

Errata

Textbook of Machine Learning and Data Mining
with Bioinformatics Applications

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Errata

Chapter 2.

P.4

1.19 do → does

1.19 variable → variables

P.5

1.10 an → a

P.7

1. 22 examples → example

Chapter 3.

P. 37

1. 15: (3.49)

$$\frac{\partial f(\mathbf{U}, \mathbf{V})}{\partial U} \rightarrow \frac{\partial L(\mathbf{U}, \mathbf{V})}{\partial U}$$

1. 16: (3.50)

$$\frac{\partial f(\mathbf{U}, \mathbf{V})}{\partial V} \rightarrow \frac{\partial L(\mathbf{U}, \mathbf{V})}{\partial V}$$

1. 95 the means → the mean

P.39

1.2: (3.54)

$$U_{i,k} \frac{(\mathbf{X}\mathbf{V})_{i,k}}{(\mathbf{U}\mathbf{V}^\top\mathbf{V})_{i,k}} \rightarrow U_{i,k} \frac{(\mathbf{X}\mathbf{V})_{i,k}}{(\mathbf{U}(\mathbf{V}^\top\mathbf{V} + \lambda\mathbf{I}))_{i,k}}$$

1.3: (3.55)

$$V_{j,k} \frac{(\mathbf{X}^\top\mathbf{U})_{j,k}}{(\mathbf{V}\mathbf{U}^\top\mathbf{U})_{j,k}} \rightarrow V_{j,k} \frac{(\mathbf{X}^\top\mathbf{U})_{j,k}}{(\mathbf{V}(\mathbf{U}^\top\mathbf{U} + \lambda\mathbf{I}))_{j,k}}$$

P. 51

1.2: (3.79) & 1.4: (3.80)

$$\begin{aligned} N_{PN} &\rightarrow N_{FP} \\ N_{PP} &\rightarrow N_{FP} \end{aligned}$$

P. 85

1. 31: (3.205)

$$\alpha_i y_i (\mathbf{w}^\top \mathbf{x}_i + b) \geq 1 \rightarrow y_i (\mathbf{w}^\top \mathbf{x}_i + b) \geq 1$$

P. 103

1. 27: (3.261)

$$\min_{\mathbf{w}} \left(\frac{1}{2} \sum_i (y_i - \mathbf{w}^\top \mathbf{x}_i) + \frac{\lambda}{2} \mathbf{w}^\top \mathbf{w} \right) \rightarrow \min_{\mathbf{w}} \left(\frac{1}{2} \sum_i (y_i - \mathbf{w}^\top \mathbf{x}_i)^2 + \frac{\lambda}{2} \mathbf{w}^\top \mathbf{w} \right)$$

Chapter 5.

p. 155

1. 8: (5.6)

$$= \sum_{\mathbf{z}} p(x_1|\mathbf{z}) \prod_{i=2}^{|\mathbf{x}|} p(x_i|x_{i-1}, \mathbf{z}). \rightarrow = \sum_{\mathbf{z}} p(\mathbf{z}) p(x_1|\mathbf{z}) \prod_{i=2}^{|\mathbf{x}|} p(x_i|x_{i-1}, \mathbf{z}).$$

p. 162

1. **6** $p_i \leq 0 \rightarrow p_i \geq 0$

Chapter 8.

p. 241

1. **10** matrix \rightarrow vector

p. 257

1. **13** $u_k \rightarrow \mu_k$

1. **23** must be positive \rightarrow must be non-negative

Chapter 9.

p. 268

1. **4** of **Algorithm 9.2**

$$C_{X_i X_j} \rightarrow C_{ij}$$