Errata and Corrigenda for *Statistics for Chemical and Material Engineers: A Modern Approach* (Second Edition)

Last Update: March 29th, 2022

Page, line	Current Form	Correction
p. 125, Equation (3.98)	$\hat{\vec{y}} = \begin{bmatrix} f\left(\vec{\beta}^{(0)}; \vec{x}_1\right) \\ f\left(\vec{\beta}^{(0)}; \vec{x}_2\right) \\ \vdots \\ f\left(\vec{\beta}^{(0)}; \vec{x}_m\right) \end{bmatrix}$	$\hat{\vec{y}} = \begin{bmatrix} g\left(\vec{\beta}^{(0)}; \vec{x}_1\right) \\ g\left(\vec{\beta}^{(0)}; \vec{x}_2\right) \\ \vdots \\ g\left(\vec{\beta}^{(0)}; \vec{x}_m\right) \end{bmatrix}$
p. 126, Equation (3.102)	$\boxed{\varepsilon_i = y_i - \hat{y}_i = y_i - f\left(\vec{x}_i, \hat{\vec{\beta}}\right)}$	$\boxed{\varepsilon_i = y_i - \hat{y}_i = y_i - g\left(\vec{x}_i, \hat{\vec{\beta}}\right)}$
p. 142, line 5/6	…B = 1,344.8 °C, and C = 219.482 °C…	B = −1,344.8°C, and C = 219.482°C
p. 154, Equation (4.6)	$y = \beta_0 + \sum_{i=1}^{n} \beta_i x_i + \sum_{j=1}^{n} \sum_{p=j+1}^{n} \beta_{jp} x_j x_p + \ldots + \beta_{\prod_{i=1}^{k} i} \prod_{i=1}^{k} x_i$	$y = \beta_0 + \sum_{i=1}^{k} \beta_i x_i + \sum_{j=1}^{k} \sum_{p=j+1}^{k} \beta_{jp} x_j x_p + \ldots + \beta_{\prod_{i=1}^{k} i} \prod_{i=1}^{k} x_i$ *Replace all* n*'s by* k.
p. 158, line 3	$F(0.95, 1, l^k(n_R - 1))$.	$F(1-\alpha, 1, l^k(n_R - 1))$. *More general solution.*
p. 175, line 10	$F(0.95, 1, l^k(n_R - 1))$.	$F(1-\alpha, 1, l^k(n_R - 1))$. *More general solution.*

Page, line	Current Form	Correction
p. 229, Equation 5.27	$A_Q\left(z^{-s}\right)=1+\sum_{i=1}^{Q}\alpha_{si}z^{-si}$ $B_P\left(z^{-s}\right)=1+\sum_{i=1}^{P}\beta_{si}z^{-si}$	$A_P\left(z^{-s}\right)=1+\sum_{i=1}^{P}\alpha_{si}z^{-si}$ $B_Q\left(z^{-s}\right)=1+\sum_{i=1}^{Q}\beta_{si}z^{-si}$
p. 240, line 2	…process stops after *q* lags.	…process stops after *p* lags.
p. 242, Figure 5.7		The right and left images need to be exchanged. The visual difference in this case is minimal, but there is nevertheless a difference.
p. 242, line 11	…(right) MA(2) processes	…(right) MA(**1**) processes
p. 266, line 9	The noise variance, σ_e^2, is 1.0870.	The noise variance, σ_e^2, is 1.08**07**.
p. 307, line 7/8	… at least one time delay…	… **a time delay of at least one sample** …

Page, line	Current Form	Correction
p. 311, Equation (6.31) p. 311, line after Equation (6.31)	$t\|t-1$	$\underline{\boldsymbol{t+1\|t}}$ (Note both formulations are equivalent, but for consistency, we should use the corrected form.)
p. 313, Equation (6.41)	$\operatorname{var}\left(\varepsilon_t\left(\vec{\theta},\hat{\vec{\theta}}\right)\right)=\operatorname{var}\left(\Phi_e\left(z^{-1},\vec{\theta},\hat{\vec{\theta}}\right)u_t\right)+\operatorname{var}\left(\left(\Phi_e\left(z^{-1},\vec{\theta},\hat{\vec{\theta}}\right)-\mathcal{I}\right)e_t\right)+\operatorname{var}\left(e_t\right)$	$\operatorname{var}\left(\varepsilon_t\left(\vec{\theta},\hat{\vec{\theta}}\right)\right)=\operatorname{var}\left(\boldsymbol{\Phi_u}\left(z^{-1},\vec{\theta},\hat{\vec{\theta}}\right)u_t\right)+\operatorname{var}\left(\left(\Phi_e\left(z^{-1},\vec{\theta},\hat{\vec{\theta}}\right)-\mathcal{I}\right)e_t\right)+\operatorname{var}\left(e_t\right)$ The first $\boldsymbol{\Phi_e}$ should be $\boldsymbol{\Phi_u}$ instead.
p. 313, Equations (6.43), (6.44)	$t\|t-1$	$\underline{\boldsymbol{t+1\|t}}$ (Note both formulations are equivalent, but for consistency, we should use the corrected form.)

Page, line	Current Form	Correction
p. 315, Equations (6.48), p. 316, Equation (6.49)	$t\|t-1$	$\underline{\boldsymbol{t+1\|t}}$ (Note both formulations are equivalent, but for consistency, we should use the corrected form.)
p. 317, line 1	…or for a symmetric matrix this…	…or, for a symmetric matrix, this…
p. 319, lines 13, p. 320, line 2	…last nonzero value…	…last zero value…
p. 319, line 16/17	…first nonzero value…	…last zero value…
p. 324, Equations (6.64), (6.66)	$t\|t-1$	$\underline{\boldsymbol{t+1\|t}}$ (Note both formulations are equivalent, but for consistency, we should use the corrected form.)

Page, line	Current Form	Correction
p. 325, Equations (6.69), (6.70), (6.71)	$t\|t-1$	$\underline{\boldsymbol{t+1\|t}}$ (Note both formulations are equivalent, but for consistency, we should use the corrected form.)
p. 325, line 8	…are uncorrelated. Thus, the variance can be written as…	…are **uncorrelated, the** variance can be written as…
p. 339, Question 10)	A first-order Box-Jenkins model…	In open-loop system identification, a first-order Box-Jenkins model…
p. 368, Table 7.10, column 1, row 7	**`mNL=nlarx(z,nn,basis);`**	**`mNL=nlarx(z,nn,basis)`**
p. 381, line 19	…the correspindg measured values	…the corresponding measured values
p. 374, line 2	`%Custom-built function that creates the corelation plot given`	`%Custom-built function that creates the` **`correlation`** `plot given`
p. 374, line 9	`axis1: the lable for the axis (can be left blank)`	`axis1: the` **`label`** `for the axis (can be left blank)`

Page, line	Current Form	Correction
p. 374, line 30	`%Custom-built function that creates the crosscorelation plot`	`%Custom-built function that creates the` **`cross-correlation`** `plot`
p. 375, line 27; p. 376, line 8	`crosscorrelation`	`cross-correlation`
	1-sample	one-sample
p. 417, Chapter 2, (1)	(1) T;	(1) F;