

Automatic recognition of jellyfish with artificial intelligence

July 27 2022



Aequorea victoria. Image credit: Sierra Blakely/Wikipedia.

The jellyfish sighting app, MedusApp, recently incorporated artificial intelligence (AI) to automatically recognize different species of jellyfish. Until now, this app only required users to select the species of jellyfish from a catalog provided; now the user can upload photos and have the species automatically identified before uploading them to the app for publication.

MedusApp, which is freely available in Spanish and English for both Android and iPhone, has been developed by researchers from the University of Alicante (UA) and two computer scientists from the Polytechnic University of Valencia (UPV), in collaboration with the

CIBER of Diseases (CIBERES) and the Immunoallergy Laboratory of the Fundación Jiménez Díaz Health Research Institute (IIS-FJD). Since its launch in 2018, the platform has amassed more than 100,000 downloads and 6,000 [jellyfish](#) sightings. "Thanks to the collaboration of citizens and their sightings, we have been able to train the AI software with several thousand real photos to generate a [mathematical model](#) with a total of 25 species, that will ultimately help the app automatically recognize the most common jellyfish," a novelty update that the programmers from the UPV Eduardo Blasco and Ramón Palacios have highlighted.

Other news

In addition to the automatic recognition of jellyfish thanks to AI, the app has been incorporating other novelties such as the "no sightings" option, to report whether a beach is free of jellyfish or furthermore, a function that allows sightings to be made via transects, "This new option, intended for sailors, divers or fishermen, allows you to include an image of possible jellyfish sightings that are found during a boat trip," the authors write.

"The application is constantly being improved and is intended to enhance and expand our knowledge of the health effects of jellyfish stings, as well as to better understand aspects of their biology and ecology (spatial and temporal distribution)," explains professor César Bordehore from the department of marine ecology in the UA. The scientific-medical data on the recorded stings, which already exceed 970 reported stings, are managed and analyzed by a multidisciplinary scientific team which is made up of researchers César Bordehore (principal investigator) and Eva S. Fonfría, from the Multidisciplinary Institute for the Study of the Environment (IMEM) and the UA Department, as well as doctors Victoria del Pozo and Mar Fernández Nieto, from the CIBER for Respiratory Diseases (CIBERES) and the Immunoallergy Laboratory-

Jiménez Díaz Foundation Health Research Institute (IIS-FJD).

Another useful feature of the app is an interactive guide on how to proceed in the event of being stung accompanied by the information on the level of danger that different jellyfish pose. "If a sting occurs, the main thing is to remove the remains of the tentacles with tweezers or a plastic card, without rubbing the area, and subsequently proceed to inactivate the stinging cells that could remain on the skin with a mixture of baking soda and seawater. If the species of jellyfish is known, the app then contains more specific medical protocols which can enhance the recovery phase. We always like to highlight that [fresh water](#) (and urine) should never be used because this could worsen the effects of the sting," says Bordehore.

MedusApp has become an open, simple and fast citizen science tool that has already aroused the interest of research teams in Mexico. "Specialists and colleagues who work in centers in Latin America have requested permission to use the app and make use of scientific-medical data," says the UA researcher.

The MedusApp team has developed training videos that are available in [open source](#) to facilitate the use, knowledge, and optimization of all the tools offered by MedusApp. All the information is available through the app and on the web which can be found at: medusapp.net/.

Provided by Universitat Politècnica de València

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