

Dogs get the Hollywood treatment to make animal animations more realistic

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Motion data from the dogs will help create more realistic animal animations for games and films. Credit: University of Bath

Researchers are creating a library of movement data from different dog breeds, to make animal animations in films and video games more realistic.

Films such as the Planet of the Apes used motion capture techniques extensively to transform their human actors into apes, however this process doesn't work well for true four-legged [animals](#).

Now computer scientists from the Centre for Analysis of Motion, Entertainment Research & Applications (CAMERA), at the University of Bath, are looking to automate this process.

Two legs to four

They are developing a new technique that will be able to use the movements of a two-legged human actor to drive a four-legged animal character, to make it move in a more realistic way.

The team has invited canine residents from local neighbours Bath Cats and Dogs Home to their studio to help collect the motion capture data.

Head of Studio at CAMERA, Martin Parsons, said: "At the moment, actors have to walk around on all fours, and the computer software changes them into an animal.

"What we want to do is to look at the movements of the human actor and then use a kind of translator to look at a library of real animal data to make the character on the screen move in a realistic way.

"It works a bit like a puppeteer, with the actor using their whole body to drive the animal avatar.

"We're really grateful to the Bath Cats and Dogs Home for letting us work with their dogs.

"It is fantastic to be working with an important local charity just down the road from the University and we're delighted to be making a donation to contribute towards the valuable work they do."

Hollywood treatment

The dogs will be wearing coats with reflective markers fixed onto them. Infrared light hitting the reflective markers is sensed by special cameras that are placed around the edge of the studio, which can then record the 3-D position of the marker. This information can be used to reconstruct the movement of the dogs on the computer screen.

The dogs will play on an agility course set up in the studio with their Animal Carers from the Home and an animal behavioural assistant on hand to help them interact, overcome any [camera](#) shyness and of course have fun.

Simon Lynn, Head of Animal Operations at Bath Cats and Dogs Home, said: "This is such an innovative project for our dogs and team to be a part of. It will be so beneficial for the dogs taking part as it is great socialisation for them - meeting new people and seeing different sights and sounds.



Cameras in the studio detect light reflected from markers worn by the dogs, so researchers can capture the movement accurately. Credit: University of Bath

"Kennel life can become repetitive so we're always looking at ways to add enrichment to our dog's lives whilst they're waiting to be adopted and a trip to the CAMERA team at the University of Bath definitely fits the bill.

"Their carers are with them at all times so we can check they're relaxed and happy but we're sure they are going to love it. Not only that but the donation towards Bath Cats and Dogs Home's work will help these [dogs](#) find new homes and help us to save many other unwanted animals in our area."

They will be using lots of different breeds to study the different gaits of the animals, and hope to expand the project to use cats next year.

As well as informing the research at CAMERA, the data collected during the shoots will be used as part of collaborative research and developments projects with industrial partners to drive the next generation of tools and processes across the visual effects and games industries.

CAMERA is a £5 million research centre funded by the Engineering and Physical Sciences Research Council (EPSRC) and the Arts and Humanities Research Council (AHRC) at the University of Bath. CAMERA will create advanced motion tracking technologies for use in the entertainment industry, to enhance training and athlete performance, and to help develop assistive technologies.

Provided by University of Bath

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