

## MUNICH AEROSPACE – NEW HORIZONS IN AVIATION AND SPACE

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In 2010, through Munich Aerospace and its pooling of research, graduate programs and teaching an alliance has been formed between the **Technical University Munich (TUM)**, the **Bundeswehr University Munich (UniBwM)**, the **German Aerospace Center (DLR)**, as well as **Bauhaus Luftfahrt (BHL)**.

To promote excellent, scientific young academics, Munich Aerospace awards a PhD scholarship on

### **Adaptive few-shot change detection for Earth observation**

**IMonitor: AI for Monitoring Changes and Food Supply from Space** is a new Munich Aerospace research group at the Data Science in Earth Observation of Technical University of Munich, in close collaboration with DLR and IABG.

The successful candidate will be involved in research work related to pattern recognition and multi-temporal remote sensing image analysis.

#### **Your tasks**

The candidate is expected to advance the state-of-the-art research in the following topics:

- Automatic information extraction from satellite image time-series;
- Designing techniques that can be easily adapted to new applications, e.g. using few-shot learning;
- Unsupervised representation learning.

Developed activities are expected to be carried out in the context of applications such as urban planning, disaster management, surveillance, agriculture, geology, climate change, etc. The candidate will work in close collaboration with researchers from DLR/TUM and IABG, as well as with different international stakeholders.

#### **Your profile**

- Completed university degree (university diploma / master's) in computer science, remote sensing, geoinformatics, data science, statistics or a comparable subject.
- Knowledge in the field of machine learning, image/signal processing, statistics and/or remote sensing;
- Excellent motivation in developing research activities both at theoretical and application levels;
- Good knowledge of existing tools for remote sensing data processing;
- Willingness to learn new technologies;

- Capability to work in a project-oriented manner with a strong commitment to achieve assigned objectives;
- Good expertise in deep learning libraries such as Tensorflow, Keras, and/or PyTorch;
- Good expertise in programming languages e.g. Python, Matlab, C++;
- Ability to interact with scientists at different levels;
- Ability to work independently, but also highly motivated in a team and have excellent communication and cooperation skills;
- Excellent knowledge of written and spoken English.

## The Scholarship

The Munich Aerospace scholarship amount is 1.575 € per month granted for a minimum of 12 months and limited to a maximum of 3 years. Munich Aerospace scholarship holders are entitled to attend the Munich Aerospace Graduate School, formed by the TUM Graduate School and the DLR\_Graduate\_Program, and have access to special events and trainings. An additional grant of up to € 6.100 per year will be available to cover expenses that are directly related to the PhD project (e.g. textbooks, laptop, conference travels, public transport, housing subsidy). The scholarship holder is part of a Munich Aerospace research group and receives additional technical support from the research group head. The candidates receive their PHD from TUM or UniBwM.

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## Interested?

Please send us your application including relevant documents (cover letter, CV, diplomas, transcript of records) in PDF format to Dr. Dragos Bratanu ([dragos.bratasanu@dlr.de](mailto:dragos.bratasanu@dlr.de)). The application deadline is May 17, 2021.

**We are looking forward to your application!**