A Small Library of Pseudo-Code Relevant to Sequential Statistics

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1 Median Absolute Deviation - MAD

Algorithm 1 Median Absolute Deviation of a Sorted Container T via Bisection

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1: **function** MAD(T)
2:   **if** $\#T = 1$ **then**
3:     **return** 0
4:   **function** BISECT($T, (a,b), (c,d)$)
5:     $\widetilde{T} \leftarrow \frac{1}{2}(T_{\lceil \#T/2 \rceil - 1} + T_{\lfloor \#T/2 \rfloor})$
6:     **if** $b - a < 2$ **then**
7:       **if** $\#T \% 2 = 0$ **then**
8:         **return** $\frac{1}{2}(\max(\widetilde{T} - T_b, T_c - \widetilde{T}) + \min(\widetilde{T} - T_a, T_d - \widetilde{T}))$
9:       **else**
10:         **return** $\min(\max(\widetilde{T} - T_b, T_c - \widetilde{T}), \min(\widetilde{T} - T_a, T_d - \widetilde{T}))$
11:     **if** $4\widetilde{T} > T_a + T_b + T_c + T_d$ **then**
12:       **return** BISECT($T, (a + \lfloor \frac{b-a}{2} \rfloor, b), (c + \lfloor \frac{d-c}{2} \rfloor, d)$)
13:     **else**
14:       **return** BISECT($T, (a, a + \lceil \frac{b-a}{2} \rceil), (c, c + \lceil \frac{d-c}{2} \rceil)$)
15:   **return** BISECT($T, (0, \lfloor \#T/2 \rfloor - 1), (\lceil \#T/2 \rceil, \#T - 1)$)