

Job ID: ISF038DOC224

The Acoustics Research Institute ([ARI](#)), an interdisciplinary research institution of the Austrian Academy of Sciences ([OeAW](#)), Austria's leading non-university research facility, is offering a

## PHD STUDENT POSITION (F/M/X)

(part-time / 30h per week)

This position is associated with the WWTF project "ANIML – Analysis of Nonhuman Intercommunication with Machine Learning", in which state-of-the-art signal processing and machine learning are combined to establish an efficient workflow for the recording, analysis, and study of animal vocalizations in challenging lab environments. In particular, the project is concerned with the situation where the animals of interest are confined to a known area, but many animals may vocalize simultaneously. Multimodal recordings will be conducted in ARI's budgerigar laboratory, to be separated by source (animal), automatically pre-segmented and -classified with methods developed and implemented by ANIML's signal processing team, in close cooperation with the biology team, which is responsible for further analysis of the signals and their use in behavioral experiments.

As a member of the signal processing team, the successful candidate will cooperate with the CoPIs Dr. Günther Koliander and Dr. Nicki Holighaus to develop the signal processing and segmentation pipeline planned for the project. They will additionally have the chance to contribute to the design of the physical recording setup (microphone array(s) and cameras) and to cooperate with the biology team to jointly tailor the preprocessing to their needs.

### Your tasks:

- Use state-of-the-art methods from signal processing and machine learning for audio (and video) to develop a processing scheme capable of creating a corpus of cleaned, high-quality bird call recordings with various meta-data from the multi-modal, multi-channel recordings that will be acquired in the ANIML project
- Cooperate with ANIML's biology and signal processing team on various tasks related to the acquisition and processing of said animal recordings
- Communication of scientific results in scientific publications and at scientific meetings
- No teaching duties

### Your profile:

- A Master's degree (or equivalent) in a discipline related to machine learning and/or (audio) signal processing
- Excellent knowledge and understanding of written and oral English
- Prior experience with video and/or audio processing, in particular in a multi-channel setting, will be beneficial
- Willingness to work in a team

The position is limited to 4 years. The starting date is planned for June 01<sup>st</sup>, 2024. However, a later starting date can be negotiated. The successful candidate will enroll at TU Wien (Technische Universität Wien) in the PhD program of the Faculty of Electrical Engineering or the Faculty of Computer Science. They will be supervised by the CoPIs Dr. Günther Koliander and Dr. Nicki Holighaus in cooperation with an additional supervisor at the respective faculty of TU Wien. The annual gross salary is € 37.773,33, according to the OeAW's collective agreement.

Candidates should send a CV, copies of relevant certificates, and a brief statement describing your motivation, personal qualification, and research interests by e-mail to [nicki.holighaus@oeaw.ac.at](mailto:nicki.holighaus@oeaw.ac.at), **no later than April 30<sup>th</sup>, 2024**. He can also be contacted for informal inquiries and questions.

*The Austrian Academy of Sciences (OeAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. Individuals from underrepresented groups are particularly encouraged to apply.*