Errata:
An Introduction to Optimization, Fourth Edition
by
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Typos and minor changes: Printings 1–3

- p. 12, second line from bottom: Remove one of the two repeated instances of “use.”
- p. 52, four lines from bottom: Change “convex polytope” to “polyhedron”.
- p. 52, caption of Figure 4.10: Change to “Polyhedra.”
- p. 52, three lines from bottom: Change “A nonempty bounded polytope is called a polyhe- dron” to “A nonempty bounded polyhedron is called a polytope”.
- p. 53, caption of Figure 4.11: Change to “polyhedron” to “polytope”.
- p. 162, line 4: Replace “objection function” by “objective function” (thanks to Ali Pezeshki).
- p. 202, part of Example 11.2: Replace the part of the example from the first displayed equation with the following:

\[ f(x) = (x_2 - x_1)^4 + 12x_1x_2 - x_1 + x_2 - 3 \]

with an initial point

\[ x^{(0)} = [-0.5262, 0.6014]^T \]

and initial matrix

\[ H_0 = \begin{bmatrix} 0.1186 & -0.0376 \\ -0.0376 & 0.1191 \end{bmatrix}. \]

Note that \( H_0 > 0 \). We have

\[ \Delta g^{(0)^T}(\Delta x^{(0)} - H_0 \Delta g^{(0)}) = -0.00076948 \]

and

\[ H_1 = \begin{bmatrix} 0.0331 & 0.0679 \\ 0.0679 & -0.0110 \end{bmatrix}. \]

It is easy to check that \( H_1 \) is not positive definite (it is indefinite, with eigenvalues 0.0824 and -0.0603).

[Thanks to Julio Gonzalez-Saenz for pointing out the need to change the numerical values in this example.]

- p. 284, line 8: Replace “\( g^{(k+1)} = x_i^{(k+1)} \)” by “\( i^* = \arg \min_i f(x_i^{(k+1)}) \) and \( g^{(k+1)} = x_i^{(k+1)} \)” (it should read, “set \( i^* = \arg \min_i f(x_i^{(k+1)}) \) and \( g^{(k+1)} = x_i^{(k+1)} \).
p. 290, last line: Change “8-bit” to “16-bit.”

p. 316, eight lines from bottom: Change “polytope” to “polyhedron” (two occurrences).

p. 316, seven lines from bottom: Change “polyhedron” to “polytope”. Same with occurrences of “polyhedron” six, four, three, and two lines from the bottom.

p. 317, Figure 15.4 caption and line two: Change “polyhedron” to “polytope”.

p. 539, line 4: Change “gep” to “gevp” in the MATLAB command.

p. 539, line 7: Change “$C(x) \leq D(x)$, $C(x) \leq D(x)$” to “$C(x) \leq D(x)$, $0 \leq B(x)$” (the second inequality should be $0 \leq B(x)$).

p. 611, index entry for “polyhedron” under “Convex set”: Change 317 to 316.

p. 611, index entry for “polytope” under “Convex set”: Change 316 to 316, 317.

p. 619, index entry for “Proportional fairness”: Change the page number to 545.

p. 621, index entry for “Singular value decomposition”: Change the page number to 575.

p. 621, index entry for “Subgradient”: Change the page numbers to 519, 541.