Errata:
An Introduction to Optimization, Fifth Edition
by
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Typos and minor changes: Printings 1–current

- p. 31, middle of the page: Change $\boldsymbol{Q} < 0$ to $\boldsymbol{Q} \prec 0$. Similarly, change $\boldsymbol{Q} \leq 0$ to $\boldsymbol{Q} \preceq 0$.
- p. 76, Corollary 6.2, line 4: Change $\boldsymbol{F}(\boldsymbol{x}^*) \geq 0$ to $\boldsymbol{F}(\boldsymbol{x}^*) \succeq 0$.
- p. 77, Theorem 6.3, condition 2: Change $\boldsymbol{F}(\boldsymbol{x}^*) > 0$ to $\boldsymbol{F}(\boldsymbol{x}^*) \succ 0$.
- p. 105–107, Exercises for Chapter 7: Change the format of the labels of the various parts of exercises from "a)", "b)", etc. to "a.", "b.", etc., to be consistent with the rest of the book.
- p. 192, Proof of Theorem 12.3, second line: Change $\|\boldsymbol{a}\|$ to $\|\boldsymbol{a}_i\|$ (add subscript i). [Thanks to Sarah Koskie, 5/16/2024].
- p. 362, three lines above Example 19.6: Change the sentence
- p. 238, middle of the page: Change 9781119877639111 to 1111111111111111.
- p. 354, lines 21 and 30: Change "row elementary" to "elementary row" (i.e., swap the order).
- p. 354, third tableau (just below the middle of the page): The element $(3, 4)$ should be changed from 1 to -1. In other words, the third row of numbers should be $0\ 0\ 1\ -1\ 1\ 2$. [Thanks to Sarah Koskie, 5/16/2024].
- p. 362, three lines above Example 19.6: Change the sentence starting with "However" to the following: "However, if the ILP problem data were to have only integer values, then the slack variables and those introduced by the Gomory cuts would automatically be integer-valued (see also Exercise 19.9)." [Thanks to Sarah Koskie, 5/16/2024].
- p. 283, first displayed equation: The left-most symbols in each line (x_1, x_2, $\ddots$, and x_m) are supposed to be aligned in a diagonal arrangement (descending from left to right). Additional spaces should be added to the right of the first three symbols (x_1, x_2, and $\ddots$) to push them further left so that they will align in a diagonal fashion with x_m in the lowest line. [Thanks to Sarah Koskie, 3/13/2026].
- p. 456, Section 23.6, 2nd line: Change "duality hold" to "duality holds" [Thanks to Nikica Hlupić, 5/13/2024].

