Errata
Performance Evaluation of Computer and Communication Systems
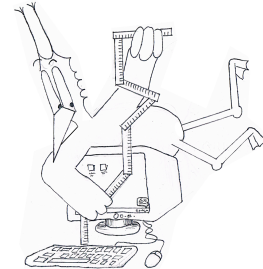
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If you see residual bugs in the online version please send me a mail !

Chapter 1

- Page 5, Example 1.5 $\lceil x \rceil$ is the ~~floor~~ ceiling of x [Roger Vion].

Chapter 2

- Eq. 2.25 p. 39: $[\hat{\sigma}_n\sqrt{\frac{\zeta}{n-1}\frac{n-1}{\xi}}, \hat{\sigma}_n\sqrt{\frac{\xi}{n-1}\frac{n-1}{\zeta}}]$ [Patrick Loiseau].
- Page 27, after Eq (2.7): from an exponential distribution, gap $\approx$ ~~0.74~~ 0.37 [Jeong-woo Cho].
  $$\text{gap}_{\text{th}} = \sqrt{\frac{2}{\pi}\frac{1}{2\pi}}\frac{\sigma}{\mu}$$
- Page 30, caption of Figure 2.5: The maximum distance (plain line) is equal to ~~$\sqrt{2}$~~ $\frac{1}{\sqrt{2}}$ times the maximum vertical deviation (dashed line) [Jeong-woo Cho].

- Page 31 "A measure of fairness is the largest euclidian distance (the gap) from the Lorenz curve to the diagonal, rescaled by its maximum value $(\sqrt{2})$ $\left(\frac{1}{\sqrt{2}}\right)$
- Page 32, last comment $\text{Gini}_{th} = 2 \int_0^{\infty 1} (q - L(q))\, dq = 1 - 2\int_0^{\infty 1} L(q) dq$ [Jeong-woo Cho].
- Page 37: Note that, for small values of n, no confidence interval is possible at the levels 0.95% 0.95 or 0.99% 0.99 [Jeong-woo Cho].

Chapter 3

- Page 74, Example 3.5 $f'(\mu) = i - (I - i) = 2i - I$ [Roger Vion].
- Page 77, Theorem 3.3. (4): and $g = \sum_{j,k} u_j G_{j,k} y_k^2 u_k = \sum_k \left(\sum_j u_j K_{j,k}\right)^2$
- Page 74: If I is odd, f decreases on $(-\infty, y_{(2I+1)/2}]$ and increases on $[y_{(2I+1)/2}, +\infty)$, thus is minimum for $\mu = y_{(2I+1)/2}$, which is the sample median. [Jeong-woo Cho].
- Page 85 Caption of Table 3.2 $\Gamma()$ is the gamma function, defined as $\Gamma(x) = \int_0^\infty e^{-t} t^{x-1} dt$ [Roger Vion]
- Page 91 The standard Weibull distribution with exponent c has support on $[0, \infty)$ and is defined by its CDF equal to $1 - e^{(x^c)} e^{-(x^c)}$ [Jlien Harbulot].
- Page 94, changed the identifier of the mixture probability p to q in order to avoid confusion with the Pareto index p in the following example.
- Page 97: Indeed, if X_i are idd iid with finite variance [Roger Vion].
- Pages 99-100 A mobile moves in some area from one point to the next from one point to the next [Roger Vion].

Chapter 4

- Page 116, before equation (4.3):
  The likelihood ratio test has a rejection region of the form $l_{\vec{x}}(H_1) - l_{\vec{x}}(H_0) > \not{k} K$ for some constant $\not{k}$ K.
  After eq (4.3), add: for some other constant k.
- Page 117, (X_k, Y_k) is independent of $(X_{\not{k}k'}, Y_{k'})$ [Jeong-woo Cho]
- Page 117, Eq. (4.7) replace $\begin{pmatrix} n! \\ n_1!...n_k! \end{pmatrix}$ by $\frac{n!}{n_1!...n_k!}$
- Pages 117 $\not{N_i}$ $\vec{N}$ comes from ... (2 times)
- Page 119: The pivot is A pivot is a function of the data whose probability distribution under H_0 is the same for all $\theta \in \Theta_0$. For this test the pivot is [Jeong-woo Cho]
- Page 116

$$\hat{\sigma}_1^2 = \frac{1}{n} \sum_i (x_i^{\not{\ }} - \hat{\mu}_n^+)^2$$

- Page 126, Example 4.13

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Parameter Set 1 pchi2 = 0.0002854
Parameter Set X 2 pchi2 = 0.02731
Parameter Set X 3 pchi2 = 0.6669
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Chapter 5

- Page 154, Example 5.5 we only need to ~~fil~~ fit one parameter (namely σ) [Roger Vion].
- Page 155, Equation (5.20)

$$\hat{\gamma}_t = \frac{1}{n}\sum_{s=1}^{n-t}(X_{\not{s}s+t} - \bar{X})(X_{\not{s}s} - \bar{X})$$

- Page 168, The idea is to keep a running estimate ~~estimate~~ $\hat{m}_t$... [Roman Rudnik].

