Leibniz-Zentrum für Agrarlandschaftsforschung e.V. - HR

Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF) e.V.

Die Mission des Leibniz-Zentrums für Agrarlandschaftsforschung (ZALF) e. V. als national und international agierendes Forschungszentrum ist es, an der ökonomisch, ökologisch und sozial nachhaltigen Landwirtschaft der Zukunft zu forschen – gemeinsam mit Akteuren aus der Wissenschaft, Politik und Praxis. Das ZALF ist Mitglied der Leibniz-Gemeinschaft und unterhält neben dem Hauptstandort in Müncheberg (ca. 35 Minuten mit der Regionalbahn von Berlin-Lichtenberg) eine Forschungsstation mit weiteren Standorten in Dedelow sowie Paulinenaue.

Postdoctoral Researcher (w/m/d)

We are offering a postdoctoral researcher position in the BMFTR funded Junior Research Group “Towards healthy soils by using autonomous field robots in diversified agricultural landscapes” (SoilRob). SoilRob aims at examining whether the utilization of autonomous field robots and the integration of high-resolution data in diversified cropping systems can enhance soil health, boost soil-based ecosystem services, and stabilize or increase yields compared to conventionally managed fields. The successful candidate will take primary responsibility for three interconnected workstreams. First, the researcher will progress on calibrating hyperspectral, thermal, and LiDAR sensors mounted on field robots and autonomous platforms at different experimental sites, generating high-resolution data on soil and plant properties. Second, the researcher will lead the data homogenization and fusion, harmonizing heterogeneous, high-dimensional datasets from multiple sensors, spatial scales, and temporal resolutions, and developing workflows for integration with in-field collected soil health data. This includes applying advanced statistical and machine learning approaches to distinguish between robot model, crop and soil type effects on measured soil health indicators. Third, the researcher will work jointly with the technical design team at TU Dresden to embed processed data into the digi.farming.lab virtual environment (Farming Simulator platform), contributing to implement project-relevant scenarios into the Farming Simulator platform. We are offering a full-time position for 2 years starting earliest in October 2026 at our location in Müncheberg at the ZALF research area “Land Use and Governance” in the working group “Resource-Efficient Cropping Systems” as Postdoctoral Researcher (w/m/d).

City: Müncheberg; Starting date (earliest): At the earliest possible; Duration: for 2 years; Remuneration: Classification according to the collective agreement of the federal states (TV-L) up to EG13 full-time working (including special annual payment); Reference number: 32-2026; Closing date: 31/07/26

Tasks

- Precise calibration and optimization of sensor and camera technologies for high-resolution data collection of soil and plant properties in the field
- Harmonize and homogenize high-dimensional, heterogeneous datasets from sensors with varying spectral ranges, spatial resolutions, and temporal scales
- Develop robust pipelines to merge field-collected data with external reference datasets (e.g., large spectral libraries)

- Detect and correct systematic biases between sensor sources; validate homogenization outcomes quantitatively
- Develop data acquisition protocols for sensor payloads on moving platforms
- Integration and visual implementation of simplified crop and soil models into the virtual gaming environment
- Consolidate collaboration and communication with technical design team at TU Dresden
- Publish results in peer-reviewed international journals, present results at international conferences and contribute actively to new project proposals
- Engage in science communication and transdisciplinary research activities
- move fluently between field instrumentation, data science, and cross-institutional collaboration

Requirements

- PhD in agronomy, environmental science, geosciences, engineering or data science
- Demonstrated experience with field-based or proximal soil sensors and instrument handling
- Strong Python programming skills for data processing, machine learning model development, and pipeline automation
- Experience applying machine learning methods to environmental or agricultural datasets, including model validation and performance evaluation
- Ability to handle noisy, heterogeneous, multi-source datasets and develop reproducible analysis workflows
- Knowledge of GIS, spatial data analysis, or UAV/satellite remote sensing
- Driver’s licence recommended
- Willingness to travel within Germany for several days, for sampling campaigns and cooperation with project partners must be present

What we offer

- An interdisciplinary and open-minded working environment that encourages independence and self-reliance
- Broad network activities within the Junior Research group SoilRob
- Strong institutional commitment to a good work-life balance
- Classification according to the collective agreement of the federal states (TV-L) up to EG13 full-time working (40h/week, including special annual payment)
- Company train ticket

Application

ZALF promotes equality among all employees and welcomes applications regardless of ethnic, cultural, or social background, age, religion, ideology, disability, gender, or sexual identity. The filling of the position in part-time is possible in principle. Please send your application preferably online (see button online application below). For e-mail applications, create a PDF document (one PDF file, max. 5 MB; packed PDF documents, archive files like zip, rar etc. Word documents cannot be processed and therefore cannot be considered!) with the usual documents, in particular CV, proof of qualification and certificates, stating the reference number 32-2026 until July 31th 2026 to (see button e-

mail application below).

https://jobs.zalf.de/jobposting/2b440324cb31961c4e8228e648819d9e8b10ed9a0

If you have any questions, please do not hesitate to contact: Dr. Adrija Roy, Adrija.Roy@zalf.de and Dr. Kathrin Grahmann, Tel. +49 (0) 33432/82-142, Kathrin.Grahmann@zalf.de.

For cost reasons, application documents or extensive publications can only be returned if an adequately stamped envelope is attached.
If you apply, we collect and process your personal data in accordance with Articles 5 and 6 of the EU GDPR only for the processing of your application and for purposes that result from possible future employment with the ZALF. Your data will be deleted after six months.

More information at https://stellenticket.de/205138/FUB/
Offer visible until 19/07/26