Job ID: ISF031DOC224

The Acoustics Research Institute (ARI) of the Austrian Academy of Sciences (OeAW), Austria's leading non university research facility, undertakes top-level research in various fields relating to acoustics, including mathematical foundations of processing acoustic data. Innovation through synergy is at the heart of ARI's multidisciplinary research philosophy. The institute is offering

PhD Student Position (f/m/x)

(part-time / 30h per week)

This position is associated with the FWF project "DISCO - Discrepancy and universal discretization of continuous frames". The project is concerned with the derivation of sampling and interpolation results for integral transforms associated with (possibly) uncountable dictionaries, so-called continuous frames by employing low discrepancy point sets. The latter are sets of points that are well-distributed in a domain of interest in the sense of discrepancy, and most commonly used in quasi-Monte Carlo integration. As such, the project covers topics ranging from functional analysis, in particular frame theory and sampling theory, to number theory.

As a member of the project team, the successful candidate will cooperate with the PI Dr. Nicki Holighaus, the local project team and the external partners on a subset of project tasks. In particular, their tasks are expected to revolve around the extension of discrepancy theory to spaces of infinite measure and the application of said theory in the context of the discretization of continuous frames.

Your tasks:

- Develop discrepancy measures and study their properties on infinite measure spaces and explore the connection of low discrepancy point sets with sampling and interpolation of continuous frames.
- Cooperate with DISCO's internal and external team members on various project tasks.
- Communication of scientific results in scientific publications and at scientific meetings.
- No teaching duties.

Your profile:

- A Master's degree (or equivalent) in mathematics.
- Prior experience in harmonic analysis, frame theory, discrepancy theory, or number-theoretic methods for the construction of structured point sets will be beneficial.
- Willingness to work in a team.
- Excellent knowledge and understanding of written and oral English.

The position is limited to 3 years, with the possibility of extension to a maximum duration of 4 years. It is available from June 1st, 2024. If necessary, a later starting date can be negotiated. The successful candidate will enroll at the University of Vienna in the PhD program of the Faculty of Mathematics and be supervised by Nicki Holighaus, with a second supervisor at the Faculty of Mathematics.

The annual gross salary is € 37.773,33, according to the collective agreement of the Austrian Academy of Sciences.

Candidates should send a CV, copies of relevant certificates, and a brief statement describing your motivation to join this project, personal qualification, and research interests by e-mail to nicki.holighaus@oeaw.ac.at, **no later than April 30th, 2024**. He can also be contacted for informal inquiries and questions. The first round of evaluation will start in May 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.

WOHLLEBENGASSE 12–14 | 1040 VIENNA, AUSTRIA
T: +43 1 51581-2501, 2502 | F: +43 1 51581-2530 | OFFICE@KFS.OEAW.AC.AT
IBAN: AT541100000262650519 | BIC: BKAUATWW | VAT: ATU37116303