

## **Animal monitoring using species recognition software for processing of camera trap footage**

Species monitoring is an essential activity in conservation for assessing species status and the effectiveness of management interventions. Recent developments in sensor technology, such as camera trapping have changed the way how monitoring data can be collected. Camera trapping is frequently used to derive species occupancy, density and abundance. However, even with a small number of camera traps large amounts of video clips quickly accumulate and pose the challenge of processing footage for e.g. occurrence, density and abundance estimation. If done manually, this can be a very time consuming and tedious process. In an effort to accelerate the processing of camera trap footage, efforts are made to identify species automatically based on deep learning. One recently developed software is 'Zamba' (<http://zamba.drivendata.org/>) which has been trained to recognize up to 23 African mammal species and species groups, including elephants, gorillas and chimpanzee (<https://www.chimpandsee.org/#/classify>). The aim of the envisioned project is to first compare manually processed and Zamba-processed camera trap datasets with regard to misclassification and accuracy. Very large camera trap datasets in differing quality and from different sites across tropical Africa are already available for this study ([http://panafrican.eva.mpg.de/english/where\\_we\\_work.php](http://panafrican.eva.mpg.de/english/where_we_work.php)). In a second step statistical approaches will be used to derive meaningful biological measures. This will include the occupancy modeling or alternatively the distance sampling framework for deriving species occupancy probability and abundance, respectively. Previous knowledge of 'R' is advantageous for this project as is knowledge in statistical modeling.

## **References**

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