Errata for "Fundamentals of Pattern Recognition and Machine Learning"
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This document will be updated and expanded as more errors are identified.

1. Page 6, replace "the optimal error can never decrease" by "the optimal error can never increase"

2. Page 13, replace "Braga-Neto [2007]" by "Nascimento et al. [2009]"

3. Page 15, replace "to natural" by "natural"

4. Page 25, replace the second occurrence of "orange and blue" by "blue and orange"

5. Page 27, replace "SFE$\geq$45" and "SFE$\leq$35" by "SFE$>$45" and "SFE$<$35", respectively.

6. Page 28, equation (2.42), replace "$\frac{1}{2}$" and "μ" by "$-\frac{1}{2}$" and "μ_i", respectively.

7. Page 42, a right parenthesis is missing in (2.96).

8. Page 43, in Problem 2.5, take $\sigma = 1$.

9. Page 45, in Problem 2.12, immediately after (2.100), replace "$\varepsilon^{(j)}$" by "$\varepsilon^{(i)}$".

10. Page 45, in Problem 2.12, remove the term "$\frac{m-1}{2}\text{Trace}(\bar{\Sigma}(\Sigma_0^{-1} - \Sigma_1^{-1}))$" from (2.101). Equation (2.103) becomes unnecessary as well.

11. Page 48, two negative signs are misplaced in (2.109)

12. Page 48, replace "$d = 2, 4, 6, 8, \ldots, 40$" by "$d = 4, 8, 12, \ldots, 40$"

13. Page 48, item (c), part ii, replace "$\rho \in [0, 1]$" by "$\rho \in [0, 1)$" (i.e., excluding the value $\rho = 1$).

14. Page 85, replace "$\varepsilon_1/\varepsilon_0 = c_1/c_0$" by "$c_0\varepsilon_0 = c_1\varepsilon_1$"

15. Page 86, at the end of item (c) of Problem 4.4, add "Assume that $\sigma_0^2 = 2$ and $\sigma_1^2 = 8$."

16. Page 88, replace all occurrences of "SFE$\leq$35" and "SFE$\geq$45" by "SFE$<$35" and "SFE$>$45", respectively.

17. Page 95, Figure 5.4, the orange curve, labeled "cubic," corresponds to the kernel $k(\mathbf{x}) = (1 - ||\mathbf{x}||^3)I_{\{||\mathbf{x}||\leq 1\}}$, which is not mentioned in the text. It does not correspond to the "Uniform (cubic) kernel," which is mentioned in the text. The python script c05_kern_univ.py has been updated, please download it again.

18. Page 107, Python Assignment 5.10, replace "$k = 1, 3, 5, 7, 9, 11$" by "$h = 0.1, 0.3, 0.5, 1, 2, 5$"

19. Page 124, Figure 6.7, in order to get the desired labels, the weights of the output neuron should be negated: -1, -1, and 1.5.

20. Page 222, last line, replace "$d \times p$" by "$p \times d$"

21. Page 223, replace I_p by I_d, and replace I_d by I_p.

22. Page 227, Problem 9.4(d), replace $H : R^3 \to R^2$ by $H : R^2 \to R$.

23. Page 227, Problem 9.4(e), replace X by $\mathbf{X}$.

24. Page 229, Problem 9.9, replace `c09_PCA.py` by `c09_MDS.py`.

25. Page 239, the first half of equation (10.17) should read:

$$\ln p_{\boldsymbol{\theta}}(\mathbf{Z}, \mathbf{X}) = \ln \left(\prod_{i=1}^{n} \prod_{k=1}^{K} (\pi_k \mathcal{N}(\mathbf{X}_i \mid \boldsymbol{\mu}_k, \Sigma_k))^{\mathbf{Z}_i(k)} \right)$$

26. Page 260, all instances of "M" should be replaced by "k" to make the notation uniform. Also, replace "$(\phi_1, \ldots, \phi_M)$" by "$(\phi_0, \phi_1, \ldots, \phi_k)$". Replace "$i = 1, \ldots, d$" by "$i = 0, 1, \ldots, d$". Replace "$i = 1, \ldots, k$" by "$i = 0, 1, \ldots, k$".

27. Page 261, replace both occurrences of "$n > k$" by "$n > k + 1$". In equation (11.23), replace both occurrences of "k" by "$k + 1$".

28. Page 263, equation (11.30), replace both occurrences of "k" by "$k + 1$".

29. Page 268, Equation (11.51), replace $\mathbf{x} - \mathbf{x}$ by $\mathbf{x} - \mathbf{x}'$

30. Page 319, line following equation (A.140), replace $p_{\mathbf{X}}(\mathbf{x})$ by $p_{\mathbf{X}}(\mathbf{u})$.