



**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

**Faculty VI - Institute of Geodesy and Geoinformation Science / Geodesy and Adjustment Theory**

**Reference number:** VI-553/24 (starting at the earliest possible / for 18 months / closing date for applications 25/10/24)

### **Working field:**

The DFG-funded project focusses on the development of methods for an automated generation of digital building models from heterogeneous data sources towards a parametric associative building information modelling (BIM). One of the challenges in the development of an automated BIM generation is the integration of heterogeneous data from different sources, such as images from photogrammetric surveys and/or 3D point clouds from measurements with laser scanners (LIDAR data), existing 2D and 3D CAD models or 2D site plans. The main task of this position is therefore the development of a quality infrastructure for building modelling based on 3D point clouds under consideration of inaccurate, incomplete and to some extent also erroneous data sources. The following work is partly carried out in close cooperation with the project partners of the DFG Priority Programme SPP 2388 „SPP 100+“:

- Independent processing of the ADIBAMOD-Q project and interdisciplinary cooperation with the project partners of the priority programme SPP 100+.
- Development of algorithmic approaches to determine uncertainties of individual data groups and implementation of robust algorithms to identify erroneous data.
- Development of algorithmic approaches for the fusion of heterogeneous data and 3D point clouds and for the automatic generation of BIM models for existing buildings.
- Writing interim and final reports, project presentations and scientific publications.
- Preparation of a doctoral thesis.
- Extension of the contract term to a total of 27 months if necessary is possible.

### **Requirements:**

- Successfully completed university degree (Diplom, Master or equivalent) in geodesy or a related field.
- Profound knowledge in adjustment theory and statistic test procedures.
- Very good knowledge in the field of 3D coordinate transformation using e.g. Euler angles, quaternions or affine mapping as well as estimation of the transformation parameters using the method of least squares.
- Good knowledge in variance component estimation and robust estimation techniques.
- Knowledge of Building Information Modelling (BIM).
- Expertise in terrestrial laser scanning including knowledge and experience in the registration of 3D point clouds using geometric primitives, such as planes.
- Relevant experience in the segmentation of 3D point clouds.
- Good programming skills in Matlab/Octave, Python.
- Aptitude and willingness to survey bridges using terrestrial laser scanners.
- Good knowledge of German and/or English required; willingness to acquire the respective missing language skills.

### **Desired:**

- Ability to work independently.
- Ability and willingness to work in an interdisciplinary team and to communicate with project partners.

Please send your application **with the reference number** and the usual documents to Prof. Dr.-Ing. Neitzel **only by email** (single pdf file; max. 5 MB) to [pia.daute@tu-berlin.de](mailto:pia.daute@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 guarantee 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/](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.

Technische Universität Berlin - Die Präsidentin - Fakultät VI, Institut für Geodäsie und Geoinformationstechnik, FG Geodäsie und Ausgleichsrechnung, Prof. Dr.-Ing. Frank Neitzel, Sekr. KAI 2-2, Kaiserin-Augusta-Allee 104-106, 10553 Berlin

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

