CORRECTIONS

I. Corrections:

- page 8, line 8: replace "that is the sup is attained." with "that is, the sup is attained if it is finite."
- page 9, line 4: replace "the compactness" with "compactness"
- page 13, line 5 (in Exercise 1.1): replace "$\mathbf{x}_i \in \mathbb{R}^n$" with "$\mathbf{x}_i \in \mathbb{K} \subset \mathbb{R}^n$"
- page 13, line 7 (in Exercise 1.1): replace "$\mathbf{x} \in \mathbb{R}^n$" with "$\mathbf{x} \in \mathbb{K}$"
- page 19, line 16 from bottom: "In fact" instead of "If fact"
- page 19, line 5 from bottom: "$\mathbb{R}^{s(2d)}$" instead of "$\mathbb{R}^s$".
- page 20, line 6 from bottom: replace "all $\lambda \geq 0$" with "all $\lambda \in \mathbb{R}$"
- page 24, just above equation (2.7): replace "if only if" with "if and only if"
- page 25, line 8 from bottom: replace "$\mathbb{R}^+_n$" with "$\mathbb{R}^n_+$"
- page 54, line 6: replace "Recall that for" with "For"
- page 60, in equation (3.13): replace "a^α" with "$a^{|\alpha|}$"
- page 60, line 6 from bottom: replace the exponent "$\frac{1}{\alpha}$" with "$\frac{1}{|\alpha|}$"
- page 69, line 10: replace "$k = 0, 1, \ldots$" with "$k = 1, 2, \ldots$"
- page 72, line 11 from bottom: replace "the the complex" with "the complex"
- page 75, line 5: replace "f_0." with "f."
- page 76, last line: replace "$= h_j(\mathbf{x})$" with "$= g_j(\mathbf{x})$"
- page 77, line 6: replace "$\langle \mathbf{f}_{jk}, \mathbf{v}_{i-v_j}(\mathbf{x})\rangle^2$" with "$\langle \mathbf{f}_{jk}, \mathbf{v}_{i-v_j}(\mathbf{x})\rangle^2\, g_j(\mathbf{x})$"
- page 78, line 14: replace "a lower bound" with "an upper bound"
- page 78, lines 20 and 27: replace "a lower bound $\rho_k \leq \rho_{\rm mom}$" with "an upper bound $\rho_k \geq \rho_{\rm mom}$".
- page 81, line 12: replace "d_i^2," with "κ_i^2,"
- page 87, line 5: before "The linear ..." insert "In (4.21) and possibly after scaling, one assumes that $0 \leq g_j \leq 1$ on $\mathbb{K}$ for all $j = 1, \ldots, m$, and the g_j's generate the algebra $\mathbb{R}[\mathbf{x}]$. The linear ..."
- page 90, in Equation (4.27): replace "on $\mathbb{K}_i$, $\forall i \in \Delta$" with "$\forall i \in \Delta$"
- page 111, line 16: replace "In doing so," with "In doing so"
- page 111, line 17: replace "relaxations, instead of" with "relaxations instead of"
- page 116, line 7: replace "first"moments" y^*_α" with "first "moments" y^*_α"
- page 116, last line: replace "a SDP" with "an SDP"
- page 118, line 13 from bottom: replace "on f^*" with "on $f^*_{\mathbb{K}}$"
- page 124, last two lines of Theorem 5.9: "$\downarrow f^*_{\mathbb{K}}$" should be "$\uparrow f^*_{\mathbb{K}}$" (twice), and replace "as $i \to \infty$. as $i \to \infty$." with "as $i \to \infty$."
- page 125: replace "$\widehat{g}^\alpha(1-\widehat{g})^\beta$" with "$\widehat{\mathbf{g}}^\alpha(1-\widehat{\mathbf{g}})^\beta$" in (5.19) and (5.20).
- page 126: replace "g^α" with "$\mathbf{g}^\alpha$" in (5.22) and (5.23).
- page 126, last line: replace "$\widehat{g}^\alpha(\mathbf{x}^*)(1-\widehat{g}(\mathbf{x}^*))^\beta$" with "$\widehat{\mathbf{g}}^\alpha(\mathbf{x}^*)(1-\widehat{\mathbf{g}}(\mathbf{x}^*))^\beta$"
- page 127, line 8 from bottom: replace "$(1-\widehat{g})^\beta$" with "$(1-\widehat{\mathbf{g}})^\beta$"
- page 138 in Proposition 5.18: replace "the ideal I_f is" with "the ideal $I_f = \langle \partial f/\partial x_1, \ldots, \partial f/\partial x_n\rangle$ is"

- page 142, line 10 from bottom: replace "objectif" with "objective"
- page 156, line 10: replace "$J : \{$" with "$J := \{$"
- page 168, line 17: replace "$= \{x^2/100 + y^2 \geq 1\}$." with "$= \{x_1^2/100 + x_2^2 \geq 1\}$."
- page 191, line 5: replace "the the Monte" with "the Monte"
- page 213, line 13: replace "the the values" with "the values"
- page 244, line 8: replace "orthogonal" with "orthonormal"
- page 244, first line of footnote 2: replace "orthogonal" with "orthonormal"
- page 265, line 9 from bottom: replace "the robust" with "a robust"
- page 279, line 7: replace "$\sum_{\alpha\in\mathbb{N}^n}(\sum_{\alpha\in\mathbb{N}^n}$" with "$\sum_{\alpha\in\mathbb{N}^{n_2}}(\sum_{\beta\in\mathbb{N}^{n_1}}$"
- page 294, line 2: replace "an ordering $\leq$a total" with "an ordering $\leq$, i.e., a total"
- page 312, line 9 from below: replace "and and" with "and"

II. Updates of some references: The new references (published in a journal) are not of the same year as in the original version and so the new possible numbering for references of the same author in the same year like e.g. (2010a) may have changed. Please check!

- page 347, line 8 from bottom: Henrion, D., Lasserre, J.B. and Savorgnan, C. (2009b). Approximate volume and integration for basic semi-algebraic sets, *SIAM Review* **51**, pp. 722–743.
- page 347, line 5 from bottom: Herings, P. J.-J., Peeters, R. (2010). Homotopy methods to compute equilibria in game theory, *Econom. Theory* **42**, pp. 119–156.
- page 350, line 6: Laraki, R. and Lasserre, J.B. (2012). Semidefinite programming for min-max problems and games, *Math. Program. Sér. A* **131**, pp. 305–332
- page 351, line 9: Lasserre, J.B. (2010). Certificates of convexity for basic semi-algebraic sets, *Applied Math. Letters* **23**, pp. 912–916.
- page 352, line 2 from bottom: Marshall, M. (2010). Polynomials non-negative on a strip, *Poc. Amer. Math. Soc.* **138**, pp. 1559–1567.
- page 355, line 7: Roughgarden, T. (2010). Computing equilibria: a computational complexity perspective, *Econom. Theory* **42**, pp. 193–236.
- page 358, line 15 from bottom: Waki, H., Kim, S., Kojima, M., Muramatsu, M. and Sugimoto, H. (2009). Algorithm 883: sparsePOP–a sparse semidefinite programming relaxation of polynomial optimization problems, *ACM Trans. Math. Software* **35**, pp, 90—104.