Optimization for Data Analysis: Typos

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Typos for "Optimization for Data Analysis"

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- p.19, two equations below (2.12), and "=" should be replaced by "≤". Specifically,

$$f(x^* - \alpha \nabla f(x^*)) = f(x^*) - \frac{1}{2}\alpha \|\nabla f(x^*)\|^2 < f(x^*),$$

  should be

$$f(x^* - \alpha \nabla f(x^*)) \leq f(x^*) - \frac{1}{2}\alpha \|\nabla f(x^*)\|^2 < f(x^*),$$

- p.34, first line after proof of Theorem 3.5: "for the the sequence" should be "for the sequence".
- p.40, line −8: "using the (3.22a)" should be "using (3.22a)".
- p.46, second line of Example 3.8: "$\sum_{i=1}^n p_i = 0$" should be "$\sum_{i=1}^n p_i = 1$".
- p.47, line 10: "inverse function of h" should be "inverse function of ∇h".
- p.47, last line: "for all $g \in \partial f(x)$, where $\|\cdot\|_*$ is the dual norm of $\|\cdot\|$." should be "for all $g \in \partial f(x)$. Here, $\partial f(x)$ denotes the subdifferential of f at x (see Definition 8.1) and $\|\cdot\|_*$ is the dual norm of $\|\cdot\|$, defined by $\|z\|_* = \sup_{\|x\|\leq 1} z^T x$."
- p.48, line 4: "the definition of the normal cone" should be "the definition of the normal cone (Definition 7.1)"
- p.68, line -11. Missing ")": "Beck and Teboulle, 2009)." should be "Beck and Teboulle, 2009).)"
- p.79, in formula (5.10), "$(f(y_i), x_i))$" should be "$(f(x_i), y_i))$". In the line before this formula, "$\hat{x}(y)$" should be "$f(x)$".
- p.95, line 18: "described by first by Zhang (2004)" should be "described first by Zhang (2004)".
- p.102, line −8: "Many optimization" should be "Many optimization problems".
- p.130, line 4: "Goldstein, 1974" should be "Goldstein (1974)"
- p.174, line −6: "when φ obtained from" should be "for φ obtained from"
- p.180, two lines before formula (10.20), "strongly convex in λ" should be "strongly concave in λ".
- p.190, last line: $(\nabla_{x_{l-3}} \phi_{l-2})$ should be $\left(\nabla_{\phi_{l-3}} \phi_{l-2}\right)$
- p.194, line 18: "all of its of its children" should be "all of its children".
- p.207, line 8. "both (A.16) and (A.17) both have" should be "both (A.16) and (A.17) have".

- p.210, line −14: "$x^k = (k, 1/k)^T$" should be "$x^k = (k, 1/k)$"
- p.210 line −12: "$z^k \to (0,0)^T$ but $(0,0)^T \notin X - Y$" should be "$z^k \to (0,0)$ but $(0,0) \notin X - Y$".
- p.211, lines 11-12: "almost immediate consequence of the separating hyperplane theorem" should be "almost immediate consequence of Lemma A.11".
- p.215, line 7: "a $n \times n$ orthogonal matrix" should be "an $n \times n$ orthogonal matrix"