Correction to: manuscript entitled: MO-NFSA for solving unconstrained multi-objective optimization problems

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Correction to: Engineering with Computers
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Below are the Corrections Given for Proof-Read:

1) Requested correction to: Add in missing Fig. 6c

Based on the corrections we requested in the proofreading, we only asked for corrections to Fig. 6a, b due to their poor qualities, but there was no comment for deleting or removing Fig. 6c. However, in the in-Press version, Fig. 6c was removed from the article. Figure 6c is attached below for inclusion.

2) Requested correction to: To add missing part of a sentence

In the **last sentence of Sect. 4.1 on page 7** of the e-offprint, the correction to add missing point in the sentence was not made based on our comments in the proofreading. The additional part of the last sentence must be added at the end of the last sentence in Sect. 4.1.

(Wrong) Text content in published manuscript:

where Eq. (14) contains the elements of normative communication behavior and normative memory behavior in an expression, X_i^t represents the feasible solution of i th candidate at t th iteration, X_{gbest}^t indicates the leader solution selected at t th iteration, X_{gbest}^{t-1} indicates the leader solution selected at $(t-1)$ th iteration, $X_{i,lbst}^t$ denotes the locally stored solution of i th candidate at t th iteration, and $X_{i,lbst}^{t-1}$ denotes the locally stored solution of i th candidate at $(t-1)$ th iteration. X_{cg}^t and X_{cg}^{t-1} can be obtained using Eqs. (4) and

(5), respectively, while $X_{i,cl}^t$ and $X_{i,cl}^{t-1}$ can be obtained using Eqs. (8) and (9), respectively.

(Correct) Text content as per requested:

where Eq. (14) contains the elements of normative communication behavior and normative memory behavior in an expression, X_i^t represents the feasible solution of i th candidate at t th iteration, X_{gbest}^t indicates the leader solution selected at t th iteration, X_{gbest}^{t-1} indicates the leader solution selected at $(t-1)$ th iteration, $X_{i,lbst}^t$ denotes the locally stored solution of i th candidate at t th iteration, and $X_{i,lbst}^{t-1}$ denotes the locally stored solution of i th candidate at $(t-1)$ th iteration. X_{cg}^t and X_{cg}^{t-1} can be obtained using Eqs. (4) and (5), respectively, while $X_{i,cl}^t$ and $X_{i,cl}^{t-1}$ can be obtained using Eqs. (8) and (9), respectively, but the concept of greedy selection in these equations must be replaced with the concept of dominance.

3) Requested correction to: Delete unnecessary word in a paragraph

On line 20 of Sect. 3.1 on page 4 of e-offprint, we requested that the word "AF" be deleted from the sentence, but it still remains in the e-offprint version.

(Wrong) Text content in published manuscript:

where X_{gbest}^t indicates the global best location vector of the AF population at t th iteration, X_{gbest}^{t-1} indicates the global best location vector of the population at $(t-1)$ th iteration, X_{cg}^t represents the guidelines selected within the reconnaissance range which originate from X_{gbest}^t , and X_{cg}^{t-1} represents the guidelines selected within the reconnaissance range which originate from X_{gbest}^{t-1} .

(Correct) Text content as per requested:

where X_{gbest}^t indicates the global best location vector of the population at t th iteration, X_{gbest}^{t-1} indicates the global best location vector of the population at $(t-1)$ th iteration, X_{cg}^t represents the guidelines selected within the reconnaissance range which originate from X_{gbest}^t , and X_{cg}^{t-1} represents the guidelines selected within the reconnaissance range which originate from X_{gbest}^{t-1} .

4) Requested correction to: Add in missing equation in Table 3

The original article can be found online at <https://doi.org/10.1007/s00366-020-01223-4>.

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Fig. 6 Pareto front obtained by each algorithm in **a** fixed dimensional multi-objective optimization test cases, **b** non-fixed dimensional multi-objective optimization test cases, and **c** scalable multi-objective optimization test cases

There is an equation missing from Table 3. Please update the entire table by using the following replacement table to avoid further missing equations.

where $|x_M| = k = N - M + 1$. x_M is the last k variables of X , which can be defined as $X_{M \sim N}$.

The original article has been corrected.

