

Corrections
Completely Positive Matrices
September 6, 2016

1. Inner front page: Affiliation of Naomi: Should be “Emek Yezreel College” (and not “Yezteel”).
2. Page 6, Statement of Geršgorin’s Theorem (line -4): Should be

$$R_i = \sum_{\substack{j=1 \\ j \neq i}}^n |a_{ij}|.$$

3. Page 8, end of first line of Theorem 1.9: Should be “ $B = A[1, \dots, n-1]$ ”
4. Page 15, proof of Proposition 1.8: Should be $A - \sum_{i < j} A_{ij}$
5. Page 18, line 13: Should be Theorem 1.11 (instead of ”Theoem 1.9”).
6. Page 36, line -4: Should be “induced odd cycle” (instead of “odd cycle”).
7. Page 54, first line: Should be “By Proposition 1.25, ” instead of “By Proposition 1.29, that is ”
8. Page 71, in the proof of Theorem 2.2, in the part about \mathcal{CP}_n being closed: All the nonnegative vectors $\mathbf{v}_j^{(i)}$ may be assumed to be of equal length (follows from the existence of a uniform upper bound for the cp-ranks of $n \times n$ matrices).
9. Page 95, the sentence starting on line 8 in the proof of Theorem 2.13: Should be “ $M(A)$ is similar to A , so it is positive semidefinite (this also follows from Sylvester’s Law of Inertia (Theorem 1.7)).”
10. Page 109, line 5: Should be

$$\hat{A} = \begin{pmatrix} \mathbf{u}^T \\ \mathbf{v}^T \\ W_0 \end{pmatrix} \begin{pmatrix} \mathbf{u}^T \\ \mathbf{v}^T \\ W_0 \end{pmatrix}^T$$

11. Page 122, Example 2.17: The last two diagonal entries of A should be 3.
12. Page 129, in the Notes paragraph: The sentence beginning at the end of the third line of the paragraph should be deleted.
13. Page 130, line 9: Should be " $\lim_{m \rightarrow \infty} \sum_{i=0}^m a_i A^i$ ".
14. Page 135, line 12: Should be "... cannot be completed to a completely positive one".
15. Page 137, line 3: Should be " $D = \text{diag}(a_{11}^{-1/2}, \dots, a_{nn}^{-1/2})$ ".
16. Page 145, second line after (C): Should be "where A_1 and A_2 are" (and not were).
17. Page 149, third line in Remark 3.2: Should be $A = W^T W$ (as in the previous line, and not $A = W W^T$).
18. Page 155, end of second line after end of proof: Should be $r(r+1)/2 - 1$ (and not $r(r+1)/2$).
19. Page 161, line -2: Should be "degree 2" and not "degree 1".
20. Page 170, end of line -2: Should be $A(x)$ and not A .
21. Page 173, bottom matrix: Missing a_{23} .
22. Page 174, line 7: Should be "that have" instead of "with" (a rank 1 representation).
23. Page 174, line 4 of Example 3.4: Instead of "We leave the first assertion as an exercise and..." it should be "We leave the cp-rank computation as an exercise and..."
24. Page 174, Exercise 3.23: Should be " $\text{cp-rank}(J_5 + I_5) = 5$ " instead of " $\text{cp-rank}(J_5 + J_5) = 5$ ".
25. Page 180, line -2: Should be " $\sum_{i=1}^k \mathbf{b}_i \mathbf{b}_i^T$ is a rank 1 representation of $A \oplus 0_{n-k}$ ".

26. Page 181, line -2: Should be “so that 1 is a vertex of degree 2”
27. Page 186, line 1: Add after first sentence: “Since G has no cut vertex, it contains a cycle”.
28. Page 186, line -16: Should be “ $k \geq 4$ ” instead of “ $k \geq 3$ ”.
29. Page 189, line 10: Should be “ C has the form $C' \oplus 0_1$ ” (and not $0_1 \oplus C'$).