Corrigendum: Rise of the machines: Best practices and experimental evaluation of computer-assisted dorsal fin image matching systems for bottlenose dolphins

Reny B. Tyson Moore[1]*, Kim W. Urian[2], Jason B. Allen[1], Carolyn Cush[1], Jason R. Parham[3], Drew Blount[3], Jason Holmberg[3], Jamie W. Thompson[4] and Randall S. Wells[1]

[1]Chicago Zoological Society's Sarasota Dolphin Research Program, c/o Mote Marine Laboratory, Sarasota, FL, United States, [2]Duke University Marine Laboratory, Nicholas School of the Environment, Duke University, Beaufort, NC, United States, [3]Wild Me, Portland, OR, United States, [4]Valdez AI Consulting, Laramie, WY, United States

KEYWORDS

photographic-identification, photo-id, computer vision, finFindR, CurvRank, Flukebook, bottlenose dolphin, *tursiops truncates*

A corrigendum on

Rise of the machines: Best practices and experimental evaluation of computer-assisted dorsal fin image matching systems for bottlenose dolphins

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Error in Figure/Table

In the published article, there were errors in Figure 6 and Figure 7 as published. The image for Figure 6 was labeled as Figure 7 and the image for Figure 7 was labeled as Figure 6. In addition, there were values referenced in the caption of Figure 6 which were not applicable to that Figure. The corrected Figure 6 and Figure 7 and their captions appear below.

In the published article, there was an error in Table 1 as published. A few of the percentages listed of images in the first ranked position for the ideal tests in the one-to-many names comparisons were incorrect. The corrected Table 1 and its caption appear below.

