Data Science and Machine Learning:
Mathematical and Statistical Methods

Errata

(Last Update 3rd November 2020)

1. Page 38, lines 3,4 in second paragraph: replace $\ell_{\mathcal{T}_{-k}}$ symbol with ℓ_{C_k}.
2. Page 38, first line in displayed equation: replace $\ell_{\mathcal{T}_{-k}}$ symbol with $\ell_{C_k}(g_{\mathcal{T}_{-k}})$.
3. Page 72, Line −2: … in terms of the probability … (remove repeated "the").
4. Page 100, Line −8: $(1-\alpha\boldsymbol{v})$ should be $(1-\alpha)\boldsymbol{v}$.
5. Page 162: Line 12: $\boldsymbol{\Sigma}^{1/2}\boldsymbol{x}$ should be $\boldsymbol{\Sigma}^{-1/2}\boldsymbol{x}$.
6. Page 162: Lines 17 and 20: $\boldsymbol{\Sigma}^{1/2}(\boldsymbol{x}_i-\boldsymbol{\mu})$ should be $\boldsymbol{\Sigma}^{-1/2}(\boldsymbol{x}_i-\boldsymbol{\mu})$.
7. Page 178: fourth line below Table 5.1: replace "qualitative" with "quantitative".
8. Page 179, fourth line in Example 5.5: replace "row-wise" with "column-wise" and the vector $\boldsymbol{y}$ with $\boldsymbol{y}=[9.2988, 8.2111, 9.0688, 8.2552, 9.4978, \ldots, 8.9485]^\top$.
9. Page 181, formula for R^2_{adjusted} at the bottom: replace $n-p-1$ in the formula with $n-p$.
10. Page 211, Exercise 12 (b): $\mathbf{P}_{ii}$ should be $(1-\mathbf{P}_{ii})$; that is 1 minus the i-th leverage.
11. Page 221, Line 8: … one obtains the so-called …
12. Page 247, Algorithm 6.8.1, Line 1: $\mathbb{R}^p$ should be $\mathbb{R}^n$.
13. Page 248, Algorithm 6.8.2, Line 1: Set $\mathbf{B} \leftarrow (n\gamma\mathbf{I}_p)^{-1}$.
14. Page 235, Line 7: $\int_0^1 (g''(x))^2\,\mathrm{d}x$ instead of $\int_0^1 (g'')^2\,\mathrm{d}x$.
15. Page 273, 3rd line under Figure 7.9: The results are summarized in Table 7.6.
16. Page 329, line 12 from below: change y_{i-k} to y_{i-k+1}.
17. Page 331, last displayed equation:
$$\frac{\partial C}{\partial \boldsymbol{b}_l} = \frac{\partial \boldsymbol{z}_l}{\partial \boldsymbol{b}_l}\frac{\partial C}{\partial \boldsymbol{z}_l} = \boldsymbol{\delta}_l, \quad l = 1,\ldots,L.$$
18. Page 335, Algorithm 9.4.2, Line 2: … using $\frac{\partial C}{\partial \boldsymbol{g}} = 1$ …
19. Page 340, second displayed line:
$$[p_0, p_1, p_2, p_3] = [1, 20, 20, 1].$$
20. Page 341, Line 3: Remove the line `S = RELU`.

21. Page 351, Exercise 7(b): In the displayed formula, $\mathbf{B}$ should be replaced with $\mathbf{B}^{-1}$.
22. Page 362, First sentence in paragraph above Theorem A.4: ...the matrix $\mathbf{P}$ projects any vector in $\mathcal{V}$ onto itself.
23. Page 362, Sentence above Theorem A.4: ...where $\mathbf{U}$ is not ...
24. Page 380, third line from below: change b_{i-k} to b_{i-k+1}.
25. Page 394, line 5: ... can be computed with the aid ... (missing "the")
26. Page 404, last two lines: replace H with $\mathbf{H}$.
27. Page 414, Section B.3.4: Replace ℓ with ℓ_τ.
28. Page 456, Sentence under (C.47): Similar to the one-dimensional case ($d = 1$), replacing the factor $1/n$ with $1/(n-1)$ gives an unbiased estimator, called the *sample covariance matrix*.