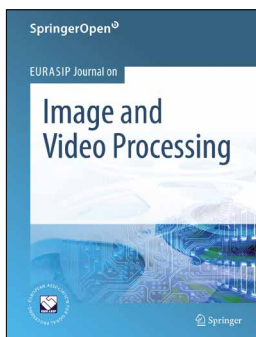# EURASIP Journal on Image and Video Processing

Special Issue on

Animal and Insect Behaviour Understanding in Image Sequences

CALL FOR PAPERS

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EURASIP Journal on

Image and Video Processing

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This special issue aims at reporting on the most recent approaches and tools for the identification, interpretation and description of animal and insect behaviour in image sequences. It specially focuses on the interactions between (i) computer vision theories and methods, (ii) artificial intelligence techniques for the high-level analysis of animal and insect behaviours and (iii) multimedia semantics methods for indexing and retrieval of animal and insect behaviour detected in images and videos.

With the widespread use of imaging devices, the study of the behaviour by exploiting visual data has become very popular. The visual information gathered from image sequences is extremely useful to understand the behaviour of the different objects in the scene, as well as how they interact each other or with the surrounding environment. However, whilst a large number of video analysis techniques have been developed specifically for investigating events and behaviours in human-centered applications, very little attention has been paid to the understanding of other live organisms, such as animals and insects, although huge amount of video data are continuously recorded; e.g. the EcoGrid project[1] or the wide range of nest cams[2] continuously monitor, respectively, underwater reef and birds nests (there exist also variants focusing on wolves, badgers, foxes etc.). Moreover, the few existing approaches deal only with controlled environments (e.g. labs, cages, etc.) and as such they cannot be used in real-life applications. The automated analysis of video data in real-life environments poses several challenges for computer vision researchers because of the uncontrolled scene conditions and the nature of the targets to be analysed whose 3D motion tends to be erratic, with sudden direction and speed variations, and appearance and non-rigid shape can undergo quick changes. Computer Vision tools able to analyse those complex environments are of great interest to biologists in their strive towards analyzing the natural environment, promoting its preservation, and understanding the behaviour and interactions of the living organisms (in- sects, animals, etc.) that are part of it.

We invite authors to contribute with high quality paper that will stimulate the research community on the use image and video analysis methods to be applied in real-life environments for animal and insect behaviour monitoring and understanding. Potential topics include, but are not limited to:

► Living organisms detection, tracking, classification and recognition in image sequences
► Animals and Insects dynamic shape analysis
► Visual surveillance and Event Detection in Ecological Applications
► Stereo Vision and Structure from motion of living organisms
► Event and Activity Recognition in Ecological Videostreams
► Animal and insect behaviour analysis and articulated models
► Animal and insect motion and trajectory analysis

1   http://ecogrid.nchc.org.tw/
2   http://watch.birds.cornell.edu/nestcams/home/index

► High-level behaviour recognition and understanding
► Semantic Region Identification in animal and insect populated scenarios
► Categorization and Natural Scene Understanding
► Natural Scene and Object-Scene Interaction Understanding
► Ontologies and semantic annotation of animal and insect motion in video content

Submission Instructions:

Before submission authors should carefully read over the Instructions for Authors, which are located at jivp.eurasipjournals.com/authors/instructions. Prospective authors should submit an electronic copy of their complete manuscript through the SpringerOpen submission system at jivp.eurasipjournals.com/manuscript according to the submission schedule. They should choose the correct Special Issue in the "sections" box upon submitting. In addition, they should specify the manuscript as a submission to the "Special Issue on Animal and Insect Behaviour Understanding in Image Sequences" in the cover letter. All submissions will undergo initial screening by the Guest Editors for fit to the theme of the Special Issue and prospects for successfully negotiating the review process.

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