FIGURE 6

The percentage of images correctly matched by each algorithm and combination of algorithms (Flukebook algorithms only) and their cumulative rank position for the ideal tests in the **(A)** one-to-many annotations comparisons and **(B)** the one-to-many names comparisons; as well as the percentage of images of varying image quality and fin distinctiveness correctly matched by the independent algorithms for the ideal tests in the **(C)** one-to-many annotations comparisons and **(D)** the one-to-many names comparisons. For reference, Q1 = excellent quality image, Q2 = average quality image, D1 = very distinctive fin, and D2 = average amount of distinctive features on fin (Urian et al., 1999; Urian et al. 2014).
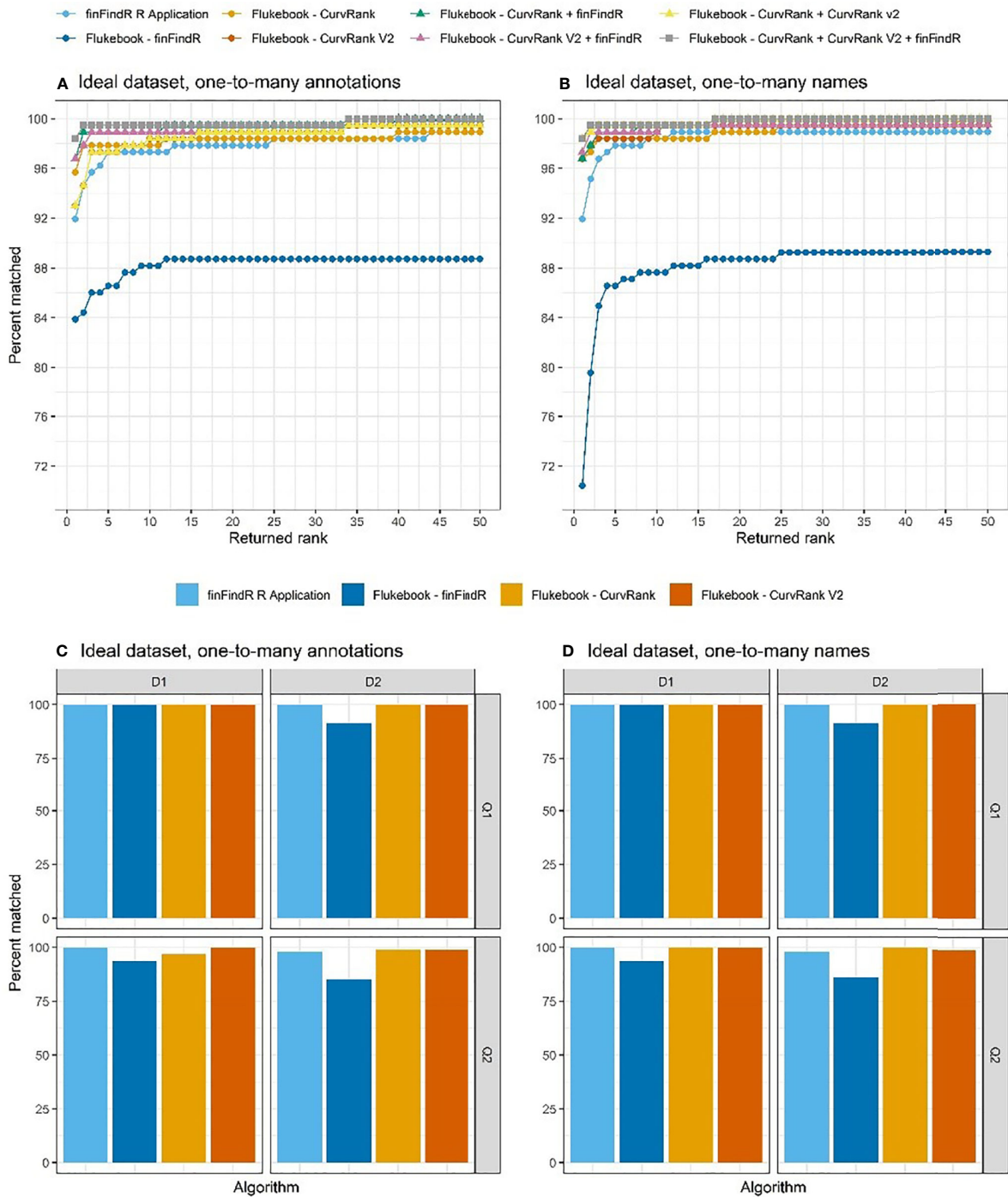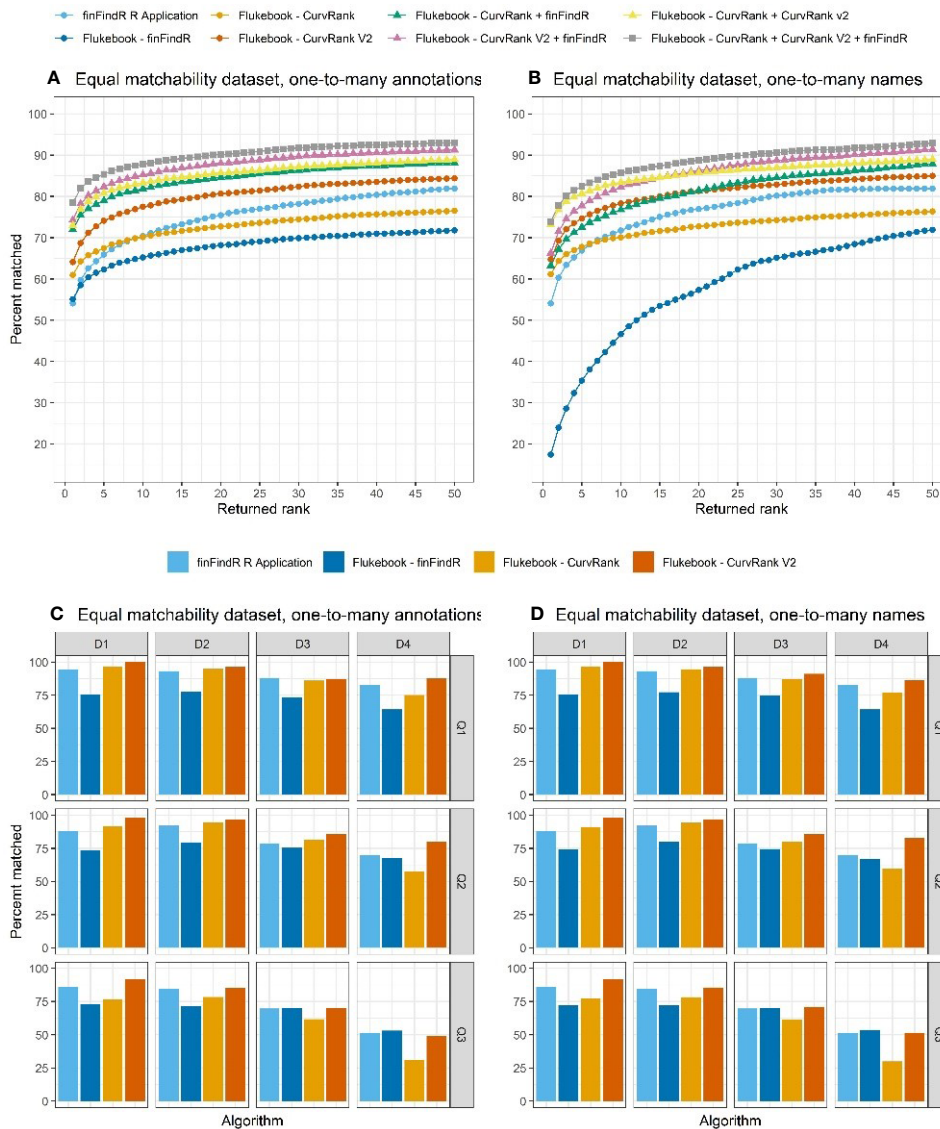
FIGURE 7

The percentage of images correctly matched by each algorithm and combination of algorithms (Flukebook algorithms only) and their cumulative rank position for the equal matchability tests in the **(A)** one-to-many annotations comparisons and **(B)** the one-to-many names comparisons; as well as the percentage of images of varying image quality and fin distinctiveness correctly matched by the independent algorithms for the equal matchability tests in the **(C)** one-to-many annotations comparisons and **(D)** the one-to-many names comparisons. For reference, Q1 = excellent quality image, Q2 = average quality image, Q3 = poor quality image, D1 = very distinctive fin, D2 = average amount of distinctive features on fin, D3 = low distinctiveness, and D4 = not distinct fin (Urian et al., 1999; Urian et al. 2014).

