Technische Universität Berlin

Technische Universität Berlin offers an open position:

Research Assistant - salary grade E13 TV-L Berliner Hochschulen
part-time employment may be possible, under the reserve that funds are granted

Faculty III - Process Sciences - Institute of Energy Technology / Energy, Comfort and Health in Buildings
Reference number: III-562/24 (starting at 01/01/25 / limited until 31/10/2027 / closing date for applications 08/11/24)

Working field:

Scientists at the Hermann Rietschel Institute have been researching the energyefficient use of system technology in buildings and neighborhoods for 125 years. Our research profile aims to minimize the tension between the main topics

- Contamination control,
- Indoor Environmental Quality (IEQ) and
- Energy-efficient systems engineering in buildings and districts.

Our expertise in the development of physical and AI-supported simulation models as well as the development and maintenance of numerous test laboratories enables us to offer a range of services from basic research to prototype development.
In the field of energy-efficient HVAC technologies in buildings and districts, we focus on innovative generation, distribution and transfer systems that are designed to make the heating transition a success. The subject of the investigation is presenceequivalent heating and cooling concepts, energetically, ecologically and economically optimized generation structures and operating modes of heating networks as well as the control technology optimization of individual components. In addition to the development of physical white-box and grey-box models, machine learning methods are also used in current research projects. Neural networks are used to forecast load conditions and to optimize the operation of HVAC systems and heat generators. The institute maintains a modular multi-level district heating network test bench that can be used to map the most innovative 5th generation heating networks. A hardware-in-the-loop test bench enables the optimization of control strategies in practical applications. The HRI also investigates solutions developed in practical research collaborations in field tests.

We are looking for you to support our team!
In our current research projects, we are looking for your support to

- development of prediction models for heating and cooling load,
- development of innovative control concepts for heat generators using machine learning
- Investigation of algorithms for automatic fault detection in HVAC systerns

If interested, there is the possibility of a doctorate in the specialisation.

Requirements:

- Successfully completed scientific university degree (Diploma, Master or equivalent) preferably in the field of computer science, engineering, or similar
- At least two of the three key competencies:
  o Good knowledge of machine learning in the field of supervised learning or reinforcement learning
  o Good knowledge in the field of data acquisition and analysis
  o Good programming skills (ideally in Python)
- Good knowledge of German and/or English required; willingness to acquire the respective missing language skills

Desirable:

- High level of motivation and initiative
- Team and organizational skills
- Very good PC skills (hardware and software)
- Flexibility and interest in new challenges
- High level of interest in energy and systems technology in buildings

For more information about the position, please contact us: Prof. Dr.-Ing. M. Kriegel, Tel.: +49 (0)30 314- 24170, Mail: kontakt@hri.tu-berlin.de.

Please send your application with the **reference number** and the usual documents (combined in a single pdf file, max. 5 MB) **by email to Prof. Dr. Martin Kriegel (kontakt@hri.tu-berlin.de)** or **in writing to Technische Universität Berlin - Die Präsidentin - Fakultät III, Institut für Energietechnik, FG Energie, Komfort und Gesundheit in Geba?uden, Prof. Dr.-Ing. M. Kriegel, Sekr. HL 45, Marchstr. 4, 10587 Berlin**.

For cost reasons, the application documents will not be returned. Please submit copies only.

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.

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