Typos from the 'Og

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Monte Carlo Statistical Methods

1. *(Thanks to Amir Alipour)* On page 4, line 9, in $(\theta_1, \ldots, \theta_n, p_1, \ldots, p_n)$, the index should be k instead of n.

2. *(Thanks to Amir Alipour)* On page 4, Example 1.3, in the last line, $n > q$, should be $n >= q$.

3. *(Thanks to Amir Alipour)* On page 5, $\sigma^{-(n+q)}$ should be $\sigma^{-(n+q+1)}$.

4. *(Thanks to Amir Alipour)* On page 8, in formula (1.10), the gradient symbol ∇ is used with no definition, which is only found on page 19.

5. *(Thanks to Amir Alipour)* On page 8, Example 1.6, the cumulant function should involve $\log(-1/(2\theta_2))$

6. *(Thanks to Amir Alipour)* On page 10, in the definition of the modified Bessel function, the series in z should be in t.

7. *(Thanks to Amir Alipour)* On page 10, the last formula of Example 1.9, the likelihood function is inversely proportional to a power of the displayed product and the power of σ should be $2n/(p+1)$.

8. *(Thanks to Ping Yu)* On page 31, the reference Robert (1994a) should be Robert (2001), refering to *The Bayesian Choice*.

9. *(Thanks to Gholamhossein Gholami)* On page 37, Example 2.2, $X_n \in [0,1]$. Then $2X_n - 1 \in [-1,1]$ should have the same behaviour as a sequence of random numbers distributed according to the arcsine distribution not X_n itself. Furthermore, in Figure 2.1, the function $y_n = F(x_n)$ should be defined as the arcsine transform.

10. *(Thanks to Douglas Rivers)* On page 48, the final displayed equation should have integration over $[a,b]$ rather than $[0,1]$:

$$P(\text{Accept}) = P(U < f(Y)) = \frac{1}{m} \int_a^b \int_0^{f(y)} du dy = \frac{1}{m}\,.$$

11. *(Thanks to Gholamhossein Gholami)* On page 52, Example 2.19, line 26, the power of $1-b$ should be $a-\alpha$, and we are looking at the minimum of M in b, not the maximum.

12. *(Thanks to Gholamhossein Gholami)* On page 53, Example 2.20, line 10, the ratio should be $f/g_\alpha(z) = e^{\alpha(z-\underline{\mu})} e^{-z^2/2}$.

13. On page 53, Example 2.20, line 15, Eqn. (2.11) should be

$$\alpha^* = \frac{\underline{\mu} + \sqrt{\underline{\mu}^2 + 4}}{2}.$$

14. *(Thanks to Edward Kao, University of Houston)* In Problem 3.21, page 114, $\mathcal{G}a(y, 1)$ should be $\mathcal{G}a(1, y)$.

15. *(Thanks to Edward Kao, University of Houston)* On page 149, Problem 4.5, an h is missing in the expectation of the last line of question (a). And in question (c), $Bin(y)$ should be $Bin(n, y)$

16. *(Thanks to Doug Rivers, Stanford University, and to Liaosa Xu, Virginia Tech.)* On page 175, in Example 5.14, the last displayed equation should be

$$L(\theta|\mathbf{y}) = \int L^p(\theta|\mathbf{y}) f(\mathbf{z}|\mathbf{y}, \theta) \mathrm{d}\mathbf{z}$$

where $L^p(\theta|\mathbf{y})$ is the part of the likelihood only involving y, instead of

$$L(\theta|y) = \mathbb{E}[L^c(\theta|y, Z)].$$

The expectation, as written is incorrect: the z_i's are truncated in a. Their density is therefore a renormalised version of $f(z - \theta)$. The whole example should be rewritten because it starts as if m observations were uncensored out of n, only to move to a fixed censoring bound a. While both likelihoods are proportional when $a = y_m$, this confusion should not be present.

17. *(Thanks to Edward Kao, University of Houston)* Example 5.18 on page 179 studies a missing data phone plan model and its EM resolution. First, the customers in area ii should be double-indexed, i.e.

$$Z_{ij} \sim \mathcal{M}(1, (p_1, \ldots, p_5))$$

which implies in turn that

$$T_i = \sum_{j=1}^{n_j} Z_{ij}.$$

Then the summary $\mathbf{T}$ should be defined as

$$\mathbf{T} = (T_1, T_2, \ldots, T_n)$$

and W_5 as

$$W_5 = \sum_{i=m+1}^{n} T_{i5},$$

given that the first m customers have the fifth plan missing.

18. *(Thanks to Edward Kao, University of Houston)* On page 211, the kernel is called P instead of K twice, including in Definition 6.8.

19. *(Thanks to Tor Andre Myrvoll)* On page 211, Lemma 6.7, *through some y on the nth step* should be *through some y on the nth step* to be coherent with the above decomposition (even though, technically, it is not wrong).

20. *(Thanks to Edward Kao, University of Houston)* On page 212, the inequality in $P(\tau_2 > \tau_3)$ should be inverted in $P(\tau_2 < \tau_3)$.

21. *(Thanks to Edward Kao, University of Houston)* On page 213, in Example 6.14, the state size K should be M.

22. *(Thanks to Edward Kao, University of Houston)* On page 215, Example 6.20, second displayed equation, $\theta x_n \overline{w} \sigma^{-2}$ should be $2\theta x_n \overline{w}$

23. *(Thanks to Edward Kao, University of Houston)* On page 225, in the proof (line 7), the summation should start at $n = 1$.

24. *(Thanks to Edward Kao, University of Houston)* On page 250, Problem 6.22 (d) should be phrased as "show that the invariant distribution is also the limiting distribution of the chain" instead of the obvious "show that the invariant distribution is also the stationary distribution of the chain". And the solution to (c) given in the solution manual has a mistake (see Kao's own solution in his *Introduction to Stochastic Processes*, Example 4.3.1).

25. *(Thanks to Edward Kao, University of Houston)* On page 250, Problem 6.24 (a) should ask to show aperiodicity, not periodicity. And in part (b) the transition in 0 should be defined in the same way as in Problem 6.22.

26. *(Thanks to Caroline Lawless)* On page 302, Exercise 7.1, the second parameter of the Gamma distribution is the rate rather than the scale parameter.

27. *(Thanks to Douglas Rivers)* On page 323, Example 8.2, and on page 325, in the caption of Fig. 8.2., the truncated normal distribution is $\mathcal{N}(-3, 1)$, not $\mathcal{N}(3, 1)$.

28. *(Thanks to Javier Buroni)* On page 570, Problem 14.1, the inequality on the variances should be reverted.

29. *(Thanks to Gholamhossein Gholami)* On page 583, in the Negative Binomial distribution, $n + x + 1$ should be $n + x - 1$