Final thesis / internship (m/f/x): Developing meteorological / AI / image-processing/remote-sensing methods for solar energy

Stellenanbieter: Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)

Final thesis/ Internship:

Developing meteorological / AI / image-processing / remote-sensing methods for solar energy

Your mission:

Join our research group and develop novel meteorological input data for solar-energy projects! Our approaches are partly physics-based and increasingly data-driven. As data sources measurements from traditional irradiance sensors and data from cloud cameras and satellites are used. In this context, we are constantly looking for motivated and qualified candidates to support our development works in the context of master or bachelor theses as well as internships (duration at least 4 months).

Among others, current research topics are:

- Enhancement of data-driven short-term solar-irradiance forecasts using remote-sensing data (cloud cameras, satellites)
- Advanced PV plant monitoring using ground-based and remote-sensing data
- Case-studies on practical applications of our methods
- Related software development

Your tasks could be:

- Defined based on your profile and our current projects and can include multiple of the following
- Literature reviews
- Developing machine-learning models using advanced architectures and training procedures
- Physics-based developments related to solar irradiance
- Practical experimental work
- Preparation of datasets for machine learning
- Validations against high-quality reference data
- Applying developed methods in practical contexts evaluating their technical and economical impact
- Summarizing your methodology, experiments and results in a well-structured thesis.

We've got a great offer for you:

- A collaborative, diverse, and motivated team committed to building a sustainable future.
- Opportunities to work closely with colleagues and tutors, exchanging ideas and solving challenges.
- Hands-on experience in solar-energy research, machine learning and software development.
- Exposure to cutting-edge technologies in remote sensing, image processing, computer vision and machine learning.
- A chance to contribute to climate change mitigation and advance renewable energy solutions.
- A position in a leading German Research Center with office in Almería, Spain, a sunny city on the Mediterranean coast.

Your qualification:

- You have a good academic record in a Bachelor's/Master's/Diploma program in the fields of computer science, physics, engineering or similar.
- Strong interest in data analysis, computer vision or meteorology/atmosphere
- Basic experience in Python and basic knowledge about machine learning
- Basic knowledge in the fields of satellite imaging and remote sensing is a plus
- Experience with software-versioning systems (git) is a plus
- The ability to work structured and independently and collaborate in an international team
- Comfortable in speaking and writing English

If this sounds like an exciting opportunity for you, please contact us! Bijan Nouri (bijan.nouri@dlr.de**).**

Please enclose supporting documents for the above points with your application.

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