Communication Networking:
An Analytical Approach
Errata

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1. Chapter 1 : None reported

2. Chapter 2 : None reported

3. Chapter 3 : None reported

4. Chapter 4 :

   - Page 138, Section 4.2.4, second paragraph: We say that A has the *envelope E* if, for all t and τ, with $\tau \leq t$, $A(t) - A(\tau) \leq E(t - \tau)$. Notice that τ should not be constrained to be positive, and $E(t)$ is by definition causal. The consequence of this is that the paragraph in the middle of the page "An envelope is *causal* if ..... $A = A * E$," is unnecessary. Also, the "causal" condition in Exercise 4.3 is unnecessary. Further, on page 139, the definition of a regulator envelope should read: Thus, for all t and τ, with $\tau \leq t$, $D(t) - D(\tau) \leq E(t - \tau)$. These points were brought to our attention by Steven Low.

   - Page 161, Section 4.4, first line: "...we now apply much of what we have discuss ...." ... the word "have" should be omitted, or "discuss" should be "discussed."

5. Chapter 5 :

   - In Exercise 5.4 the "bounding idea" referred to is from Remarks 4.4, not from Exercise 4.4.

6. Chapter 6

   - Page 270, Exercise 6.1: S in line 2 should be $\mathcal{S}$; C has not been specified. Assume $C = 30$.

   - Exercises 6.4 and 6.5 are harder and may be treated like advanced problems rather than as exercises.

   - In Problem 6.4b, assume $b_1 = b_2 = 1$.

7. Chapter 7 : None reported

8. Chapter 8

   - Pages 478 last line –479 first line: "... signalling bandwidth cannot be to them allocated statically the nodes." should be "... signalling bandwidth cannot be allocated statically to the nodes."

- Page 485: line 3: "... node an continue ..." should be "... node can continue ...".
- Page 492: In the description of the 802.11b physical layer, the phrase "each with a bandwidth of 5 MHz" should be replaced with "each with a spread signal bandwidth of 25 MHz."
- Page 492: In the description of the 802.11a physical layer, the number of OFDM subcarriers is 52, and not 30 as stated.
- Page 499, line 3: $K = 7$, not 12; hence the range for k in the next line should read $6 \leq k \leq 7$.
- In Problem 8.10c it will be easier to find the probability that $k+1$ were backlogged in the slot in which there was a success. Since one packet has departed, this gives the probability that there are still k that are backlogged.

9. Chapter 9 : None reported

10. Chapter 10 : None reported

- In Exercise 10.1a, 64-byte cells rather than 64-bit cells may also be considered.
- On page page 552, Definition 1, the first sentence should be "In a slotted service system of N queues, let $Q_i(t)$ be the number of cells in queue i at the end of slot t."
- In Exercise 10.7, "the stable matching" should be changed to "a stable matching". A stable matching is not unique.
- The last three equations and on page 584 leading to Equation 17 should be as follows.

$$
\begin{aligned}
\theta_k(n_k) &= \sum_{n_{k-1}=n_k+1}^{N-(k-1)} \mathsf{Pr}\left(n_{k-1} \text{ unmatched in } k-1 \text{ iterations}\right) \times \\
&\qquad\qquad \times \mathsf{Pr}\left((n_{k-1} - n_k) \text{ are matched in iteration } k\right) \\
&= \sum_{n_{k-1}=n_k+1}^{N-(k-1)} \theta_{k-1}(n_{k-1}) \times \phi(n_{k-1} - n_k - 1, n_{k-1}) \qquad (10.17)
\end{aligned}
$$

The n_k and n_{k-1} have been interchanged in some of the places.

11. Chapter 11

- In Problem 10.1, consider an $N \times N$ switch.

12. Chapter 12 : None reported

- In Problem 12.3, on line 3 "then is l is" should be "then l is" and in line 4, "$[L, h]$" should be "$[L, H]$".

- On line 13 of page 650, "$2^j \times V(i+1)$" should be "$2^{j-1} \times V(i+1)$" and the second expression in Equation 12.1 on the same page should be

$$T(j, m) = \min_{m \in [m-1, r-1]} \{T(m, r) + V(m+1) \times 2^{j-m-1}\}$$

13. Chapter 13 : None reported

14. Chapter 14 :

- On page 696, Section 14.3.1, para 3, second sentence "...is extracted from the set $\mathcal{A}$" should be "...is extracted from the set $\mathcal{N} \setminus \mathcal{A}$".

15. Chapter 15 : None reported

16. Chapter 16 : None reported

17. Appendix C

- On page 807, Figure C.1: The x_1 axis is shown as $g_3(x) = 0$ and the x_2 axis as $g_4(x) = 0$, but it should be the other way.