- p. 456, proof of Theorem 23.2, 2nd line: Change "a convex" to "is a convex" [Thanks to Nikica Hlupić, 5/13/2024].
- p. 521, Example 26.3, line 8: Change "1, and 3" to "1, 2, and 3". [Thanks to Lei Zhao, 8/19/2024].
- p. 524, last line: Change "$h_x = [-1 \;\; 0 \;\; 0]$" to "$h_x = [-1 \;\; 0 \;\; 1]$". [Thanks to Lei Zhao, 8/19/2024].
- p. 538, line 2: Change "$\boldsymbol{w}_{k+1}$" to "$\boldsymbol{w}^{(k+1)}$". [Thanks to Lei Zhao, 8/19/2024].
- p. 540, second line from bottom: Change "$\tilde{\boldsymbol{w}}_T$" to "$\tilde{\boldsymbol{w}}^{(T)}$". [Thanks to Lei Zhao, 8/19/2024].
- p. 541, Step 2.4 of SVRG Algorithm: Change "$\tilde{\boldsymbol{w}}_T$" to "$\tilde{\boldsymbol{w}}^{(T)}$". [Thanks to Lei Zhao, 8/19/2024].
- p. 541, four lines below SVRG algorithm: Change "For $t = 1, \ldots, T'$" to "For $t = 0, \ldots, T' - 1$". [Thanks to Lei Zhao, 8/19/2024].
- p. 544, Step 2 of Distributed SVRG Algorithm, line 7: Change "2.3. At each node" to "2.4. At each node". [Thanks to Lei Zhao, 8/19/2024].
- p. 544, Step 2 of Distributed SVRG Algorithm, line 8: Change "2.3.1." to "2.4.1.".
- p. 544, Step 2 of Distributed SVRG Algorithm, line 9: Change "2.3.2." to "2.4.2.".
- p. 544, Step 2 of Distributed SVRG Algorithm, line 10: Change "2.3.2.1." to "2.4.2.1.".
- p. 544, Step 2 of Distributed SVRG Algorithm, line 11: Change "2.3.2.2". to "2.4.2.2.".
- p. 544, Step 2 of Distributed SVRG Algorithm, line 12: Change "$\nabla f_{j_n^{(t)}}(\tilde{\boldsymbol{w}}_n^{(t-1)})$" to "$\nabla f_{j_n^{(t)}}(\tilde{\boldsymbol{w}}_n^{(t)})$".
- p. 544, Step 2 of Distributed SVRG Algorithm, line 13: Change "2.3.3." to "2.4.3.".
- p. 544, Step 2 of Distributed SVRG Algorithm, line 14: Change "2.4. At the CC, compute $\tilde{\boldsymbol{w}}_n^{(T)}$, $n = 1, \ldots, N$, and set" to "2.5. At the CC, set".
- p. 547, line 5: Change "Y" to "y". [Thanks to Lei Zhao, 8/19/2024].
- p. 559, last line of Example 28.2: add a period.
- p. 573, four lines before Section 29.1.4: Delete the minus sign in front of log. [Thanks to Lei Zhao, 8/19/2024].
- p. 574, five lines from bottom: Change "b^+" to "b^*". [Thanks to Lei Zhao, 8/19/2024].
- p. 587, Exercise 29.10, first line of part a: Change "and as follows" to "and testing as follows". [Thanks to Lei Zhao, 8/19/2024]

- p. 595, five lines from bottom: Change "Section 30.330.3" to "Section 30.3.3". [Thanks to Lei Zhao, 8/19/2024].
- p. 598, lines 4 and 5: Change "L" to "l".
- p. 599, four lines before Section 30.3.3: Change "$\boldsymbol{x}_t$" to "$\boldsymbol{x}_5$".
- p. 600, lines 12, 13, and 14: Change "L" to "l".
- p. 601, Example 30.4, line 3: Change "$\boldsymbol{x}_i$" to "$\boldsymbol{x}_1$".
- p. 601, Example 30.4, line 9, first component of $\boldsymbol{x}_{38}$: Change "6.4" to "6.3".
- p. 602, six lines before Section 30.4: Delete "of".
- p. 605, six lines before Section 30.5.3.1: Change "0" to "0". [Thanks to Lei Zhao, 8/19/2024].
- p. 607, Example 30.7, line 3: Change "defined" to "define". [Thanks to Lei Zhao, 8/19/2024].
- p. 609, line 3: Change "$\|\boldsymbol{W}\|_2^2$" to "$\|\boldsymbol{W}\|_F^2$". [Thanks to Lei Zhao, 8/19/2024].
- p. 612, K-Means Clustering Algorithm, Step 4: Change superscript $(i+1)$ to $(t+1)$ (3 corrections).
- p. 613, five lines from bottom: Change "$C_1 = \{\boldsymbol{x}_1, \boldsymbol{x}_4, \boldsymbol{x}_5, \boldsymbol{x}_6\}$" to "$C_1 = \{\boldsymbol{x}_1, \boldsymbol{x}_2, \boldsymbol{x}_4, \boldsymbol{x}_5, \boldsymbol{x}_6\}$". [Thanks to Lei Zhao, 8/19/2024].
- p. 620, line 13: Change "$\sqrt{\frac{n_1}{P}}\boldsymbol{h}_1 + \sqrt{\frac{n_2}{P}}\boldsymbol{h}_1 + \cdots + \sqrt{\frac{n_K}{P}}\boldsymbol{h}_1$" to "$\sqrt{\frac{n_1}{P}}\boldsymbol{h}_1 + \sqrt{\frac{n_2}{P}}\boldsymbol{h}_2 + \cdots + \sqrt{\frac{n_K}{P}}\boldsymbol{h}_K$" (i.e., the subscripts should not be all 1).
- p. 621, line 4: Change "$\boldsymbol{U}$" to "$\boldsymbol{R}$".