



Pet Facial Recognition Helps Find Lost Cats and Dogs

Animal shelters are using the technology to identify animals and reunite them with their owners

By Elliot M. Kass

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Researchers are using software from PiP the Global Pet Recognition Co. as part of a rabies-eradication program in Tanzania.

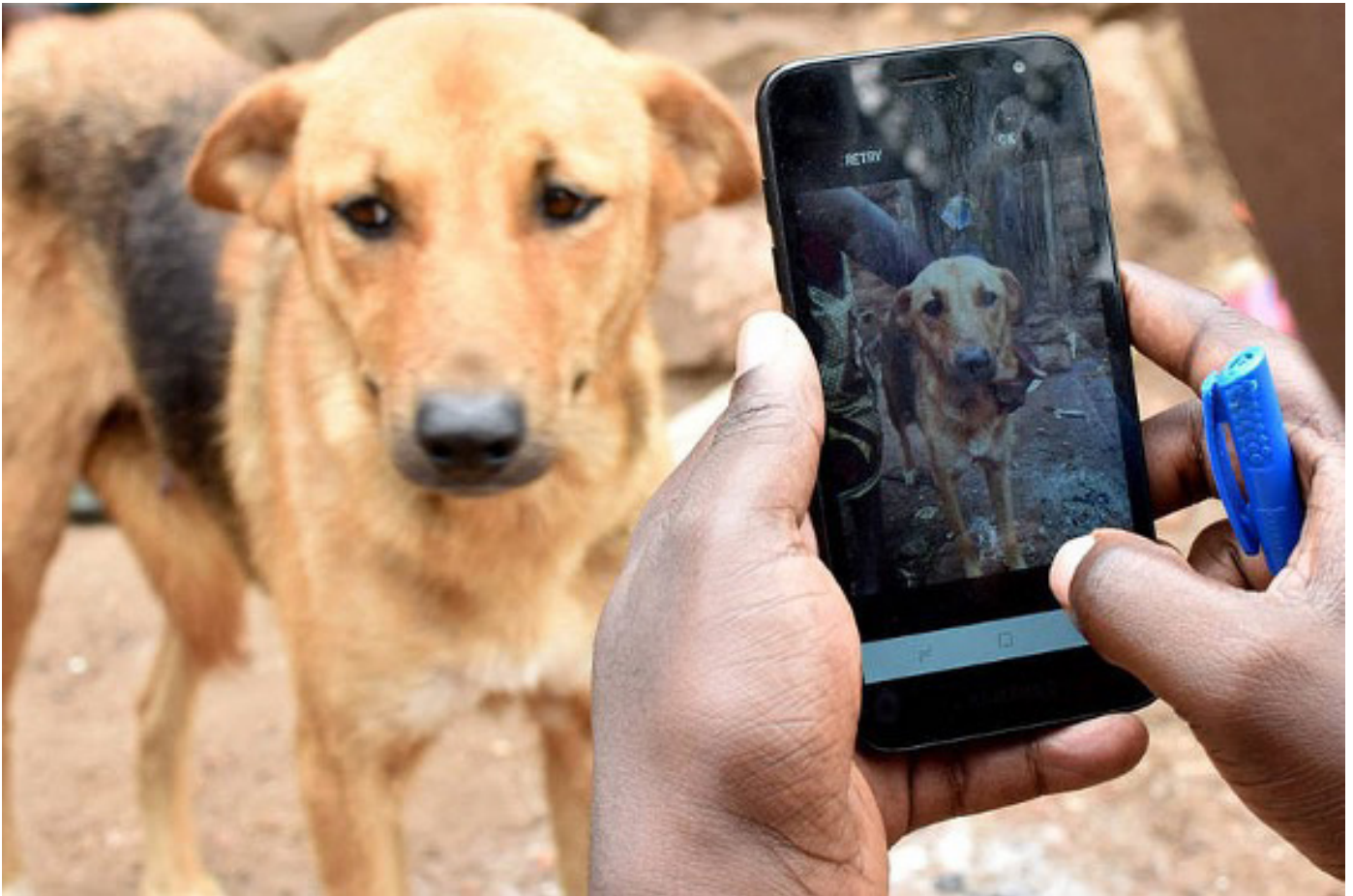
PHOTO: PAUL G. ALLEN SCHOOL FOR GLOBAL ANIMAL HEALTH

Animal shelters around the country have begun using artificial-intelligence apps to identify lost pets and reunite them with their owners.

