

Rheinische Friedrich-Wilhelms-Universität Bonn, Faculty of Agriculture

## **PHD POSITION: Automated In-field high-resolution laser scanning of plants**

Our research group at the University of Bonn is seeking for a highly qualified and highly motivated PhD student in the area of kinematic 3D laser scanning in agriculture. The work will be part of the Cluster of Excellence “PhenoRob - Robotics and Phenotyping for Sustainable Crop Production”, which started in January 2019.

The goal of the thesis is to develop methods to derive high resolution and high accuracy 3D models of plants in the field using a robotic platform while considering the motion of the plants during the measurement. The tasks include the design and implementation of the measurement system, the development of methods to generate consistent 3D point clouds of the plants, and the execution and analysis of regular measurements in the context of crop production.

### **About the candidate**

We seek for a student with an excellent Master’s degree in geodesy, computer science or a related discipline with a background in 3D measurement techniques, point cloud processing, remote sensing, photogrammetry or computer vision. The candidate is envisioned to conduct top-level research and at the same time contribute to the very interdisciplinary concept of the Cluster of Excellence “PhenoRob”. International candidates are encouraged to apply, knowledge of German language is very welcome but not required.

### **How to apply**

Qualified applicants holding a Master’s degree should provide the following material:

1. Cover letter briefly describing their background and motivation
2. CV including their Master’s degree certificate / transcript of record
3. Date of availability
4. References

The position is to be filled as soon as possible and designated for a period of up to 4 years, but max. until December 31, 2023. The salary is according to the German Federal pay scale (TVL E-13). All documents should be submitted by September 15th 2019 via email as a single pdf file to Dr. Lasse Klingbeil ([klingbeil@igg.uni-bonn.de](mailto:klingbeil@igg.uni-bonn.de)).

The University of Bonn is committed to diversity and equal opportunity. It is certified as a family-friendly university and aims to increase the number of women employed in areas where women are under-represented and to promote their careers. To that end, it urges women with relevant qualifications to apply. Applications will be handled in accordance with the Landesgleichstellungsgesetz (State Equality Act). Applications from suitable candidates with a certified disability or equivalent status are particularly welcome.

### **About the Geodesy research group**

The Geodesy Research Group at the University of Bonn is headed by Prof. Dr.-Ing. Heiner Kuhlmann and is part of the Institute of Geodesy and Geoinformation. The group is concerned with general problems of engineering geodesy and in particular with the generation, analysis and interpretation of 3D data. The group develops mobile multi sensor systems (e.g. unmanned aerial vehicles, mobile mapping vehicles) which allow the creation of highly accurate georeferenced 3D data of the environment while flying or driving through it. One of many applications is the monitoring of plants and their environments for agricultural purposes.

### **Relevant links**

- Group of Geodesy: <https://www.gib.uni-bonn.de/>
- Institute of Geodesy and Geoinformation: <http://www.igg.uni-bonn.de>
- University of Bonn: <http://www.uni-bonn.de>
- Cluster of Excellence “PhenoRob”: <http://www.phenorob.de/>