

At Helmut Schmidt University / University of the Federal Armed Forces Hamburg (HSU/UniBw H), Faculty of Electrical Engineering, Professorship for Radio-Frequency Engineering and Photonic (Prof. Dr.-Ing. Fickenscher), a position is **available from the next possible date** for a

### **Research Assistant (m/f/d)**

**(salary group 13 TVöD [Collective agreement for the public service]; 39 hours per week)**

for a limited period of 3 years.

The scientific work is carried out as part of the third-party funded research project "SAS under variable environmental conditions".

In contrast to conventional side-scan sonar, modern synthetic aperture sonar (SAS) technology offers resolution independent of distance. The theoretical diffraction-limited resolution of this technique can be achieved when the autonomous underwater vehicle (AUV) with the sensor payload moves in a circular path (circular SAS, CSAS) around the region to be imaged.

The aim of this third-party funded research project is to enable well focused SAS imaging under variable environmental conditions, such as a depth-dependent sound velocity profile, as well as with complex bathymetry. The key challenge is to increase the accuracy of data-driven trajectory estimation with improved Displaced Phase Center Antenna (DPCA) methods or autofocus algorithms. The project partner, the Bundeswehr Technical Center for Ships and Naval Weapons, Maritime Technology and Research (WTD 71), provides the experimental capabilities including AUV/SAS hardware and data.

### **Responsibilities:**

- Signal processing for synthetic aperture sonar
- Possibility of further academic qualification (e.g. doctorate or habilitation)
- Carrying out general administrative work as well as academic activities in academic self-administration

### **Qualification requirements:**

- A completed university degree [Diplom (univ.) or Master] in the field of electrical engineering, information technology, communications engineering, physics or a related discipline
- In-depth knowledge of digital signal processing
- Proficiency in a programming language (Python, MatLab or C++)

**Furthermore desired:**

- Foreign language skills in English with a level of proficiency corresponding to at least level B2 of the Common European Framework of Reference for Languages
- Enthusiasm for research in an international team
- Interest in a sophisticated application of digital signal processing for (hydro-)acoustics

**Features of this position:**

- Capital-forming benefits
- Annual bonus payment
- Company pension scheme
- Flexible working hours
- DeutschlandJobTicket with employer subsidy if the necessary requirements are met
- Possibility of claiming a childcare place in a daycare centre close to the campus if the necessary preconditions are met
- You will benefit from targeted personnel development and an extensive range of further training and education opportunities.
- Budget-friendly meals in the campus canteen with three meals a day
- You have the opportunity to participate in workplace health promotion offers (for more information, see: [www.hsu-hh.de/bgm/](http://www.hsu-hh.de/bgm/)).
- Free parking on the campus grounds
- Possibility of using the Bundeswehr's own car-sharing service (for more information, go to: [www.bwcarsharing.de](http://www.bwcarsharing.de)).

For questions related to scientific or technical aspects, please contact Prof. Dr.-Ing. Fickenscher, Tel.: 040/6541-2770 or by e-mail: [tfi@hsu-hh.de](mailto:tfi@hsu-hh.de).

The employment is based on the TVöD in conjunction with the Wissenschaftszeitvertragsgesetz [German Act on Fixed-Term Scientific Contracts]. In principle, the activities correspond to pay group 13 (E13). Classification up to pay group 13 of the TVöD shall be made in accordance with § 12 of the TVöD with regard to the activities to be performed on a more than temporary basis and the fulfilment of the personal or collective agreement requirements (job characteristics).

Part-time employment is possible.

The Federal Armed Forces promotes professional equality between women and men and therefore particularly welcomes applications from women.

In accordance with the Sozialgesetzbuch IX [Social Code Book IX] and the Disability Equality Act, we expressly welcome applications from severely disabled persons; the fulfilment of the requirements for the advertisement will be considered on an individual basis.

More information about the university and the professorship can be found at:

[www.hsu-hh.de](http://www.hsu-hh.de) and [www.hsu-hh.de/hft/en/](http://www.hsu-hh.de/hft/en/).

Please send your application with the usual documents exclusively in electronic form (pdf file), quoting the reference number **ET-0724**, **by 15.04.2024** to:

[personalabteilung@hsu-hh.de](mailto:personalabteilung@hsu-hh.de).

Note:

Information on data protection in the application process can be found on the website [www.hsu-hh.de](http://www.hsu-hh.de) under the heading "Universität - Karriere - Datenschutzinformationen".

Applications without reference number will not be considered and will be deleted immediately for data protection reasons.

