



At HafenCity University (HCU), subject to the provision of funds, the following position is expected to be available in the area of Digital City Science from 01.01.2024 as a

## **Research Associate (m/f/d) – in the Project “SURPRISE” IT Systems Engineer**

Pay group 13 TV-L

as soon as possible to support research with 50% of the regular weekly working time. The position is a fixed-term appointment until Nov. 30, 2024.

### **About us**

The HafenCity University Hamburg, University of Architecture and Metropolitan Development (HCU) is a university that focuses on the built environment. The HCU unites all aspects of building and design, engineering, and natural sciences as well as geoscientific and social sciences under one roof.

The position is assigned to the Professorship of Prof. Dr.-Ing. Jörg Rainer Noennig. The professorship for Digital City Science at HCU researches digital technologies for city and metropolitan development and applies them nationally and internationally. The international and interdisciplinary team develops data-based approaches for the analysis and planning of complex urban systems, bringing together expertise from architecture, urban and spatial planning, computer science and media technology. With an extensive partner network, groundbreaking tools are developed that are used in basic research as well as in concrete application projects and taught to students.

The overall aim of the project is to equip selected Ukrainian cities with a comprehensive package of innovative tools and processes based on research in Digital City Science. For sustainable development as well as for resilience and reconstruction planning, digital instruments for urban data processing will be introduced, demonstrated, and trained. Thus an active support shall be given for the development of socio-spatial and economic planning strategies and processes as required by the current and future legislation in Ukraine. The measure aims to provide digital solutions and infrastructures as well as competence for the analysis and synthesis of spatial data as a prerequisite for holistic and faster planning processes, for the qualification and updating of existing urban concepts, as well as for citizen participation and co-creation. In cooperation with local partners, relevant data will be collected and processed in order to support urban planning, strategy development, and policy making. The corresponding methods and tools will be made accessible to local users and stakeholders in the form of capacity building measures (mentorships, training and education activities).

In the project, you will focus on building and maintaining a solid IT infrastructure that enables the management, transformation, visualisation and sharing of geospatial data and data information from different sources as well as data preparation for analysis by other

project and application partners. You will be responsible for creating a system with the necessary components for an ETL process to collect data from different sources and store it in a suitable environment, e.g. MongoDB for unstructured and PostGIS for spatial/relational data and for managing CI/CD pipelines. The IT system should be able to communicate with other simulation components and Frontends. Therefore, a solid communication infrastructure is also to be established. This should consist of a GeoServer for providing geodata in accordance with OGC standards and an API (preferably FastAPI) for communicating and processing requests from in-house services and external systems. The system should be provided in a Kubernetes cluster.

### Your tasks

Specific objectives are

- (1) Enabling more rapid planning processes due to the usage of innovative digital tools with the capacity to accelerate and qualify the updating of existing planning concepts;
- (2) Provision of digital solutions that can serve as basic infrastructure for requisite data analysis and synthesis, and also enable new levels of citizen participation and co-creation;
- (3) Helping the establishment of local spatial data infrastructures in order to counterbalance recent trends towards centralization of planning processes and data in the Ukraine.

### Your profile

#### mandatory requirements

- a completed academic degree (Master or equivalent) in computer science, systems engineering or related field
- an academic degree (Bachelor or equivalent) in the above-mentioned subjects and four years of work experience in the relevant work areas of the vacant position
- extensive experience in developing data integration and handling ETL processes for various data types (unstructured, structured, spatial)
- expertise in Python frameworks (e.g. Django, FastAPI or Flask) and solid knowledge of noSQL databases (e.g. MongoDB)

You may also apply, when you have completed your Bachelor degree, but have not yet obtained the necessary four years of work experience. In this case the salary group will be 12 TV-L with the corresponding tasks and responsibilities

#### additional requirements

- very solid knowledge of Git and Docker to provide developed solutions within the chair's infrastructure,
- solid knowledge of setting up and managing Kubernetes clusters and maintaining a deployment pipeline via Drone
- experience in identity management / authorization systems (e.g. Keycloak)
- experience in dealing with geodata (PostGIS)
- familiarity with service delivery according to OGC standards (e.g. via GeoServer)

## Benefits

- workplace at an attractive location in HafenCity
- varied work in a university environment in cooperation with international scientific partners
- a family-friendly university that supports its employees in balancing work and family life
- support for professional and personal development through a wide range of training and continuing education opportunities
- other benefits, such as discounts in the canteen of the student union, etc.

## How to apply

In addition to an informative cover letter in which you explain to what extent you meet the requirements profile, we need the following documents from you:

- curriculum vitae in tabular form,
- proof of vocational training,
- current appraisal or current certificate (see also notes on the application and selection process),
- relevant proof of further training,
- proof of a severe disability or equal status in the selection process,
- declaration of consent to inspect your personnel file, stating the office responsible for your personnel file (only for applicants from the public sector).

For questions and further information, do not hesitate to contact Catherine Vandermeulen, +49 (040) 428 27- 4076.

The applicant's classification in regard to the level of experience within the advertised TV-L pay group is based on the candidate's individual work experience and reviewed by the HR department. Legally binding statements can only be made by the HR department of the HCU.

Please send your application (including CV, cover letter, and copies of relevant certificates), no later than **02.01.2024** (preferably by email as one PDF file) to:

HafenCity Universität  
Personalverwaltung  
Stellen-Nr.: 2023-147  
Henning-Voscherau-Platz 1  
20457 Hamburg  
E-Mail: [HCU-bewerbung@vw.hcu-hamburg.de](mailto:HCU-bewerbung@vw.hcu-hamburg.de)

Please include the reference number „**2023-147**“ in your application.

Please be aware that in case of an invitation to an interview, HCU will not be able to cover

any expenses for travel and lodging.

Due to the high number of applicants, the HCU will not be able to return application documents. Therefore, please do not submit originals of certificates. If you add a post-paid envelope, the HCU will return your application documents.