ITU Events

AI for Good
GeoAI Challenge

Applying machine learning to geospatial analysis

aiforgood.itu.int

AI for Good

Agenda

1. The ITU GeoAI Challenge: goals, objectives and outlook. A. Manara (ITU) – 10 min
2. The problem statements
    1. School Mapping with Big Data, Do-Hyung Kim (UNICEF) -20 min
        1. Q&A – 5min
    2. Cropland mapping with satellite imagery
        1. UN Open GIS Initiative WG on GeoAI, Tomaz Logar (Global Pulse)
        2. Cropland mapping problem statement, Pengyu Hao, Zhongxin Chen (FAO) –20 min
        3. Q&A –5 min
    3. Location Mention Recognition from Social Media Crisis-related Text, Reem Ali Suwaileh (Qatar University) – 20 min
        1. Q&A –5 min
3. Q&A general –15 min
4. Interactive session in the Neural Network – 20 min

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The ITU GeoAI Challenge

To solve real-world geospatial problems by applying artificial intelligence (AI) / machine learning (ML) to advance the United Nations Sustainable Development Goals (SDGs).

https://aiforgood.itu.int/about-ai-for-good/geoai-challenge/

GeoAI Guidelines

- Build-up a community
- Students and professionals
- Expert talks (webinars)
- Round-tables
- Hands on sessions
- Mentorship
- Baseline models

The ITU GeoAI Challenge

Benefits for participants:

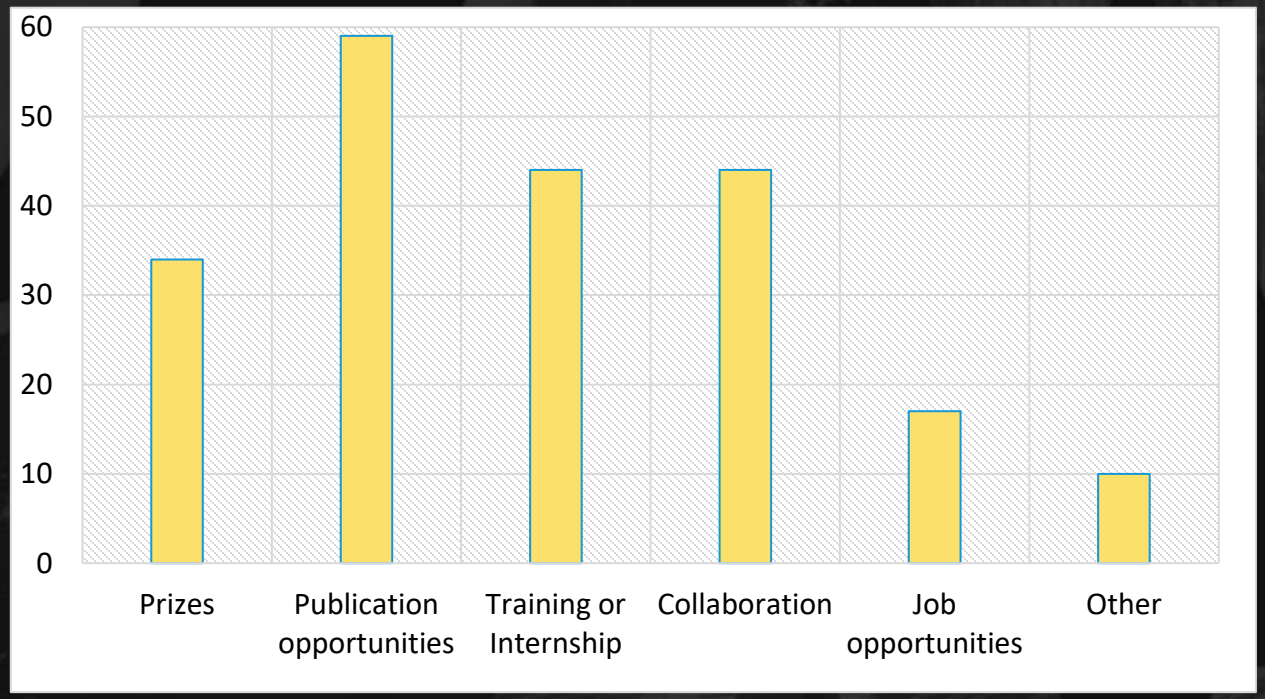
- Platform to gain hands-on experience related to GeoAI.
- Opportunity to define, provide inputs and shape the technologies related to GeoAI.
- Network with experts and peers.
- Gain global recognition in the form of prizes, appreciation, and publications of the results in the ITU News Magazine and ITU Journal on Future and Evolving Technologies (ITU J-FET https://www.itu.int/en/journal/j-fet), subject to acceptance.
- Employment and internship opportunities.

Benefits for partners:

- Visibility throughout the year
- Find global talent
- Find innovative solutions to your GeoAI use cases

AI/ML in 5G Challenge

Participant motivations



92% would recommend the Challenge to a friend or colleague

Global reach (2022)

- 1600+ participants
- 82 countries
- 14 hosts
- 16 open problem statements

The ITU GeoAI Challenge

Please check precise deadlines and evaluation criteria for each problem statement!		
LMR Problem Statement Submission: 1st Aug. - 15th Dec. 2022 (5 submissions for each team at most)	FAO Problem Statement First Submission: Oct. 1st Second Submission: Oct. 21st	UNICEF Problem Statement First Submission: Nov. 1st Second Submission: Nov. 15th

Best teams of each of the problem statements will be invited to present their solutions in the Challenge Finale which will be organized for each of the problem statements.

Prices & awards will be handed out at the respective Challenge Finale.

