The Signal Processing Group (https://uol.de/en/mediphysics-acoustics/sigproc) of the Department of Medical Physics and Acoustics at the University of Oldenburg, Germany, is seeking to fill the position of a

Marie Skłodowska-Curie Early Stage Researcher (m/f/d) in acoustical signal processing

in the frame of the H2020 MSCA European Training Network SOUNDS. The full-time position is available from **01.07.2021** for 3 years, with a salary according to **TV-L E13**. The position is suitable for part-time employment for personal or family reasons.

The Early Stage Researcher (PhD student) will be embedded in the SOUNDS research and training network, and will carry out applied research in the interdisciplinary field of signal processing, room acoustics, auditory perception, communication networks and machine learning. The research will be executed in an international team of audio signal processing researchers and will involve several visits to internationally renowned research labs in Europe.

The **SOUNDS European Training Network (ETN)** revolves around a new and promising paradigm coined as Service-Oriented, Ubiquitous, Network-Driven Sound. Inspired by the ubiquity of mobile and wearable devices capable of capturing, processing, and reproducing sound, the SOUNDS ETN aims to bring audio technology to a new level by exploiting network-enabled cooperation between devices. We envision the next generation of audio devices to be capable of providing enhanced hearing assistance, creating immersive audio experience, enabling advanced voice control and much more, by seamlessly exchanging signals and parameter settings, and spatially analyzing and reproducing sound jointly with other nearby audio devices and infrastructure. It is anticipated that this paradigm will eventually result in an entirely new way of designing and using audio technology by considering audio as a service, enabled through shared infrastructure.

In the envisaged PhD project the main objective is to develop and evaluate **signal processing algorithms for speech enhancement using acoustic sensor networks**. Acoustic sensor networks consist of several spatially distributed microphones (e.g., smart speakers, headsets with external microphones) and provide a substantial advantage over traditional microphone arrays, since the probability that a subset of microphones is closer to the desired speech source(s) is substantially increased. More specifically, the PhD project will focus on combining model-based and machine-learning-based approaches for joint dereverberation and noise reduction, aiming at improving speech quality and intelligibility.

Responsibilities of the Early Stage Researcher

- carry out applied research on acoustical signal processing, involving algorithm design, implementation, and experimental validation;
- monitor the work plan of his/her individual research project and make sure that milestones are achieved and deliverables are finalized in a timely manner;
- actively participate in research meetings with the other SOUNDS ETN researchers;
- take part in the research meetings and seminars at the Department of Medical Physics and Acoustics;
- enroll in a doctoral training program at the Graduate School Science, Medicine and Technology of the University of Oldenburg.

Profile

- Candidates are required to have an academic university degree (Master or equivalent) in electrical engineering, computer science, engineering acoustics or a related discipline, excellent

grades and a solid scientific background in at least two of the following fields: speech and audio signal processing, acoustics, machine learning. Candidates who are in the final phase of their Master studies are equally encouraged to apply, and should mention their expected graduation date.

- Candidates must satisfy the eligibility conditions for MSCA Early Stage Researchers, i.e., they must have obtained their Master degree in the past 4 years and must not have resided or carried out their main activity (work, studies, etc.) in Germany for more than 12 months in the past 3 years. Applications of candidates not fulfilling these eligibility conditions will not be considered.
- Familiarity with scientific tools and programming languages (e.g., Matlab, python) as well as excellent English language skills (both oral and written) are required.
- Experience with speech enhancement algorithms and machine-learning-based methods for audio processing is beneficial.

Offer

- A prestigious three-year MSCA Fellowship with a competitive salary.
- A strong involvement in a European research project with high international visibility.
- A high-level and exciting international research environment.
- A thorough scientific education in the frame of a doctoral training program.
- The possibility to participate in local as well as international courses, workshops and conferences.
- The possibility to perform research visits to internationally renowned research labs in Europe.

The Carl von Ossietzky Universität Oldenburg is dedicated to increasing the percentage of women in science. Therefore, equally qualified female candidates will be given preference. Applicants with disabilities will be preferentially considered in case of equal qualification.

To apply for this position please send your application (**ref. SP211**), including a letter of motivation with a statement of skills and research interests (max. 1 page), curriculum vitae, and a copy of the university diplomas and transcripts, to Carl von Ossietzky Universität Oldenburg, Fakultät VI, Abt. Signalverarbeitung, Prof. Dr. Simon Doclo, 26111 Oldenburg, Germany, or electronically to simon.doclo@uni-oldenburg.de. Application by email is preferred. **The application deadline is 15.03.2021.**

The SOUNDS ETN strongly values research integrity, actively supports open access and reproducible research, and strives for diversity and gender balance in its entire research and training program. The SOUNDS ETN adheres to The European Charter for Researchers and The Code of Conduct for the Recruitment of Researchers.

A privacy notice:

Please be informed that we will process personal data collected from you in response to this vacancy, such as your name, photo, address, email address, or personal data contained in your curriculum vitae, recommendation letter or other documents submitted by you in response to this vacancy for recruitment and selection and audit purposes.

You have the following rights in relation to our processing of your personal data:

- *Right of access: you can request access to your personal data, i.e. the right to get an overview of your personal data that we process.*

- *Right to rectification: you can request correction of inaccurate data or completion of incomplete data.*
- *Right to erasure: you have the right to ask us to erase your personal data in certain circumstances.*
- *Right to restriction of processing: you have the right to ask us to restrict the processing of your personal data in certain circumstances.*
- *Right to object: you have the right to object to the processing of your personal data in certain circumstances.*
  In case you object to the processing of your data necessary for recruitment and selection, please be aware that no contractual relation is possible and we will not be able to consider your application.

- *Right to data portability: you have the right to ask that we transfer the personal data you provided us to another organization, or to you, in certain circumstances.*