



DLR – DAAD Fellowships

Fellowship No. 533

Research Area : Space

Research Topic: **Explainable Semi-supervised Learning for Analyzing SAR Imagery**

DLR Institute: Microwaves and Radar Institute, DLR Oberpfaffenhofen

Position: Doctoral Fellow

Openings: 1

Job Specification: Synthetic Aperture Radar (SAR) is a very unique imaging sensor. It allows the acquisition of images independent of daylight and despite cloud cover. Furthermore, the obtained images can not only be used to derive standard high-level products such as semantic maps, but also enable the estimation of bio-/geo-physical parameters (e.g. biomass, vegetation height, soil moisture, etc.). While Deep Learning (DL) has shown tremendous success in exploiting latent relations between different input modalities and various target variables, key SAR applications still rely on the inversion of physical models (PM). This project aims to use DL to improve the understanding of remote sensing data for the extraction of bio-/geophysical information. Special focus will be on annotation scarcity (e.g. semi-, weakly, and self-supervised learning) as well as interpretability of the derived models (i.e. explainable AI).

Required Qualification:

- Master degree in Information and Communication Engineering, Computer Science, Mathematics.
- Proficient on multiple platforms (Linux, Windows) with skilled programming experiences.
- Experiences in statistical modelling, computer vision, or machine learning.
- Good knowledge of English (speaking and writing)

Advantageous Skills: Experiences in Deep Learning

English competence: See requirements on www.daad.de/dlr

Earliest Start Date: April 1st, 2022

Application Deadline: Until position filled

Further Information: <http://www.dlr.de>
<http://www.daad.de/dlr>