



Food Security Challenge

Prize Catalogue



An initiative of



Organised by



Implemented by



Introducing AI4EO

AI4EO is an initiative from the Φ-lab of ESA's Directorate of Earth Observation Programmes. It strives to bring the worlds of Artificial Intelligence and Earth Observation closer together to kindle and encourage interaction and collaboration.

The Food Security challenge

Remote sensing is entering a new era of time-series analysis. Daily revisit times of satellites allow for near real-time monitoring of many areas across the globe. However, there has been little exploration of deep learning techniques to leverage this new temporal dimension at scale. Especially, existing approaches have struggled to combine the power of different sensors to make use of all available information. To stimulate innovation in spatio-temporal machine learning, **Planet, TUM, DLR and Radiant Earth** have partnered up to propose a unique challenge centered around modeling vegetation phenology from near-daily, harmonized time series of Planet Fusion and Sentinel Imagery. This is made possible by Planet's new and unprecedented L3H preprocessing level that allows direct interoperability with Sentinel-2.

The goal of this challenge is to classify crop types based on time series data from Sentinel-1, Sentinel-2 and Planet Fusion Monitoring Data. The challenge covers two areas of interest, in Germany and South Africa. The datasets present two main challenges to the community: exploit the temporal dimension for improved crop classification and ensure that models can handle a domain shift to a different year.

Two tracks

Participating teams can choose between two tracks:

- Within-season crop identification in the Republic of South Africa
- Reusability of models for crop identification from one growing season to the next, in the region of Brandenburg, Germany

Participating teams have a chance at winning amazing prizes, including internships, cloud computing credits, and much more! You can choose to participate in both challenges, or select one of the tracks.

How it works: The AI4EO Prize Catalogue

This catalogue presents the available prizes for the top three teams and their members. Each winning team receives "AI4EO points" that can be used to assemble their preferred prize bundle from the catalogue - it's like redeeming points from a consumer rewards and loyalty programme!

Individual and team prizes

Some prizes are individual, others are team prizes. The teams can either choose to spend the points together, or share the points and spend them as individuals or a combination of both. The prizes are marked accordingly as



individual
prize



team
prize

Restrictions

Some prizes come with restrictions. These can be found in the small print in the description of those specific prizes.

AI4EO points

Winner
30.000

AI4EO points

2nd prize 15.000

AI4EO points

3rd prize

5.000

AI4EO points

The assigned team leader is responsible for communicating the selected prize(s) to the organisers.

Challenge organisers



Planet is the leading provider of global, daily satellite imagery and insights. Planet is driven by a mission to image all of Earth's landmass every day, and make global change visible, accessible, and actionable. Founded in 2010 by three NASA scientists, Planet designs, builds, and operates the largest fleet of imaging satellites, as well as online software, tools and analytics needed to deliver data to users. Decision makers in business, government, and within organizations use Planet's data and machine learning-powered analytics to develop new technologies, drive revenue, power research, and make informed, timely decisions to solve the world's toughest challenges.



The Technical University of Munich (TUM) is one of Europe's top universities. It is committed to excellence in research and teaching, interdisciplinary education and the active promotion of promising young scientists. The university also forges strong links with companies and scientific institutions across the world. TUM was one of the first universities in Germany to be named a University of Excellence. Moreover, TUM regularly ranks among the best European universities in international rankings.

DLR is the Federal Republic of Germany's research center for aeronautics and space. They conduct research and development activities in the fields of aeronautics, space, energy, transport, security and digitalization. The German Space Agency at DLR plans and implements the national space programme on behalf of the federal government. Two DLR project management agencies oversee funding programmes and support knowledge transfer. Climate, mobility and technology are changing globally. DLR uses the expertise of its 55 research institutes and facilities to develop solutions to these challenges.



Radiant Earth Foundation

EARTH IMAGERY FOR IMPACT

Radiant Earth Foundation is a non-profit organization actively working to develop Earth observation machine learning libraries and models through an open source hub that support global missions like agriculture, conservation, and climate change. Radiant Earth also fosters a community of practice to develop standards around machine learning for Earth observation and provide information on the progress and innovation in the Earth observation marketplace.

Prizes of organisers

Internships



1X

12-week paid internship with the Analytics R&D/Engineering Team at Planet in 2022*

 **30,000 AI4EO points**

12X

Vouchers for Planet Fusion Monitoring imagery**

 **5,000 AI4EO points**

2X

Research stay of 3 to 6 months in frame of AI4EO Future Lab Project, including financial support for travel and accommodation***

 **11,500 AI4EO points**



Radiant Earth Foundation
EARTH IMAGERY FOR IMPACT

2X

Summer internship in June to August 2022****

 **10,000 AI4EO points**

*Subject to Planet's eligibility requirements

**Subject to Terms and Conditions of Planet License Agreement

**** Travel financial support up to EUR 1,000; accommodation support up to EUR 1,750 monthly. No food and expenses covered

****Winners should not be residing in a country that is under sanction by the US Government

Sponsored prizes



6 months SME
subscription to the
Picterra platform.

9,000 AI4EO
points

3 months SME
subscription to the
Picterra platform.

9,000 AI4EO
points



Microsoft AI for Earth

6 x Microsoft Azure credits
for USD 5,000 each

5,000 AI4EO
points



Sponsored prizes



6X 1 day of coaching on access-to-finance for high tech start-ups by Rainer Horn, leading expert in fund raising



1,200 AI4EO points

6X 1 day of coaching on promotion and communication in Earth Observation by Stéphane Ourevitch, leading expert in communication

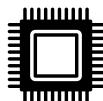


1,200 AI4EO points



SINERGISE

1 year Enterprise-L subscription to Sentinel Hub

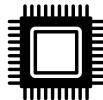


Up to 1M processing units per month.
Up to 3M processing units in Batch mode per month
Individual support

10,000 AI4EO points



1 year Enterprise-S subscription to Sentinel Hub

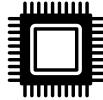


Up to 400000 processing units per month
Up to 1.2 M processing units in Batch mode per month
Individual support

5,000 AI4EO points



1 year Basic subscription to Sentinel Hub



Up to 70000 processing units per month.
Up to 210000 processing units in Batch mode per month

1,000 AI4EO points



1 month part - time paid internship 3X



With opportunity to work with Sinergise's team on ongoing machine learning projects (remotely, with possibility to get onboarded at the end of internship)

3,000 AI4EO points



Sentinel Hub goodies 1X

100 AI4EO points



Sponsored prizes



1 year free subscription to Hexagon Geospatial software for EO data processing
Imagine and Imagine Photogrammetry

 9,000 AI4EO points



6 days of technical assistance on solution engineering, including porting on cloud

 5,000 AI4EO points

6 days of coaching on business plan analysis and preparation by Marcello Maranesi, former CEO of Eurimage and e-GEOS

 5,000 AI4EO points

Sponsored prizes



1 day consultancy/mentoring support for Startup in reviewing Business plan or Project Proposals for funding requests (in full Confidential agreement)

3X

1,000 AI4EO points



earth**pulse!**

Dataset generation with SCAN,
EarthPulse labelling tool

6 days of coaching on Artificial intelligence, Machine learning & NN development and training by Juan Pedro, EarthPulse AI expert

6 days of coaching on product development & business strategy by Laura Moreno, mentor of Copernicus Accelerator, Barcelona Activa and Astropreneurs

7,000 AI4EO points

5,000 AI4EO points

5,000 AI4EO points

AI4EO)

A bridge between EO and AI

www.ai4eo.eu

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 hello@ai4eo.eu

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