

Errors in Third Printing

p. 97 Two lines before Equation 1.6.20, add the word “to”: not a case where one has to be delicate

p. 117 In part (4) of the proof, f and g should be \mathbf{f} and \mathbf{g} .

p. 132 Exercise 1.3.11: we should have asked, “What matrix operation should one perform to assign to each student his or her final grade?”

p. 142 Exercise 1.7.11: “but that $\lim_{h \rightarrow 0} \frac{1}{h}(f(0+h) - f(0) - mh) = 0$ never exists” should be “but that $\lim_{h \rightarrow 0} \frac{1}{h}(f(0+h) - f(0) - mh) = 0$ is never true.”

p. 142 Exercise 1.7.14 is like 1.7.13 part b.

p. 145 Exercise 1.8.9: $[D\mathbf{f}(\mathbf{0})]$ should be $[\mathbf{Df}(\mathbf{0})]$ and $\mathbf{g} \circ \mathbf{f}(\mathbf{x})$ should be $(\mathbf{g} \circ \mathbf{f})(\mathbf{x})$.

p. 191 in Equation 2.6.3, $[DS(A)]H$ should be $[\mathbf{DS}(A)]H$

p. 205 the first equation in Equation 2.7.40 should be $D_1 \mathbf{f}_1 = 1$, not $D_1 \mathbf{f} = 1$.

p. 209 Equation 2.7.56: A minus sign is missing from the term corresponding to $-\mathbf{D}\vec{F}(\mathbf{a}_0)^{-1}$; the equation should be

$$\vec{\mathbf{h}}_0 = \underbrace{\frac{-1}{\cos 2 - 1} \begin{bmatrix} \cos 2 & 1 \\ 1 - \cos 2 & 0 \end{bmatrix}}_{-\mathbf{D}\vec{F}(\mathbf{a}_0)^{-1}} \underbrace{\begin{bmatrix} 0 \\ \sin 2 - 1 \end{bmatrix}}_{\vec{F}(\mathbf{a}_0)} = \begin{bmatrix} \frac{\sin 2 - 1}{1 - \cos 2} \\ 0 \end{bmatrix} \sim \begin{bmatrix} -.064 \\ 0 \end{bmatrix},$$

p. 223 Equation 2.9.11: the \mathbf{Df} on the left-hand side should be \mathbf{Df}_y .

p. 228 Equation 2.9.22; the last term of the last entry on first row of the matrix should be $D_{n+m} \mathbf{F}(\mathbf{c})$ not $D_m \mathbf{F}(\mathbf{c})$:

$$L = \begin{bmatrix} [D_1 \mathbf{F}(\mathbf{c}), \dots, D_n \mathbf{F}(\mathbf{c})] & [D_{n+1} \mathbf{F}(\mathbf{c}), \dots, D_{n+m} \mathbf{F}(\mathbf{c})] \\ \mathbf{0} & I_m \end{bmatrix}.$$

p. 232 Exercise 2.1.9, the last line of part (c) should be

$$Q(n) = \frac{2}{3}n^3 + \frac{3}{2}n^2 - \frac{7}{6}n \quad \text{operations.}$$

Part (g): $n^2 - n$ operations, not $n^2 - 1$.

p. 245 Exercise 2.7.13 should be with exercises for Section 2.9.

p. 258 Equation 3.1.13 should be

$$D_{x,y} = \left\{ \begin{pmatrix} x \\ y \end{pmatrix} \text{ such that } x^2 + y^2 < 1 \right\}$$

p. 270 Last margin note: $\mathbf{u} + \mathbf{g}(\mathbf{u})$ is a point of the graph of \mathbf{g} not of \mathbf{u} .

p.301 Theorem 3.6.6, last line: is not a local maximum.

p. 336 Exercise 3.1.18, part (e): the set of non-invertible symmetric 2×2 matrices, not the set of non-invertible 2×2 matrices (addition of word “symmetric”).

p. 348 the word “constraint” on the last line of Exercise 3.7.16 (b) should be deleted.

p. 349 Exercise 3.8.10 does not need a star.

p. 467 in Exercise 4.11.3, $[f_k(x)]_R$ should be $[f_k]_R(x)$; two places:

$$\lim_{k \rightarrow \infty} \lim_{R \rightarrow \infty} \int_{\mathbb{R}} [f_k]_R(x) dx \neq \lim_{R \rightarrow \infty} \lim_{k \rightarrow \infty} \int_{\mathbb{R}} [f_k]_R(x) dx.$$

p. 472 $k \times k$ matrix not $n \times n$

p. 473 $U \subset \mathbb{R}^k$

p. 493 Exercise 5.2.5 has been changed; Exercise 5.2.6 is wrong as stated. Details will be given later.

p. 514 comma not period immediately before Equation 6.3.4

p. 535: first line after Equation 6.5.26, Example 6.4.6, not Definition 6.4.6.

p. 550 Def. 6.8.1: $U \subset \mathbb{R}^3$ not $U \subset \mathbb{R}^n$

p. 584 Exercise 6.10.1 should have said that \vec{F} is C^1 .

p. 663, last margin note: the statement that partitions of unity are only of theoretical interest is wrong. In fact, the “windows” used in signal processing are precisely a kind of partition of unity.