Similar to the facial-recognition apps that identify people, these applications are helping shelters improve their reunification rates while costing them almost nothing. In many cases, the software is provided free by service organizations such as Finding Rover. To save

further on costs, shelters typically reuse photos of the animals that they took earlier.

Finding Rover, the most popular of these apps, was developed in cooperation with researchers at the University of Utah. As of last year, more than 700,000 pet photos had been posted to its database and more than 700 shelters nationwide had adopted the program.



Animal-recognition software is more sophisticated than its counterpart for humans, because dog and cat faces show a lot more variety than human ones do.

PHOTO: PAUL G. ALLEN SCHOOL FOR GLOBAL ANIMAL HEALTH

Other animal-recognition applications include the PiP app from Vancouver-based PiP the Global Pet Recognition Co.; software from the Chinese AI startup Megvii that uses dogs' "nose prints" to identify the animals; and a variety of programs developed to track animals in the wild, such as the lion facial-recognition app developed by Lion Guardians, an organization of conservationists based in Kenya.

The Linda McNatt Animal Care and Adoption Center of Denton, Texas, started using Finding Rover in December and 10% of its "reclaims" now take place through the app, said Randi Weinberg, a manager there.

The shelter, which cares for more than 5,000 animals a year, is one of about a dozen in the Dallas-Fort Worth area to have rolled out the app, Ms. Weinberg said.

The app is especially useful for identifying lost cats. People are usually quick to report a missing dog, said Katie Lisnik, executive director of the Greater Androscoggin Humane Society in Lewiston, Maine. "But people don't look for cats early on. They're used to them wandering off and disappearing for longer

lengths of time," she said.

The Maine shelter, which cares for about 3,500 animals a year, began using Finding Rover in September. Before deploying the app, Greater Androscoggin had a reunification rate for dogs approaching 100%. But its success rate for cats was much lower—only around 5%. The shelter doesn't have reunification numbers yet showing how much the app is helping.

Despite its ease of use, animal-recognition software is more sophisticated than its counterpart for humans, said Philip Rooyackers, PiP's founder and executive.

"With people, the basic shape and location of their facial features are always the same," he said. "That isn't true for a cat and especially a dog." Unlike with people, the ears on a cat can be closer together or farther apart, and the nose on a dog like a lab has a completely different shape than that of a pug.

To compensate for these differences, PiP spent two years developing a multilevel, hierarchical system that allows it to distinguish among different types of



Philip Rooyakkers, PiP's founder and executive.

PHOTO: PIP THE GLOBAL PET RECOGNITION CO.

animals. For dogs and cats, Mr. Rooyakkers said, the PiP software correctly identifies an animal more than 90% of the time.

Another use: rabies shots

Scientists and researchers are also benefiting from animal-recognition software's increasing accuracy. Researchers affiliated with Washington State University's Paul G. Allen School for Global Animal Health are using PiP's software as part of a rabies-eradication program in Tanzania.

The program, undertaken by the Tanzanian government in conjunction with the university, is funded by the National Institutes of Health and pharmaceutical maker MSD Animal Health, a division of New Jersey-based Merck & Co. The aim is to administer the first mass dog vaccination against rabies in Tanzania's Mara region. According to the World Health Organization, rabies kills around 59,000 people each year, mostly in Africa and Asia, and more than 99% of the cases are due to rabid dogs.

The scale of the project meant that the Washington State researchers needed to replace the microchips they were using to tag dogs that had already been vaccinated—at \$1 per chip, they were too costly. They turned to the PiP software, which runs on standard smartphones that are widely used in Tanzania.

Field trials of the AI application are just starting, but the initial results are promising, said Felix Lankester, an assistant professor at the Allen School and the director of the Rabies Free Tanzania program.

"So far so good," Mr. Lankester said. "The trick is getting a nice photo of the dog's face, including the eyes, nose and mouth, and the village dogs we work with are not used to being handled. So it's a challenge to get them to sit still long enough for a photo to be taken. But the vaccinators do seem to manage somehow."

Original article at go.vetmed.wsu.edu/WSJ-PetFacialRecognition

Read more about our Rabies research at go.vetmed.wsu.edu/rabies



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