \geq d(f(x), f(p))$. And for all q, we have $d(x,q) \geq d(f(x), f(q))$.* **)**

Page 102: 9 line from bottom, Add "We have mathematically proved this theorem. The following discussion relates to algorithm Design.

Errata For the single paepr

"Gradually Varied Surfaces and Gradually Varied Functions" by Li Chen

Page 8: Definition 3.1. $f_J : J \to D'$

Page 9: 12th line "$d(r,p) - 1 \geq$" should be "$d(r,p) - 1 >$"

Page 9: second line from bottom, "x is obviously the shortest" should be "x is obviously in a shortest..."

Page 10: second line from top, "$<$" should be "$\leq$"

Page 10: forth line from top, "$<$ ... $<$" should be "$\leq ... \leq$"

Page 10: 10th line "2.2.1.1) if $d(r,p)$" should be "2.2.1.1) if $d(r,q)$"

Page 10: 12th line add "let $f(x) = f(r)$"

Page 10: 14th line "$<$" should be "$\leq$"

Page 10: 15th line "$f(p)$ and $f(p)$" should be "$f(p)$ and $f(q)$"

Page 10: At the end of page 10 miss a paragraph:

(*The paper was translated from Chinese, the previous one missed a paragraph*)

One can view $D' = T$ to be the tree with $f(r)$ as the root. When the path does not go through $f(r)$, $f(p)$ and $f(q)$ must be in the same proper subtree of T. There must be an α that is adjacent to $f(r)$ such that

$d(\alpha, f(p)) = d(f(r), f(p)) - 1$

$d(\alpha, f(q)) = d(f(r), f(q)) - 1$.

We should add here let $f(x) = \alpha$. (*It was not added since the last paragraph of the Chinese version the proof stated such a valuation. We can easily get $d(x,p) \geq d(f(x), f(p))$. And for all q, we have $d(x,q) \geq d(f(x), f(q))$.*)

Page 11: 11th line. Add "We have mathematically proved this theorem. The following discussion relates to algorithm Design.

The above change has been verified by Dr. Dave Mount, Professor of Computer Science in University of Maryland. Dave has checked the proof of Theorem 3.1 with me word by word in the afternoon on 4/21/2005. He accepted the proof. Many many thanks to Dave.

(4/23/2005)