13

Errata (June, 2026)

With regret, I have to mention the following errors:

- p. 58: Last formula "$q(x) = \frac{c_A(x)}{x-r} = \prod_{j=2}^{N} (\lambda_k(A) - x)$" should be "$q(x) = \frac{c_A(x)}{x-r} = \prod_{k=2}^{N} (\lambda_k(A) - x)$"
- p. 72: formula "$\frac{1}{z}\sum_{k=1}^{\infty} \mathrm{trace}\left(A^k\right) z^k = \frac{d}{dz} \log\det(I - zA)$" should be "$\frac{1}{z}\sum_{k=1}^{\infty} \mathrm{trace}\left(A^k\right) z^k = -\frac{d}{dz} \log\det(I - zA)$" and (3.53) should be $W_G(z) = \sum_{k=0}^{\infty} W_k z^k = N - z\frac{d}{dz}\log\det(I - zA)$.
- p. 182: Equation $\Omega p = 2\left(\frac{\zeta^T \widetilde{Q}\zeta}{4} + R_G\right) u$ should be $\Omega p = 2\left(\frac{\zeta^T \widetilde{Q}\zeta}{4} + \frac{R_G}{N^2}\right) u$ and consequently, $\frac{\zeta^T \widetilde{Q}\zeta}{4} + R_G = \sigma^2$ should be $\frac{\zeta^T \widetilde{Q}\zeta}{4} + \frac{R_G}{N^2} = \sigma^2$.
- p. 292: in the last formula, the summation index should be another letter than k in order not to confuse with A^k:

$$ {}_kD = \frac{\sum_{j=1}^{N} \left(v_j^T A^k u\right)^2 \rho_j}{u^T A^{2k} u} = \frac{\left(v_1^T A^k u\right)^2}{u^T A^{2k} u}\rho_1 - \sum_{j=2}^{N} \frac{\left(v_j^T A^k u\right)^2}{u^T A^{2k} u} |\rho_j| \leq \frac{\left(v_1^T A^k u\right)^2}{\sum_{j=1}^{N} \left(v_j^T A^k u\right)^2}\rho_1 $$

- p. 307: the display

$$ y = \alpha_1 \begin{bmatrix} 1 \\ 0 \\ \vdots \\ 0 \end{bmatrix} + \alpha_2 \begin{bmatrix} 0 \\ 1 \\ \vdots \\ 0 \end{bmatrix} + \alpha_n \begin{bmatrix} 0 \\ 0 \\ \vdots \\ 1 \end{bmatrix} $$

should be

$$ y = \alpha_1 \begin{bmatrix} 1 \\ 0 \\ \vdots \\ 0 \end{bmatrix} + \alpha_2 \begin{bmatrix} 0 \\ 1 \\ \vdots \\ 0 \end{bmatrix} + \cdots + \alpha_n \begin{bmatrix} 0 \\ 0 \\ \vdots \\ 1 \end{bmatrix} $$

- p. 333: footnote, "...one way as sum of two squares." should be "...one way as a sum of two squares."
- p. 361: "...the first orthogonality relation (A.124) becomes..." should be "...the second orthogonality relation (A.126) becomes...".
- p. 406: in Lemma 14: "... the zeros

$$z_1 = \frac{A}{2}\left(1 + \sqrt{1 - \frac{4}{AB}}\right) \text{ and } z_1 = \frac{A}{2}\left(1 - \sqrt{1 - \frac{4}{AB}}\right)$$

  should be

$$z_1 = \frac{A}{2}\left(1 + \sqrt{1 - \frac{4}{AB}}\right) \text{ and } z_2 = \frac{A}{2}\left(1 - \sqrt{1 - \frac{4}{AB}}\right)$$

- p. 454: line 9 from bottom: "... we arrive at Shur's inequality,..." should be "... we arrive at Schur's inequality,..."
- p. 495: "...after replacing x_1 and x_2." should be "...after replacing x_1 and x_0."