Technische Universität Berlin

Technische Universität Berlin offers an open position:

Research Assistant - salary grade E 13 TV-L Berliner Hochschulen - 1st qualification period (PhD candidate)

part-time employment may be possible

Faculty V - Institute of Fluid Dynamics and Technical Acoustics/ Chair of Smart Water Networks
Reference number: V-252/25 (starting at the earliest possible / for max. 5 years / closing date for applications 04/07/25)

Working field:

The Smart Water Networks research group (https://www.tu.berlin/en/swn/) investigates how digi-tal technologies can support urban water management and modelling and management of human-water systems. Our research mission is developing data-informed and transferrable algorithms and sensor-based technologies that support sustainable, cost-effective, and just decision making, cli-mate adaptation, awareness, and sustainable behavior.
We are currently looking for a highly motivated PhD researcher to join our team. In this role, you will explore how heterogeneous text-based information (such as policy briefs, news articles, and disaster management plans) can be combined with socio-demographic and geospatial datasets (e.g., flood maps, census data) using artificial intelligence and data fusion techniques, such that new information can be included in traditional climate extreme detection and risk management modeling frameworks. Your work will contribute to bridging the gap between unstructured and structured data, enhancing how we model and respond to hydroclimatic extremes.
This position offers the opportunity to engage in cutting-edge, interdisciplinary research with real-world applications, while also contributing to innovative teaching activities. Teaching responsibilities will center on topics at the intersection of data science and sustainable water management, with the flexibility to shape new formats that reflect emerging challenges in the field.

Responsibilities:

- Conduct in-depth literature reviews on data sources, modeling approaches, and decision-making frameworks in disaster risk management and hydroclimatic extremes
- Collect, preprocess, and integrate diverse data types—including textual information (e.g., policy documents, news articles), geospatial datasets (e.g., flood maps, land use), and time series data (e.g., rainfall, streamflow)—to support innovative risk modeling
- Design and implement machine learning models that incorporate heterogeneous data sources to enhance the detection, impact assessment, and adaptation planning for hydro-climatic extreme events
- Publication of the research outcomes in scientific publications
- Contributions to developing new teaching modules combining the domains of data science and water management
- Support with BSc/MSc thesis on topics related to the project main topic

Requirements:

- Successfully completed university degree (Master, Diplom or equivalent) in Geoinformatics, Environmental Science, Computer Science, or related fields.
- Very good knowledge of and experience with mathematical modelling, statistics, data sci-ence.
- Very good programming skills, ideally Python and/or C++
- Experience with remote sensing, GIS software, and spatial data
- Experience with version control (e.g., Git/GitHub)
- Experience with data science, statistics, and/or machine learning
- Familiarity with version control, HPC environments, Linux, Docker, and SQL
- Very good written and oral language skills in English

Desirable:

- Ability to work independently and collaboratively in interdisciplinary teams
- Background or interest in sustainable water systems, climate informatics, or water man-agement
- Advanced version control, such as continuous integration in research and teaching
- Experience with project proposal writing
- Good written and oral language skills in German

Please send your written application in English with the reference number and the usual docu-ments (cover letter, CV with final grades, certificate of Master´s degree) preferably by e-mail to Prof. Dr. Cominola **(office-k2@fsd.tu-berlin.de)** or in written form to Technische Universität Berlin - Die Präsidentin - Fakultät V, Institut fu?r Strömungsmechanik und Technische Akustik, FG Smart Water Networks, Prof. Dr. Cominola, Sekr. FSD, Straße des 17. Juni 135, 10623 Berlin.

Please send copies only. Original documents will not be returned.

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.personalabteilung.tu-berlin.de/menue/jobs/

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