aMOBY - Acoustic Monitoring of Biodiversity

Abstract

The aMOBY project will use results from mathematical harmonic analysis combined with machine learning to acoustically monitor biodiversity. Biodiversity refers to the variety and variability of life on Earth, a diversity that is severely endangered due to human-made threats like habitat destruction, introduction of invasive species, over-population and over-harvesting, and of course climate change resulting from pollution of the atmosphere. Biodiversity monitoring is the repeated observation or measurement of biological diversity to diagnose and quantify its status and changes. A great challenge for monitoring of biodiversity lies in the sheer amount of data which clearly requires a high degree of automation to work on a grand scale. In the aMOBY project we will transfer results from an ongoing project on automatic semantic annotation of music to the bioacoustic domain. Building on a recently achieved first place in a bird detection challenge we will (i) extend our results from detection to classification and from bird to whale calls, (ii) build an online demonstrator to showcase our expanded expertise, (iii) actively address governmental and non-governmental organizations concerned with biodiversity monitoring as a new target group for future collaboration. The aMOBY project will allow both participating research groups (Austrian Research Institute for Artificial Intelligence - OFAI, Numerical Harmonic Analysis Group - NuHAG) to transfer their jointly acquired knowledge on automatic annotation of acoustic signals to a whole new field of application with potentially large societal and economic impact.
Keywords:
signal processing, machine learning, biology, numerical mathematics

Principal Investigator:	Arthur Flexer
Institution:	Oesterreichische Studiengesellschaft fuer Kybernetik
Further collaborators:	Monika Dörfler (University of Vienna)

Status: Completed (01.09.2017 - 31.08.2018) 12 months   Funding volume: EUR 49,400

Further links about the involved persons and regarding the project you can find at
https://archiv.wwtf.at/programmes/new_exciting_transfer_projects/NXT17-004