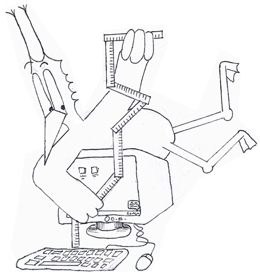
Errata
Performance Evaluation of Computer and Communication Systems



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Available at https://leboudec.github.io/perfeval/

This is the list of known bugs, with credits, in the publisher's version (ISBN: 978-2-940222-40-7 2010). These bugs are fixed in the online version. Page references are for the publisher's version. A number of bug fixes were done in earlier stages by Irina Baltcheva, Manuel Flury, Olivier Gallay, Assane Gueye, Paul Hurley, Ruben Merz, Božidar Radunović, Gianluca Rizzo, Slaviša Sarafijanović, Milan Vojnović, Utkarsh Upadhyay and Jonas Wagner who are here gratefully acknowledged.

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: $[\hat{\sigma}_n \sqrt{\cancel{\frac{\zeta}{n-1}} \frac{n-1}{\xi}}, \hat{\sigma}_n \sqrt{\cancel{\frac{\xi}{n-1}} \frac{n-1}{\zeta}}]$ [Patrick Loiseau].
- Page 27, after Eq (2.7): from an exponential distribution, gap $\approx \cancel{0.74}$ 0.37 [Jeong-woo Cho].
  $\text{gap}_{\text{th}} = \sqrt{\cancel{\frac{2}{\pi}} \frac{1}{2\pi}} \frac{\sigma}{\mu}$
- Page 30, caption of Figure 2.5: The maximum distance (plain line) is equal to $\cancel{\sqrt{2}}$ $\frac{1}{\sqrt{2}}$ 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 $\cancel{(\sqrt{2})}$ $\left(\frac{1}{\sqrt{2}}\right)$
- Page 32, last comment $\text{Gini}_{\text{th}} = 2\int_0^{\cancel{\infty}1} (q - L(q))\,dq = 1 - 2\int_0^{\cancel{\infty}1} L(q)dq$ [Jeong-woo Cho].
- Page 37: Note that, for small values of n, no confidence interval is possible at the levels $\cancel{0.95\%}0.95$ or $\cancel{0.99\%}0.99$ [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 $g = \sum_{j,k} u_j G_{j,k} \cancel{y_k^2} u_k = \sum_k \left(\sum_j u_j K_{j,k}\right)^2$
- Page 74: If I is odd, f decreases on $(-\infty, y_{(\cancel{2I}I+1)/2}]$ and increases on $[y_{(\cancel{2I}I+1)/2}, +\infty)$, thus is minimum for $\mu = y_{(\cancel{2I}I+1)/2}$, 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 $1 - \cancel{e^{(x^c)}} e^{-(x^c)}$ [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 $l_{\vec{x}}(H_1) - l_{\vec{x}}(H_0) > \cancel{k} K$ for some constant $\cancel{k}$ K.
  After eq (4.3), add: for some other constant k.
- Page 117, (X_k, Y_k) is independent of $(X_{\cancel{k}k'}, Y_{k'})$ [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 $\cancel{N_i}$ $\vec{N}$ 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

$$\hat{\sigma}_1^2 = \frac{1}{n}\sum_i (x_i^{\cancel{2}} - \hat{\mu}_n^+)^2$$

- Page 126, Example 4.13

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Parameter Set 1 pchi2 = 0.0002854
Parameter Set 1 2 pchi2 = 0.02731
Parameter Set 1 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)

$$\hat{\gamma}_t = \frac{1}{n}\sum_{s=1}^{n-t}(X_{\cancel{n}s+t} - \bar{X})(X_{\cancel{n}s} - \bar{X})$$

- 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: $\mu_F = \cancel{0.0960}0.0096$.
- 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: $x \in \cancel{Id}\ I$ [Jeong-woo Cho].

Chapter 7

- Page 217, We break the integral in Eq.(7.2) into pieces corresponding to the intervals $\cancel{[T_n, T_{n+1})}$ $[T_{n-1}, T_n)$.
- Page 226, eqs (7.21) and (7.22), opening parentheses are missing after the $\mathbb{E}$ signs.
- Page 231, Example 7.8: $f_T^0(\cancel{t}s) = \lambda e^{-\lambda s}$
- Page 234, $\cancel{\Delta X_t}$ Δ_t [Jeong-woo Cho].
- Page 234, eq. (7.34) $\cancel{\mathbf{1}_{\{t \leq T_n\}}}$ $\mathbf{1}_{\{t \geq T_n\}}$ [Jeong-woo Cho].
- Page 234, eq. (7.35) $\cancel{\mathbf{1}_{\{\mathbf{1}_{\{t \leq T_n^j\}}\}}}$ $\mathbf{1}_{\{\mathbf{1}_{\{t \geq T_n^j\}}\}}$ [Jeong-woo Cho].
- Page 235, $\cancel{\Delta X}$ 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 $\cancel{m}$ 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) $\cancel{Z}$ $\bar{Z}$[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) $\kappa = \frac{1}{2}\left(1 + \frac{\sigma_S^2}{\bar{S}^2}\right) = \frac{1}{2}\left(1 + \mathrm{CoV}_{\cancel{S}}^2\right)$
- 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 $\cancel{\vec{K}} K_{\mathcal{C}}$ is the number of customers of chain $\mathcal{C}$
- Page 315 $\frac{1}{\bar{\theta}_{\mathcal{C}}} \sum_{s\in\mathcal{S},c\in\mathcal{C}} \theta_c^s q_{c,c'}^{s,s'}$ 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.