Changes

Sept. 3, 2016

- Title: change “in “Passive” to “for Passive” (2 places).
- P. 2, line 11, change “are iterative, hence extremely sensitive” to “are sensitive”.
- P. 3, line 10, change “the some best” to “some best”.
- P. 3, line 14, change “which, on comparing with the best known results, is found” to “is found”.
- P. 4, 3-4 lines below Eq. (2.2), change “independent identically distributed (Gaussian)” to “independently and identically distributed (i.i.d) Gaussian”.
- P. 4, 8 lines below Eq. (2.4), change “Although there are many methods for unconstrained optimization [30]” to “Although many methods for unconstrained optimization are available [30]”.
- P. 5, in the line right immediately below Fig. 2.1, change “its global” to “global”.
- P. 5, 6 lines below Fig. 2.1, change “Figure (2.1) describes” to “Figure 2.1 depicts”. (This is a global change: delete the bracket when numbering figures).
- P. 7, in the line right after Eq. (2.10a), delete $\boldsymbol{y} = \left[\boldsymbol{x}^T \quad \| \boldsymbol{x} \|^2 \right]^T$.
- P. 7, in Eq. (2.11), add $\boldsymbol{y} = \begin{bmatrix} \boldsymbol{x} \\ \| \boldsymbol{x} \|^2 \end{bmatrix}$ as the first item and give a bit more space between “,” and “$\boldsymbol{b}$”. Likewise, give a bit more space between “,” and “$\boldsymbol{f}$”.
- P. 7, 5 lines below Eq. (2.11), change “in the case of GTRS” to “in this case”.
- P. 7, 2 lines above Eq. (2.12), change “Few remarks are now in order” to “We now conclude this section with a couple of remarks”.
- P. 8, in the first 6 lines of Sec. 2.1.3, there are 4 “{cite}”, I guess you intend to include some references there, please fix the problem.
- P. 8, in line 7 in Sec. 2.1.3, change “as: given” to “as follows: Given”.
- P. 8, in line 7 in Sec. 2.1.3, change “ancors” to “anchors”.
- P. 8, in line 9 in Sec. 2.1.3, change “*m* ancors” to “the *m* anchors”.
- P. 8, modify the last 14 lines of this page to: “The Fermat-Weber problem is much easier to analyze and solve than the ML problem (2.2) because it is a well-structured nonsmooth convex minimization problem. The similarities between the Fermat-Weber problem and problem (2.2) have been noted and addressed in the literature [16] with a gradient method with a fixed step size, known as the standard fixed point (SFP) algorithm, to deal with problem (2.2). However, being a gradient method, likelihood for the SFP algorithm to converge to a local solution exists. i Another method, also proposed in [16] and known as the sequential weighted least squares

algorithm (SWLS), is also an iterative algorithm where each iteration involves solving a nonlinear least squares problem similar to (2.9). The SWLS algorithm is found to be superior over SFP in terms of convergence rate and a wider region of convergence to the global minimum [16]. However, the possibility for SWLS to converge to a local minimum remains in certain sensor setup even if the initial point is constructed using a procedure developed specifically for SWLS. The method presented below takes an approach that is different from those described above in the sense that it does not require an initial point and the solution produced is guaranteed to converge to a global solution."

Darya: The modifications made above are somewhat major, please make sure that its contents are correct and accurate as long as you are concerned.

- P. 9, 1 line above Eq. (2.14), change "a weighted SR-LS (WSR-LS) problem, namely," to "the weighted squared ranged based least-squares (WRS-LS) problem"
- P. 9, 1 line below Eq. (2.14), change "Following [15]" to "which is obviously a weighted version of the SR-LS problem in (2.9). Following [15],".
- P. 9, 1 line below Eq. (2.15b), change "where $\boldsymbol{\Gamma} = \mathrm{diag}\left(\sqrt{w_1},\ldots,\sqrt{w_m}\right)$." to "where $\boldsymbol{A}$, $\boldsymbol{b}$, $\boldsymbol{D}$, and $\boldsymbol{f}$ are defined in (2.11) and $\boldsymbol{\Gamma} = \mathrm{diag}\left(\sqrt{w_1},\ldots,\sqrt{w_m}\right)$."
- P. 11, in Algorithm 1, step 4), change "via (2.16)" to "by solving (2.16), i.e.".
- P. 12, line 2, change "The algorithm converges" to "Computer simulations have indicated that the algorithm converges".
- P. 12, line 4, change "solve (2.19)" to "solve (2.16)".
- P. 12, line 10, change "This section presents" to "In what follows we present".
- P. 12, in the 1st line of the 3rd paragraph of "**A variant of Algorithm 1**", change "The well-known Newton" to "For the localization problem in question, the well-known Newton".
- P. 12, in the 5th line of the 3rd paragraph of "**A variant of Algorithm 1**", change "x" to "$\boldsymbol{x}$".
- P. 14, move Table 2.1 to after the first paragraph of Sec. 2.1.4.
- P. 14, in Sec. 2.1.4, line 9, change "independent and identically distributed (i.i.d)" to "i.i.d Gaussian".
- P. 14, in Sec. 2.1.4, lines 13-14, change "SR-LS. Each table entry is a MSE" to "SR-LS, where each entry is an MSE".
- P. 15, move Table 2.2 to after the 2nd paragraph (which is the paragraph that starts with "Each entry in Table 2.2 …").
- P. 15, line 4 in the 2nd paragraph, change "suggest that, again, IRWSR-LS" to "demonstrate again that IRWSR-LS".
- P. 15, lines 4-5 in the 2nd paragraph, change "Figures (2.2 – 2.5)" to "Figures 2.2 to 2.5".
- P. 15, line 7 in the 2nd paragraph, change "…, 1}. Here" to "…, 1}, where".

- P. 15, line 8 in the 2nd paragraph, change “Histograms that” to “Note that the histograms that”.
- P. 15, line 10 in the 2nd paragraph, change “. Also, the solution” to “, and the solution”.
- P. 15, line 11 in the 2nd paragraph, delete “with large error”.