At the Institute for Computational Modeling in Civil Engineering of the Technische Universität Braunschweig a position is available as a

**Scientific Assistant**
(pay group 13 TV-L)

for the joint project funded by the Federal Ministry of Education and Research (BMBF)

**A participative approach for the interdisciplinary teaching of data-centered methodological and application competencies in universities - KI4All**

This project aims to develop subject-specific as well as interdisciplinary study modules on artificial intelligence (AI), especially in the area of machine learning, for all status groups in universities and the interested public. The work is carried out across universities in cooperation with the TU Clausthal and the Ostfalia University of Applied Sciences. An AI hub will be established as a decentralized platform for the coordinated development activities. It will enable utilization planning as well as the implementation of didactically secured and innovative learning and teaching concepts of methods and application-oriented tools in the context of data-driven modeling, analysis and simulation for different target groups. In addition, participatory formats are used to promote AI-based innovations, ranging from microcredits and microdegrees in advanced training contexts and activities in the area of Studium Generale to mandatory courses in undergraduate degree programs or learning opportunities for doctoral students.

The position is available immediately and is limited until November 30, 2025. Depending on the assignment of tasks and fulfilment of personal requirements, payment is up to EG 13 TV-L. The position offers the possibility of a doctorate, which is expressly supported by the professorship. Thematically, both a subject-related and a didactic doctoral focus are equally possible.

**About us**
The research group "Data-Driven Modeling and Simulation of Mechanical Systems" of Jun.-Prof. Dr.-Ing. Henning Wessels currently consists of three research associates. Our focus is fundamental research at the interface between machine learning and numerical simulation. Where conventional simulation methods reach their limits, e.g. in inverse or multi-scale problems, we develop tailored machine learning methods. Against the background of digital twins, we also aim to extend the application of numerical simulation by relating it to measurement and monitoring data that accrue over the entire product life cycle. Our group is very well connected internationally and maintains close contacts e.g. to UC Berkeley and Brown University as well as to industrial partners.

**Your tasks**
- Develop AI-related instructional learning content in a variety of formats (micro-credits, tutorials, hackathons). Basic introductions as well as subject-specific specializations for civil and environmental engineering are foreseen.
- Supervise, manage, evaluate, and continuously improve teaching-learning opportunities over the duration of the project
- Participation in the implementation of events, e.g. hackathons
- Writing scientific publications and project reports
- Presentation of project results to project partners and at conferences
Qualification requirements

- Above-average academic degree in engineering, mathematics or natural sciences (master's degree or comparable), preferably also at a teaching level
- Sound previous knowledge in the field of numerical and data-driven modeling and simulation, demonstrated by attendance of relevant courses and/or a related specialization project and/or master's thesis
- Knowledge of a programming language, preferably Python

What we expect

- Experience in programming with Python, in software design and in using Jupyter, Docker, or comparable tools
- Experience in teaching, for example in supervising learning groups or tutorials, is an advantage
- Familiarity with the use of digital teaching media
- Profound language skills to implement courses in both German and English
- Team spirit and strong communication skills

What we offer

- Attractive working environment in a committed young team
- Great creative freedom with plenty of room for own ideas and personal development
- Interaction with the various project partners with the possibility of interdisciplinary collaboration and perspectives outside the box
- For a doctorate with a didactic focus, co-supervision by the Institute for Didactics of Natural Sciences at TUBS is possible
- Participation in continuing education programs of the Graduate Academy GradTUBS

Application

Please send your meaningful application documents in one PDF file with the usual documents (letter of motivation, CV, copies of certificates, references) as soon as possible, but no later than February 04, 2022, by e-mail to:

Jun.-Prof. Dr.-Ing. Henning Wessels
Institute for Computational Modeling in Civil Engineering, TU Braunschweig
Pockelsstraße 3 in 38106 Braunschweig
E-Mail: h.wessels@tu-braunschweig.de
Web: https://www.tu-braunschweig.de/irmb/

The Technische Universität Braunschweig strives to reduce under-representation in all areas and positions in the sense of the NGG. Therefore, applications from women are particularly welcome. Severely handicapped persons are preferred in case of equal suitability. Proof of eligibility must be submitted. Applications from people of all nationalities are welcome. Personal data will be stored for the purposes of the application process. Application costs cannot be reimbursed.