Chapter 6

- Page 178, Figure 6.1, Panel (a) text on top: $\mu_F = $ ~~0.096~~0.0096.
- Page 196, Corollary 6.1 to the unique index $n \geq 0$ such that.
- Page 190, footnote ~~0.95~~ 0.05 [Jeong-woo Cho].
- Page 192, first line: The period of a random number generator should be much ~~smaller~~ larger [Jeong-woo Cho].
- Page 194, just before Example 6.11: $x \in$ ~~Id~~ I [Jeong-woo Cho].

Chapter 7

- Page 217, We break the integral in Eq.(7.2) into pieces corresponding to the intervals ~~$[T_n, T_{n+1})$~~ $[T_{n-1}, T_n)$.
- Page 226, eqs (7.21) and (7.22), opening parentheses are missing after the $\mathbb{E}$ signs.
- Page 231, Example 7.8: $f_T^0(\not{t}s) = \lambda e^{-\lambda s}$
- Page 234, ~~ΔX_t~~ Δ_t [Jeong-woo Cho].
- Page 234, eq. (7.34) ~~$\mathbf{1}_{\{t \leq T_n\}}$~~ $\mathbf{1}_{\{t \geq T_n\}}$ [Jeong-woo Cho].
- Page 234, eq. (7.35) ~~$\mathbf{1}_{\{\mathbf{1}_{\{t \leq T_n^j\}}\}}$~~ $\mathbf{1}_{\{\mathbf{1}_{\{t \geq T_n^j\}}\}}$ [Jeong-woo Cho].
- Page 235, ~~ΔX~~ Δ_t [Jeong-woo Cho].
- Page 241, It is often presented in the context of renewal processes (where interarrival times are i.i.d.)[Jeong-woo Cho].
- page 242, footnote, is independent of ~~m~~ n [Jeong-woo Cho].

Chapter 8

- Page 265, Example 8.1 $D(t) = r(t - d(0)) - \Delta$ [Roger Vion].
- Page 266, footnote between ~~$A(t)$ and $A'(t)$~~ between $(D1)$ and $(D2)$[Jeong-woo Cho].
- Page 269, Theorem 8.3 ~~a B~~ an s-server queue [Jeong-woo Cho].
- Page 271, Figure 8.5: a loopback arrow is missing from CPU to CPU.
- Page 271, Legend of Figure 8.5, delete "n attendants serve customers."
- Page 272, Eq. (8.2) ~~Z~~ $\bar{Z}$[Jeong-woo Cho].
- Page 275, Eq. (8.5) $\mathcal{L}_W(s) = \frac{s(1-\rho)}{s - \lambda + \lambda \mathcal{L}_S(s)}$ [Jeong-woo Cho].
- Page 275, Eq. (8.7) $\kappa = \frac{1}{2}\left(1 + \frac{\sigma_S^2}{\bar{S}^2}\right) = \frac{1}{2}\left(1 + \text{CoV}_{S}^2\right)$
- Page 276 One approach is based on ~~a~~ the following [Jeong-woo Cho].

- Page 291, Example 8.6 Classes 1, 2 or 3 represent ~~internal~~ external jobs and class 4 internal jobs. [Jeong-woo Cho].
- Page 292, Example 8.6 Jobs of classes 1, 2 or 3 are ~~internal~~ external jobs. [Jeong-woo Cho].
- Page 303, Theorem 8.11 $\vec{K}$ $K_{\mathcal{C}}$ is the number of customers of chain $\mathcal{C}$
- Page 315 $\frac{1}{\theta_{\mathcal{C}}} \sum_{s \in \mathcal{S}, c \in \mathcal{C}} \theta_c^s q_{c,c'}^{s,s'}$ if $\cancel{c} c' \in \mathcal{C}$ [Jeong-woo Cho].
- Page 336 The mean value analysis equations are (Section 8.6.~~5~~ 7) [Jeong-woo Cho].

Annex C

- Page 369, Example C.3: as seen in Example ~~C.12~~ C.1.