

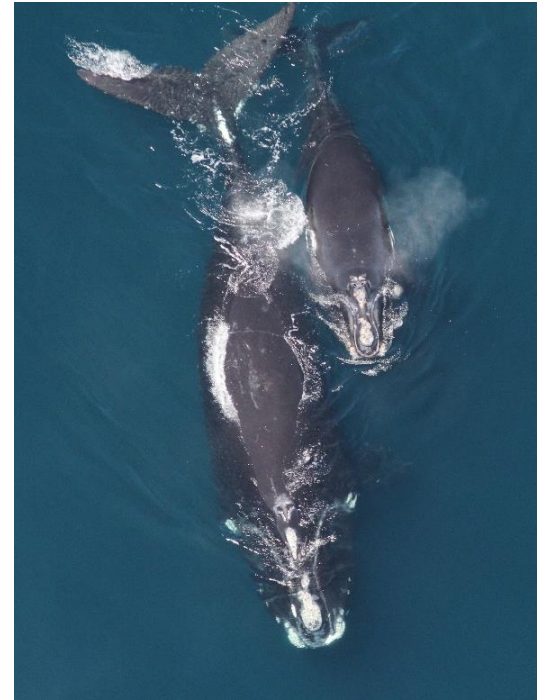
Artificial intelligence for right whale photo identification: From data science competition to worldwide collaboration

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Highlights:

- Right whales can now be matched using AI in Flukebook.
- Machine learning algorithms were trained on catalogs worldwide on both the North Atlantic right whale (United States, Canada) and the southern right whale (Australia, South Africa, Argentina, Brazil, New Zealand).
- Photos can be matched from multiple features (head, flukes, peduncle) and viewpoints (aerial, lateral).



This article is part of a thematic collection of articles (Special Issue) of *Mammalian Biology* and covers the following topics and taxa (marked with) addressed in the Special Issue:

Article Type				
<input type="checkbox"/> Original Research	<input checked="" type="checkbox"/> Techniques	<input type="checkbox"/> Review	<input type="checkbox"/> Short Communication	<input type="checkbox"/> Concept Note
Taxon		Topic		
Terrestrial				
<input type="checkbox"/> Bats <i>(Order Chiroptera)</i>	<input type="checkbox"/> Primates : Great Apes <i>(Family Hominidae)</i>	<input type="checkbox"/> Acoustic ID	<input checked="" type="checkbox"/> Identification techniques	
<input type="checkbox"/> Carnivores : Bears <i>(Family Ursidae)</i>	<input type="checkbox"/> Primates : Old World monkeys <i>(Family Cercopithecidae)</i>	<input checked="" type="checkbox"/> Aerial surveys	<input type="checkbox"/> Life-history	
<input type="checkbox"/> Carnivores : Canids <i>(Family Canidae)</i>	<input type="checkbox"/> Ungulates : Bovids <i>(Family Bovidae)</i>	<input type="checkbox"/> Analytical innovations	<input checked="" type="checkbox"/> Machine learning	
<input type="checkbox"/> Carnivores : Felids <i>(Family Felidae)</i>	<input type="checkbox"/> Ungulates : Deers <i>(Family Cervidae)</i>	<input checked="" type="checkbox"/> Automated pattern recognition	<input type="checkbox"/> Mark-recapture analysis	
<input type="checkbox"/> Carnivores : Hyenas <i>(Family Hyaenidae)</i>	<input type="checkbox"/> Ungulates : Giraffes <i>(Family Giraffidae)</i>	<input type="checkbox"/> Behavioural ecology	<input type="checkbox"/> Morphometrics	
<input type="checkbox"/> Carnivores : Mustelids <i>(Family Mustelidae)</i>	<input type="checkbox"/> Ungulates : Horses <i>(Family Equidae)</i>	<input type="checkbox"/> Camera-trapping	<input type="checkbox"/> Network analysis	
<input type="checkbox"/> Elephants <i>(Family Elephantidae)</i>	<input type="checkbox"/> Multiple taxa <i>(3 or more Families/Orders)</i>	<input type="checkbox"/> Conservation management	<input type="checkbox"/> Photogrammetry	
Marine		<input checked="" type="checkbox"/> Data management	<input type="checkbox"/> Population ecology	
<input checked="" type="checkbox"/> Baleen whales : Right whales <i>(Family Balaenidae)</i>	<input type="checkbox"/> Large toothed whales <i>(Families Delphinidae & Hyperoodontidae)</i>	<input type="checkbox"/> Demographic parameters	<input type="checkbox"/> Site fidelity & Movement	
<input type="checkbox"/> Baleen whales : Rorquals <i>(Family Balaenopteridae)</i>	<input type="checkbox"/> Pinnipeds : True seals <i>(Family Phocidae)</i>	<input type="checkbox"/> Field methodology	<input type="checkbox"/> Social ecology	
<input type="checkbox"/> Carnivores : Bears <i>(Family Ursidae)</i>	<input type="checkbox"/> Porpoises <i>(Family Phocoenidae)</i>	<input type="checkbox"/> Genetic ID	<input checked="" type="checkbox"/> Software/Package development	
<input type="checkbox"/> Carnivores : Mustelids <i>(Family Mustelidae)</i>	<input type="checkbox"/> Sirenians : Manatees <i>(Family Trichechidae)</i>	<input type="checkbox"/> Health conditions	<input type="checkbox"/> Thermal imagery	
<input type="checkbox"/> Dolphins <i>(Family Delphinidae)</i>	<input type="checkbox"/> Multiple taxa <i>(3 or more Families/Orders)</i>	<input type="checkbox"/> Other: <i>(please specify)</i>		

References

- Karczmarski L, Chan SCY, Rubenstein DI, Chui SYS, Cameron EZ (2022a). Individual identification and photographic techniques in mammalian ecological and behavioural research – Part 1: Methods and concepts. *Mammalian Biology* (Special Issue), 102 (3) <https://link.springer.com/journal/42991/volumes-and-issues/102-3>
- Karczmarski L, Chan SCY, Chui SYS, Cameron EZ (2022b). Individual identification and photographic techniques in mammalian ecological and behavioural research – Part 2: Field studies and applications. *Mammalian Biology* (Special Issue), 102 (4) <https://link.springer.com/journal/42991/volumes-and-issues/102-4>