Technische Universität Berlin

Research Assistant - salary grade E13 TV-L Berliner Hochschulen

part-time employment may be possible

Faculty IV - Electrical Engineering and Computer Science, Institute of Energy and Automation Technology / Qualitiy and Usability Lab/Electronic Systems of Medical Engineering
Reference number: IV-347/25 (starting at the earliest possible / for 26 months / closing date for applications 24/10/25)

Your responsibility:

The doctoral researcher will develop and validate both subjective and objective evaluation methods to quantify how anonymisation affects the perception and usability of speech. Subjective methods will include listening tests designed to measure intelligibility and perceived listening effort, while objective metrics will be derived from the uncertainty measures of a state-of-the-art automatic speech recognition (ASR) system. Together, these methods will offer a comprehensive view of how privacy transformations impact real-world usability.
In developing these methods within the scope of the PSST project (The project is an MSCA Doctoral Network - Joint Doctorates program), overall, the student will
1- design methods for predicting speech intelligibility (SI) and listening effort (LE) through internal confidence metrics of ASR systems, such as dispersion, entropy or likelihood ratios between best and true paths,
2- design a subjective methodology for quantifying subjective QoE and UE in terms mainly of intelligibility and listening effort, with particular attention to cognitive load,
3- compare predictions of SI and LE for the relevant applications within the PSST project, collaborating with the PhD students at TUB, SRU, INRIA, EURECOM, INESC ID, and RUB, and
4- carry out task-related objective and behavioural user experiments quantifying the achieved evaluation targets (UX, QoE, utility, privacy) for the considered applications to evaluate the privacy-utility trade-offs of these applications.

Your profile:

- Candidates cannot hold a doctoral degree
- Successfully completed university degree (Master, Diplom or equivalent) in electrical engineering, computer science or related area with very good results
  (degree must be completed before employment can start)
- Mobility: Candidates must not have resided or carried out their main activity (work, studies, etc.) in the country (for this position Germany) of the first recruiting organisation for more than 12 months in the 36 months immediately before their recruitment date
- Fluent written and verbal communication skills in English are required, knowledge of the local language (German) is an advantage
- Knowledge and skills in deep learning (architectures, transformer models, training, fine-tuning), programming (Python, Pytorch), natural language processing (analysis, generation, perception); furthermore, in one of the areas of user studies (empirical user testing, scaling, statistical data analysis) or data protection and mathematical approaches for privacy-preserving learning (descriptive and generative statistics, unsupervised learning, KNN, clustering)
- Ability to work independently and a critical mindset
- Pro-activeness and eagerness to participate in network-wide training events, international mobility, and public dissemination activities

How to apply:

Please send your application with the **reference number** and the usual documents (one file max. 5 MB) only via email to **bewerbung@qu.tu-berlin.de**.

By submitting your application via email you consent to having your data electronically processed and saved. Please note that we do not provide a guaranty for the protection of your personal data when submitted as unprotected file. Please find our data protection notice acc. DSGVO (General Data Protection Regulation) at the TU staff department homepage: https://www.abt2-t.tu-berlin.de/menue/themen_a_z/datenschutzerklaerung/.

To ensure equal opportunities between women and men, applications by women with the required qualifications are explicitly desired. Qualified individuals with disabilities will be favored. The TU Berlin values the diversity of its members and is committed to the goals of equal opportunities. Applications from people of all nationalities and with a migration background are very welcome.

The vacancy is also available on the internet at:
https://www.jobs.tu-berlin.de

Zertifikat seit 2008
audit familiengerechte hochschule