# 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 *polyhedron*" 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:

  $$f(\boldsymbol{x}) = (x_2 - x_1)^4 + 12x_1x_2 - x_1 + x_2 - 3$$

  with an initial point

  $$\boldsymbol{x}^{(0)} = [-0.5262, 0.6014]^\top$$

  and initial matrix

  $$\boldsymbol{H}_0 = \begin{bmatrix} 0.1186 & -0.0376 \\ -0.0376 & 0.1191 \end{bmatrix}.$$

  Note that $\boldsymbol{H}_0 > 0$. We have

  $$\Delta\boldsymbol{g}^{(0)\top}(\Delta\boldsymbol{x}^{(0)} - \boldsymbol{H}_0\Delta\boldsymbol{g}^{(0)}) = -0.00076948$$

  and

  $$\boldsymbol{H}_1 = \begin{bmatrix} 0.0331 & 0.0679 \\ 0.0679 & -0.0110 \end{bmatrix}.$$

  It is easy to check that $\boldsymbol{H}_1$ 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 "$\boldsymbol{g}^{(k+1)} = \boldsymbol{x}_i^{(k+1)}$" by "$i^* = \arg\min_i f(\boldsymbol{x}_i^{(k+1)})$ and $\boldsymbol{g}^{(k+1)} = \boldsymbol{x}_{i^*}^{(k+1)}$" (it should read, "set $i^* = \arg\min_i f(\boldsymbol{x}_i^{(k+1)})$ and $\boldsymbol{g}^{(k+1)} = \boldsymbol{x}_{i^*}^{(k+1)}$").

- 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 occurences 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 "$\boldsymbol{C}(\boldsymbol{x}) \leq \boldsymbol{D}(\boldsymbol{x})$, $\boldsymbol{C}(\boldsymbol{x}) \leq \boldsymbol{D}(\boldsymbol{x})$" to "$\boldsymbol{C}(\boldsymbol{x}) \leq \boldsymbol{D}(\boldsymbol{x})$, $0 \leq \boldsymbol{B}(\boldsymbol{x})$" (the second inequality should be $0 \leq \boldsymbol{B}(\boldsymbol{x})$).
- 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. 619, index entry for "Quadratic programming": Change the page numberx to 401, 476, 485, 504.
- 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.