Text Correction

In the published article, there was an error in the text. In the fourth sentence of the first paragraph of the Discussion, the authors incorrectly refer to the wrong Figure panels.

A correction has been made to the Discussion, paragraph one. This sentence previously stated:

"For example, match success was over 98.92% in the top 50-ranked positions for the finFindR R application, and the CurvRank and CurvRank v2 algorithms within Flukebook in both the one-to-many annotations comparisons and the one-to-many names comparisons of Q1, Q2 and D1, D2 images (Table 1, Figures 7A, B)".

The corrected sentence appears below:

TABLE 1   The percentage of correct matches within the top-X ranked positions and the first position for each dataset comparison test (*i.e.*, comprehensive, ideal, and equal matchability tests for the one-to-many annotations and one-to-many names comparisons) and each algorithm evaluated (the finFindR R application, and the CurvRank, CurvRank v2, and finFindR algorithms and their combinations integrated into Flukebook).

Algorithm(s) evaluated	Comprehensive Test (N = 604)			
	One-to-many annotations		One-to-many names	
finFindR R Application	86.09% top 50	69.21% first position	90.07% top 50	71.03% first position
Flukebook - finFindR	78.31% top 50	66.39% first position	79.14% top 50	52.32% first position
Flukebook - CurvRank	82.95% top 50	70.20% first position	82.28% top 50	70.03% first position
Flukebook - CurvRank V2	88.08% top 50	72.85% first position	88.58% top 50	75.17% first position
Flukebook - finFindR + CurvRank	89.57% top 50	77.98% first position	89.57% top 50	73.51% first position
Flukebook - finFindR + CurvRank V2	91.56% top 50	79.64% first position	92.05% top 50	76.99% first position
Flukebook - CurvRank + CurvRank V2	90.56% top 50	79.14% first position	89.74% top 50	78.81% first position
Flukebook - CurvRank + CurvRank V2 + finFindR	92.55% top 50	81.62% first position	92.38% top 50	79.80% first position

Algorithm(s) evaluated	Ideal Test (N = 186)			
	One-to-many annotations		One-to-many names	
finFindR R Application	98.92% top 50	91.94% first position	98.92% top 50	91.94% first position
Flukebook - finFindR	88.71% top 50	83.87% first position	89.25% top 50	70.43% first position
Flukebook - CurvRank	98.92% top 50	95.70% first position	100.00% top 47	96.77% first position
Flukebook - CurvRank V2	99.46% top 50	93.01% first position	99.46% top 50	96.77% first position
Flukebook - finFindR + CurvRank	100.00% top 40	96.77% first position	100.00% top 17	96.77% first position
Flukebook - finFindR + CurvRank V2	99.46% top 50	96.77% first position	99.46% top 11	97.31% first position
Flukebook - CurvRank + CurvRank V2	100.00% top 33	97.85% first position	100.00% top 17	98.39% first position
Flukebook - CurvRank + CurvRank V2 + finFindR	100.00% top 33	98.39% first position	100.00% top 17	98.39% first position

Algorithm(s) evaluated	Equal Matchability Test (N = 2,485)			
	One-to-many annotations		One-to-many names	
finFindR R Application	81.88% top 49	54.10% first position	81.88% top 49	54.10% first position
Flukebook - finFindR	71.67% top 49	55.09% first position	71.71% top 49	17.46% first position
Flukebook - CurvRank	76.41% top 49	60.95% first position	76.23% top 49	61.15% first position
Flukebook - CurvRank v2	84.32% top 49	64.08% first position	84.90% top 49	64.74% first position
Flukebook - finFindR + CurvRank	88.06% top 49	71.99% first position	87.78% top 49	63.25% first position
Flukebook - finFindR + CurvRank v2	91.21% top 49	74.27% first position	91.31% top 49	66.28% first position
Flukebook - CurvRank + CurvRank v2	88.84% top 49	72.98% first position	88.85% top 49	73.19% first position
Flukebook - CurvRank + CurvRank v2 + finFindR	93.01% top 49	78.43% first position	92.80% top 49	73.92% first position

Note the comprehensive and ideal tests evaluated the top-50 ranked positions, while the equal matchability tests evaluated the top 49-ranked positions.

"For example, match success was over 98.92% in the top 50-ranked positions for the finFindR R application, and the CurvRank and CurvRank v2 algorithms within Flukebook in both the one-to-many annotations comparisons and the one-to-many names comparisons of Q1, Q2 and D1, D2 images (Table 1, Figures 6A, B)".

The authors apologize for these errors and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

Publisher's note