Job ID: ISF081PD224

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

POSTDOC POSITION (F/M/X)

(full-time, 40h per week)

The position is assigned to a WWTF project entitled "Decoding elephant communication with AI" led by Dr. Angela Stoeger, Priv.Doz., Dr. Peter Balazs and Prof. Matthias Zeppelzauer, FH St. Pölten.

The central research question investigated in this project is: Can we leverage AI to decode elephant communication from large-scale data? Elephants are a socially and spatially flexible species and sound is a crucial mode of communication. Although it is known that elephant calls convey biologically significant information, the diversity of their calls make it difficult to decode and interpret their communication pattern. AI offers potential to analyze communication patterns that can be used to generate novel hypotheses about the biological function of acoustical signals, and may ultimately aid in the design of controlled experiments to verify these hypotheses via synthesized signals. Within this project, biologists, application-oriented mathematicians, and experts in machine learning will closely collaborate. The announced position here will focus on elephant communication pattern from a behavioral and bioacoustics angle.

The announced position here is for a Postdoc candidate, in exceptional cases PhD students can be accepted. The applicant will focus on the machine learning aspects of this project, in particular on generative / synthesis approaches for elephant sounds, developing the theory and methods for the application. The work will be done closely together with P. Balazs, the whole project team and a PhD student at ARI focusing more on the biology aspects, and a PhD student at FH St. Pölten focusing more on pattern mining methods. The applicant will aim at analysis and synthesis of elephant sounds, considering elephant sound perception and production.

Your tasks:
- Cooperate and interact closely with the whole team
- Support the 2 PhD students in the project
- Develop the resulting algorithms to be used by the project team, and later by other research groups (reproducible research)
- Communication of scientific results in scientific publications and at scientific meetings
- No teaching duties

Your profile:
- PhD degree (or equivalent) in a discipline related to the topic
- Applicants with experience with generating modelling, invertible neural networks and/or normalizing flows will be ranked higher
- Applicants with experience in the mathematical theory of machine learning and / or signal synthesis will be ranked higher
- Applicants with experience in working in multi-disciplinary teams will be ranked higher

The position is limited to 3 years. The starting date is flexible between September and October 2024. The annual gross salary is € 66.501,40 according to the OeAW's collective agreement.

Candidates should send a CV, copies of relevant certificates, and a brief statement describing motivation, personal qualification, and research interests by e-mail (mentioning Job ID: ISF081PD224) to peter.balazs@oeaw.ac.at who also can be contacted for informal inquiries and questions. The call will stay open until an excellent candidate has been found, the first round of evaluation will start in **August 2024**.

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.

WWW.OEAW.AC.AT/EN/ARI

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