

Errata for First Printing of *Introduction to Machine Learning, 4th Edition*

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1. (p. 12): In the third line from the bottom of the page, “instance” is misspelled (communicated by Joe Neville)
2. (p. 138): In the third of line of the second paragraph, N should be t . That part of the sentence should be “... the amount of product i customer t has purchased.”
3. (p. 145): Eq. 6.50 should be corrected as

$$\mathbf{m}_i = \frac{1}{N_i} \sum_t \mathbf{x}^t r_i^t \text{ and } \mathbf{m} = \frac{1}{N} \sum_t \mathbf{x}^t = \frac{1}{N} \sum_{i=1}^K N_i \mathbf{m}_i$$

(communicated by Olcay Kurşun)

4. (p. 196): “Parameter” in the line under Eq. 8.9 should be “hyperparameter.”
5. (p. 202): ‘S’ in the beginning of the second line of the second paragraph should be lowercase.
6. (p. 208): The title of Section 8.9 should be “How to Choose the Smoothing Hyperparameter.” Similarly, in the line that follows and in the last paragraph of this section on the next page, occurrences of “parameter” should be replaced with “hyperparameter.”
7. (p. 245): Eq. 10.3 should be corrected as

$$g_i(\mathbf{x}) = \sum_{j=1}^k w_{ij} \phi_j(\mathbf{x}) + w_{i0}$$

where $\phi_j(\mathbf{x})$ are *basis functions*.

8. (p. 256): In the third line, “application” is misspelled.
9. (p. 298): In Eqs. 11.34 and 11.35, there should be the extra bias v_0 , and in Eq. 11.34, v_j should be v_h . The equations should read as follows:

$$y = \sum_{h=1}^H v_h \phi_h(\mathbf{x}) + v_0 \quad (\text{Eq. 11.34})$$

$$y = \sum_{h=1}^H v_h \phi(\mathbf{x}|\mathbf{w}_h) + v_0 \quad (\text{Eq. 11.35})$$

10. (p. 330): In the third line, it should read “chapter 17 on Bayesian estimation.”

The line below Eq. 12.23 should be corrected as “where α_j are the component proportions ...”

11. (p. 343): In Eq. 12.25, g_{lh} should be underlined as $\underline{g_{lh}}$ to indicate that they are gate values.
12. (p. 344): In the first line, in Eq. 12.26, and in the paragraph below the equation, occurrences of g_{lh} should be underlined as $\underline{g_{lh}}$ to indicate that they are gate values.
13. (p. 348): In the line below Eq. 12.30, the sentence in parantheses should be corrected as “(gate values are underlined ...”
14. (p. 349): Before and Eq. 12.34 should be corrected as:
... and there is a reset gate \underline{r}_h^t and an input gate \underline{i}_h^t :

$$\underline{r}_h^t = \text{sigmoid}(\mathbf{w}_r^T \tilde{\mathbf{x}}^t) \text{ and } \underline{i}_h^t = \text{sigmoid}(\mathbf{w}_i^T \tilde{\mathbf{x}}^t)$$

15. (p. 351): On the last line of the first paragraph, the subscript should be k , that is, $\mathcal{N}_k(\mathbf{0}, \mathbf{I})$.
16. (p. 434): The first p of Eq. 15.11, should be uppercase.
17. (p. 447, 449, 450): In Figs. 15.9, 15.10, and 15.11, ‘ p ’ should be ‘ π ’ and ‘ l ’ should be ‘ λ ’.
18. (p. 594): In the sixth line from the bottom of the page, equation number should be 19.21, and not 16.21.

19. (p. 637): In the fourth line from the top of the page, 0 should be bold as **0** and in the fifth line, the first occurrence of Λ' should be **H**.