

Bat vision system could help protect buildings

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Vital data on bat behaviour is being analysed by a computer vision system developed by the University of Lincoln and Lincolnshire Bat Group.

The technique, which uses a high-speed camera, filming in infra-red, is being developed by academics at the University of Lincoln, UK. It monitors wing beat frequency which might enable the Group to classify species of bat.

Being able to identify individual species would provide extra information on how to effectively manage and protect the buildings they inhabit.

Bat populations frequently roost in buildings, such as churches, which can cause problems in terms of corrosive faeces damaging the structure and valuable artefacts.

As a highly protected species, conservation groups are looking for ways in which to control colonies in a non-invasive way.

PhD student John Atanbori and Dr Patrick Dickinson, from the School of Computer Science, developed the system which has been used by the Lincolnshire Bat Group to collect data on a colony which have been rescued and are being re-habilitated.

John said: "This [computer vision](#) technique is able to monitor repeated

patterns in wing beat frequency. As specie type can be determined from the way a bat moves its wings this provides vital information not only for conservationists studying the animals, but also building managers and professional ecologists. Wing beat frequency is just one feature that could be monitored to determine species, but the project hopes to eventually encompass other features such as the shape and weight of the bat to provide a faster, more detailed classification. We also hope to transfer this research to birds in the future."

Data is being collected by the Lincolnshire Bat Group, a local arm of the Bat Conservation Trust.

Dr Peter Cowling, from the Group, which is part of the Bat Conservation Trust, said: "To conserve bats we need to establish the size of current [bat populations](#), working out which bats are where and how they are responding to the threats and pressures they face. By monitoring bats we can discover the factors that are important for their survival. We can identify which [species](#) need action now, what areas are important for bats and what threats [bats](#) face."

John presented his research at the National Bat Conference at the University of Warwick in September.

He also presented at CAIP 2013 – an international conference devoted to all aspects of computer vision, image analysis and processing, pattern and recognition.

Provided by University of Lincoln

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