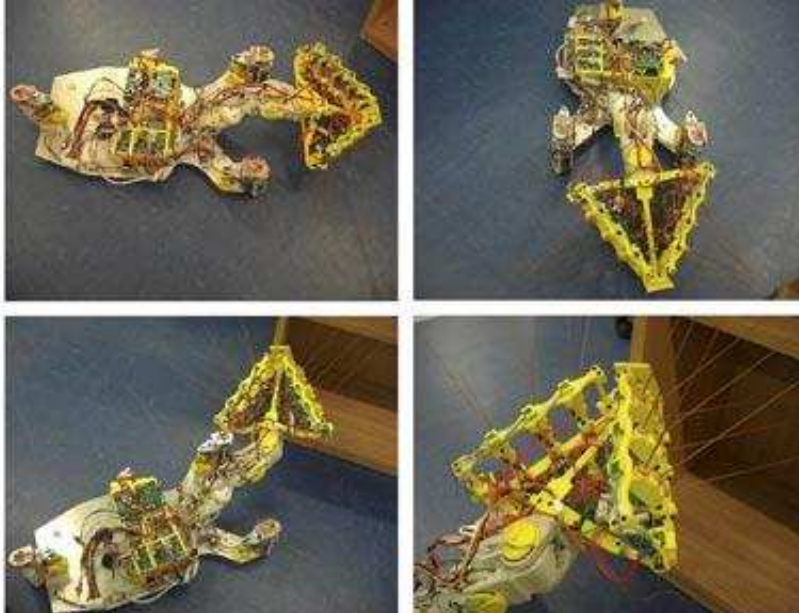


Robotic rat can search for disaster survivors using whiskers

Scientists have invented a robotic rat that can be used to search through rubble and burning buildings for survivors using only its whiskers.



Dr Tony Pipe, deputy director of the Bristol Robotics Laboratory, believes 'Scratchbot' could revolutionise the way use robotics in search and rescue missions Photo: SWNS

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Researchers from the University of Bristol and the University of Sheffield have spent six years researching and designing the Scratchbot.

The robotic rat hunts through pitch black or smoke-filled rooms by relying solely on touch sensors located on its set of whiskers.

The COST project was inspired by the use of touch in the animal kingdom – specifically how rats explore their environments using whiskers in poorly-lit places.

The rodents can determine the texture, position and shape of objects using rhythmic sweeping movements.

Dr Tony Pipe, deputy director of the Bristol Robotics Laboratory, believes 'Scratchbot' could revolutionise the way use robotics in search and rescue missions.

"Future applications for this technology could include using robots underground, under the sea, or in extremely dusty conditions, where vision is often a seriously compromised sensory modality.

"Here, whisker technology could be used to sense objects and manoeuvre in a difficult

environment.

"In a smoke filled room for example, a robot like this could help with a rescue operation by locating survivors of a fire.

"This research builds on previous work we have done on whisker sensing," he said.

The team, made up of researchers from the Bristol Robotics Laboratory, the University of Sheffield and the University of Bristol, have spent six years creating the Scratchbot using £500,000 in EU funding.

They then developed a way to build carbon fibre whiskers that mimic rats in curvature and taper, but are four times the size.

The nine 'whiskers' are arranged in a group of nine on each side of a robotic head and move up and down six times a second using high-powered motors to mimic muscles in rat's cheeks.

A neck is attached to a robotic platform with three independent drive units that can drive the Scratchbot in any direction.

The invention was unveiled in front of 60 international scientists at the University of Sheffield on Tuesday.

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