Table 3 Scalable multi-objective optimization test cases

Test Case	Mathematical Expression	$[L, U]$	N	Remarks
DTLZ1	$f_1(X) = \frac{1}{2}X_1X_2 \dots X_{M-1}(1 + g(x_M))$ $f_2(X) = \frac{1}{2}X_1X_2 \dots (1 - X_{M-1})(1 + g(x_M))$ $\vdots$ $f_{M-1}(X) = \frac{1}{2}X_1(1 - X_2)(1 + g(x_M))$ $f_M(X) = \frac{1}{2}(1 - X_1)(1 + g(x_M))$ <p>where:</p> $g(x_M) = 100 \left[x_M + \sum_{X_k \in x_M} (X_k - 0.5)^2 - \cos(20\pi(X_k - 0.5)) \right]$	[0,1]	5	Linear
DTLZ2	$f_1(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \cos\left(\frac{X_{M-2}\pi}{2}\right) \cos\left(\frac{X_{M-1}\pi}{2}\right)$ $f_2(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \cos\left(\frac{X_{M-2}\pi}{2}\right) \sin\left(\frac{X_{M-1}\pi}{2}\right)$ $f_3(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \sin\left(\frac{X_{M-2}\pi}{2}\right)$ $\vdots$ $f_M(X) = (1 + g(x_M)) \sin\left(\frac{X_1\pi}{2}\right)$ <p>where:</p> $g(x_M) = \sum_{X_k \in x_M} (X_k - 0.5)^2$	[0,1]	30	Concave
DTLZ3	$f_1(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \cos\left(\frac{X_{M-2}\pi}{2}\right) \cos\left(\frac{X_{M-1}\pi}{2}\right)$ $f_2(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \cos\left(\frac{X_{M-2}\pi}{2}\right) \sin\left(\frac{X_{M-1}\pi}{2}\right)$ $f_3(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \sin\left(\frac{X_{M-2}\pi}{2}\right)$ $\vdots$ $f_M(X) = (1 + g(x_M)) \sin\left(\frac{X_1\pi}{2}\right)$ <p>where:</p> $g(x_M) = 100 \left[x_M + \sum_{X_k \in x_M} (X_k - 0.5)^2 - \cos(20\pi(X_k - 0.5)) \right]$	[0,1]	5	Concave
DTLZ4	$f_1(X) = (1 + g(x_M)) \cos\left(\frac{X_1^\alpha\pi}{2}\right) \dots \cos\left(\frac{X_{M-2}^\alpha\pi}{2}\right) \cos\left(\frac{X_{M-1}^\alpha\pi}{2}\right)$ $f_2(X) = (1 + g(x_M)) \cos\left(\frac{X_1^\alpha\pi}{2}\right) \dots \cos\left(\frac{X_{M-2}^\alpha\pi}{2}\right) \sin\left(\frac{X_{M-1}^\alpha\pi}{2}\right)$ $f_3(X) = (1 + g(x_M)) \cos\left(\frac{X_1^\alpha\pi}{2}\right) \dots \sin\left(\frac{X_{M-2}^\alpha\pi}{2}\right)$ $\vdots$ $f_M(X) = (1 + g(x_M)) \sin\left(\frac{X_1^\alpha\pi}{2}\right)$ <p>where:</p> $g(x_M) = \sum_{X_k \in x_M} (X_k - 0.5)^2$ $\alpha = 100$	[0,1]	30	Concave
DTLZ5	$f_1(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \cos\left(\frac{\theta_{M-2}\pi}{2}\right) \cos\left(\frac{\theta_{M-1}\pi}{2}\right)$ $f_2(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \cos\left(\frac{\theta_{M-2}\pi}{2}\right) \sin\left(\frac{\theta_{M-1}\pi}{2}\right)$ $f_3(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \sin\left(\frac{\theta_{M-2}\pi}{2}\right)$ $\vdots$ $f_M(X) = (1 + g(x_M)) \sin\left(\frac{X_1\pi}{2}\right)$ <p>where:</p> $\theta_k = \frac{\pi}{4(1+g(x_M))} (1 + 2g(x_M)X_k), k = 2, 3, \dots, (M-1)$ $g(x_M) = \sum_{X_k \in x_M} (X_k - 0.5)^2$	[0,1]	30	Continuous curve

Table 3 (continued)

Test Case	Mathematical Expression	$[L, U]$	N	Remarks
DTLZ6	$f_1(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \cos\left(\frac{\theta_{M-2}\pi}{2}\right) \cos\left(\frac{\theta_{M-1}\pi}{2}\right)$ $f_2(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \cos\left(\frac{\theta_{M-2}\pi}{2}\right) \sin\left(\frac{\theta_{M-1}\pi}{2}\right)$ $f_3(X) = (1 + g(x_M)) \cos\left(\frac{X_1\pi}{2}\right) \dots \sin\left(\frac{\theta_{M-2}\pi}{2}\right)$ $\vdots$ $f_M(X) = (1 + g(x_M)) \sin\left(\frac{X_1\pi}{2}\right)$ <p>where:</p> $\theta_k = \frac{\pi}{4(1+g(x_M))} (1 + 2g(x_M)X_k), k = 2, 3, \dots, (M-1)$ $g(x_M) = \sum_{X_k \in x_M} X_k^{0.1}$	$[0, 1]$	5	Continuous curve
DTLZ7	$f_1(X) = X_1$ $f_2(X) = X_2$ $\vdots$ $f_{M-1}(X) = X_{M-1}$ $f_M(X) = (1 + g(x_M))h(f_1, f_2, \dots, f_{M-1}, g(x_M))$ <p>where:</p> $g(x_M) = 1 + \frac{9}{ x_M } \sum_{X_k \in x_M} X_k$ $h(f_1, f_2, \dots, f_{M-1}, g(x_M)) = M - \sum_{m=1}^{M-1} \left[\frac{f_m}{1+g(x_M)} (1 + \sin(3\pi f_m)) \right]$	$[0, 1]$	30	Discontinuous