HELMUT SCHMIDT UNIVERSITÄT
Universität der Bundeswehr Hamburg

At Helmut Schmidt University / University of the Federal Armed Forces Hamburg (HSU/UniBw H), Faculty of electrical engineering, Chair of Signal Processing for Medical Applications (Univ.-Prof. Dr.-Ing. Madhu), a position is **available at the next possible date** of 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 2 years.

The professorship was recently established and covers a broad spectrum of research into the development and support of intelligent, interpretable assistance systems in healthcare. The thematic focus of the professorship is divided into the following three pillars:

- Algorithms for audio and speech enhancement in communication and assistance systems;
- Multimodal signal analysis and modelling for diagnostic and therapeutic applications, including sensor and information fusion, such as the integration of EEG and EMG signals for brain-computer interfaces (BCI), and audiovisual generative models for enhancement, simplification and summarisation;
- Analytics and representation learning as a methodological foundation for interpretable Artificial Intelligence (AI) and Machine Learning (ML), enabling the transparent and application-specific adaptation of computational models

Responsibilities:

- Independent research activities on the following topics:
  Combinations of generative and predictive models for speech enhancement; the use of spatial information from compact microphone arrays in combination with video to improve (acoustically heavily) noisy audio signals; Scaling the developed models for low-latency applications and for inference on edge devices;
  Incorporation of a priori information (e.g. via additional sensors, domain knowledge, etc.) to create improved and interpretable models
- Development of prototypes and demonstrator platforms to clearly illustrate the progress achieved at national and international events and on the Internet
- Assistance in teaching to the extent of basically 3,0 trimester hours per week
- 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 electrical engineering, computer science, biomedical engineering or a related field
- Excellent knowledge of classical and statistical signal processing, as well as expertise in the relevant mathematical methods (linear algebra, analysis, optimisation)

Desirable requirements:

- Knowledge of foreign language in English with a proficiency level that corresponds at least to the language level C1 of the Common European Framework of Reference for Languages
- A curious mindset, practical approach to work and the perseverance to solve complex problems
- Experience with real-time systems and programming
- Experience with deep learning frameworks (e.g. PyTorch, Keras)
- A keen interest in scientific work and the ability to teach

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/).
- Free parking on the campus grounds
- Possibility of using the Bundeswehr's own car-sharing service (for more information, go to: www.bwcarsharing.de).

For questions related to scientific or technical aspects, please contact Univ.-Prof. Dr.-Ing. Madhu; Tel.: 040/6541-2761 or by e-mail: sigma_mst@hsu.hamburg.

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.
The German Armed Forces supports the goals of the National Integration Plan and welcomes applications from people with a migrant background.

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

www.hsu-hh.de and www.hsu-hh.de/ant.

Please send your application with the usual documents exclusively in electronic form (pdf file), quoting the reference number **ET-0826**, **by 30.07.2026** to:

personalabteilung@hsu-hh.de.

Note:
Information on data protection in the application process can be found on the website 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.

FAMILIE IN DER HOCHSCHULE

Zertifikat seit 2023
audit familiengerechte hochschule