

Hanover, 26/04/2024

The **BUNDESANSTALT FÜR GEOWISSENSCHAFTEN UND ROHSTOFFE (BGR)** is looking for you  
as a

### Research Assistant (m/f/d)

We are the Federal Government's central geoscientific advisory centre with headquarters in Hanover and two further offices in Berlin-Spandau and Cottbus. As a geoscientific competence centre, we advise and inform the Federal Government and the German economy on all geoscientific and raw materials management issues.

**Date of recruitment:** immediately **Application deadline** : 17/05/2024  
**Duration of employment:** limited until 30/06/2026 **Location** : Hanover  
**Working hours:** 100 % (also suitable for part-time work) **Tender number:** B 47/24 (B4.4)  
**Classification:** E 14 TV EntgO Bund **Kennwort** : "MultiMiner"

#### Main tasks

The European HORIZON Europe research project MultiMiner aims to develop new data processing algorithms for the exploration of critical raw materials and the monitoring of mining activities that are scalable and transferable. The focus is on approaches from the fields of machine learning (ML) and deep learning (DL) that require little or no training data (weakly supervised learning or unsupervised learning) and synergistically use data from various sensors (e.g. EnMAP, drones, Sentinel-1/-2) and different resolutions (spatial and spectral). In order to increase long-term autonomy in important strategic raw materials, it is important to bring together the possibilities of new scientific developments.

- Further development of application-orientated, transferable methods for the detection of different mineral deposits and mineral resources
- Development and use of methods from the fields of machine learning (ML) and deep learning (DL) and AI approaches for the (synergetic) evaluation and utilisation of various remote sensing data in the fields of "mineral deposits" and "geology"
- Merging of remote sensing data and geological-mineralogical data from different sources using ML/DL methods
- Digital processing and interpretation of multiscale and multisensor remote sensing data, especially hyperspectral and multispectral remote sensing data in the context of raw material exploration
- Participation in geoscientific field campaigns incl. hyperspectral measurements with UAV and terrain spectrometer
- Presentation of the results of the work to the specialist public at important national and international conferences and publication in recognised scientific media

#### We expect

You have a university degree (Master's or equivalent) in geology - or a geoscientific degree programme specialising in geology - with a focus on remote sensing and ideally mineral resources.

- Experience in the development of transferable methods based on physical data, especially remote sensing data
- Experience in handling and using sensors and remote sensing methods
- Good knowledge in the areas of machine learning and deep learning
- Very good knowledge of geological/reservoir remote sensing as well as geological processing and geoscientific evaluation of remote sensing data including the corresponding data processing software (e.g. ENVI, ERDAS)
- Knowledge and experience in the machine-supported (machine learning) evaluation and interpretation of modern spectral remote sensing data for geological and deposit-related questions
- Knowledge of common ML and DL libraries and frameworks (e.g. Keras, TensorFlow, scikit-learn, CARET, etc.)
- Good knowledge of at least one high-level programming language, e.g. Python or R
- English language skills comparable to level C1 GeR
- German language skills comparable to level B2 GeR or willingness to participate in employer-financed language courses
- Very good coordination, communication and teamwork skills
- Strong ability and willingness to work independently and goal-orientated
- Initiative and flexibility
- Strong ability to work independently and goal-orientated
- Strong communication skills, negotiating skills, flexibility, initiative and very good organisational skills

### Ideally, you should have

- Professional experience with a (federal) authority or a federal departmental research institution
- Experience with hyperspectral remote sensing data
- Experience in building hyperspectral databases
- Experience with hyperspectral field work and aerial campaigns

### What we offer

- Classification according to **pay group 14 TV EntgO Bund**
- Flexible and family-friendly working time models
- A continuous programme of further and advanced training
- Mobile working is possible depending on the field of activity

BGR has a health centre, excellent public transport links, free parking spaces and covered bicycle stands for its employees.

Applications from people of all nationalities, regardless of their origin, gender, religion or ideology, disability, age or sexual identity are welcome. The language of communication is German. BGR also pursues the goal of professional equality between women and men. We therefore particularly welcome applications from women. The BGR also endeavours to increase the proportion of severely disabled people in its workforce and therefore gives them preferential consideration if they are equally qualified.

**Have we aroused your interest?**

Then we look forward to receiving your online application via [www.interamt.de/ID=1129219](http://www.interamt.de/ID=1129219) by 17.05.2024.

You can find more information about our organisation on the Internet at [www.bgr.bund.de](http://www.bgr.bund.de). For telephone information, please contact **Dr Thomas Lege** on 0511/643-3001.

The protection of your data is important to us. For more information on how we handle your personal data when you apply to BGR, please refer to the privacy policy at <https://www.bgr.bund.de/datenschutzerklaerung-bewerbungsdaten>.