The ITU GeoAI Challenge

Prizes and certificates

Prize per problem statement
Winner: 1’000 CHF
Second place: 500 CHF
Third place: 200 CHF

Student award: 300 CHF

Not every problem statement may necessarily have a winner if the quality of the solution does not satisfy the judging criteria

ITU certificates:

- Winner per problem statement Honorable Mention
- Encouragement award
- Certificate of participation
- Finalists Challenge Finale 8
- Certificate of participation (for teams who submitted a valid solution but were not among the top teams)

WINNER CERTIFICATE

ITU AI/ML in 5G Challenge

Gold Champion (1st prize)

is presented to

Team BacalhauNET

for their innovative solution to the problem statement "Lightning-Fast Modulation Classification with Hardware-Efficient Neural Networks" in the ITU AI/ML in 5G Challenge 2021

14 December 2021

Houlin Zhao
Secretary General, ITU

Chaesub Lee
Director, ITU Standardization Bureau

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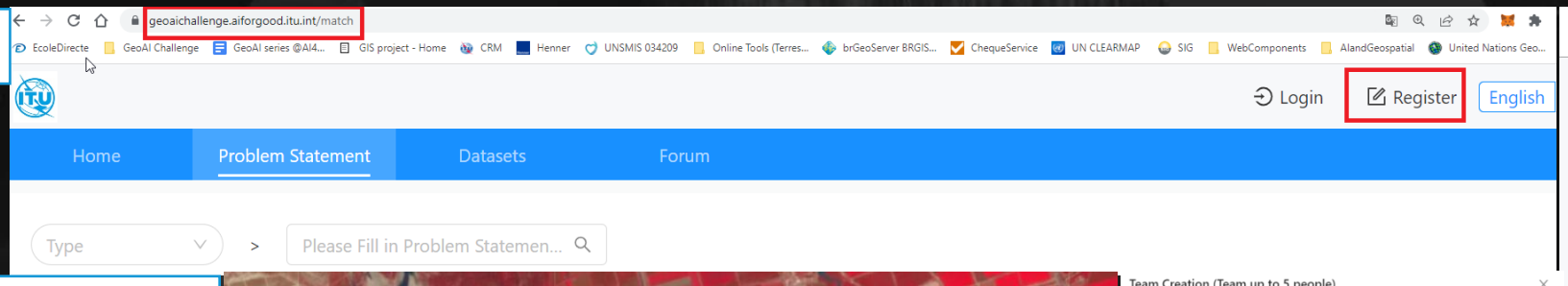
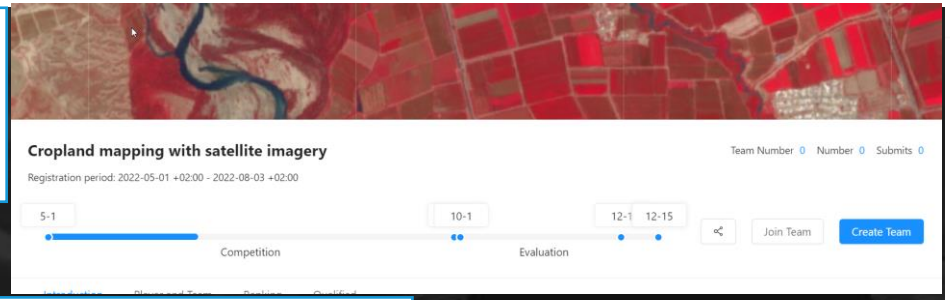
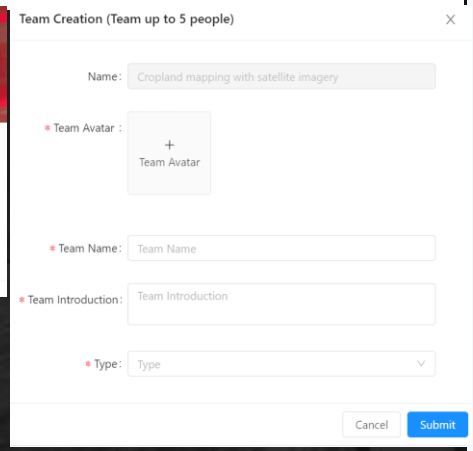
The ITU GeoAI Challenge

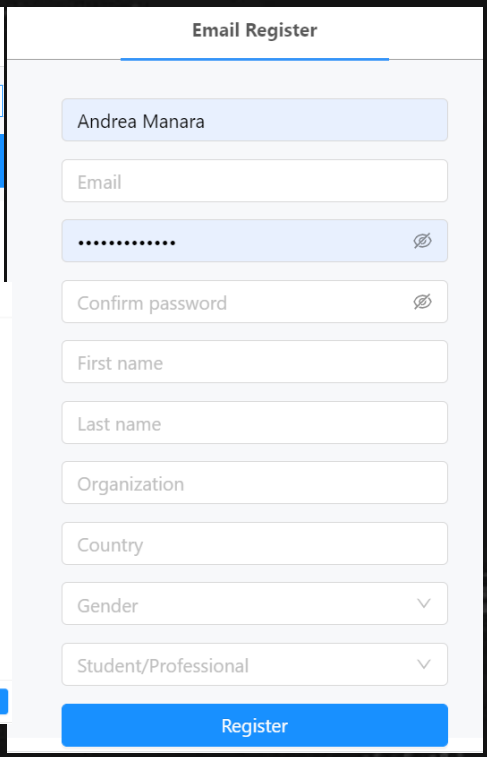
1) Register



2) Create or join a Team for one or more problem statement (s)







3) Download the data, work on your solution

4) Submit your solution

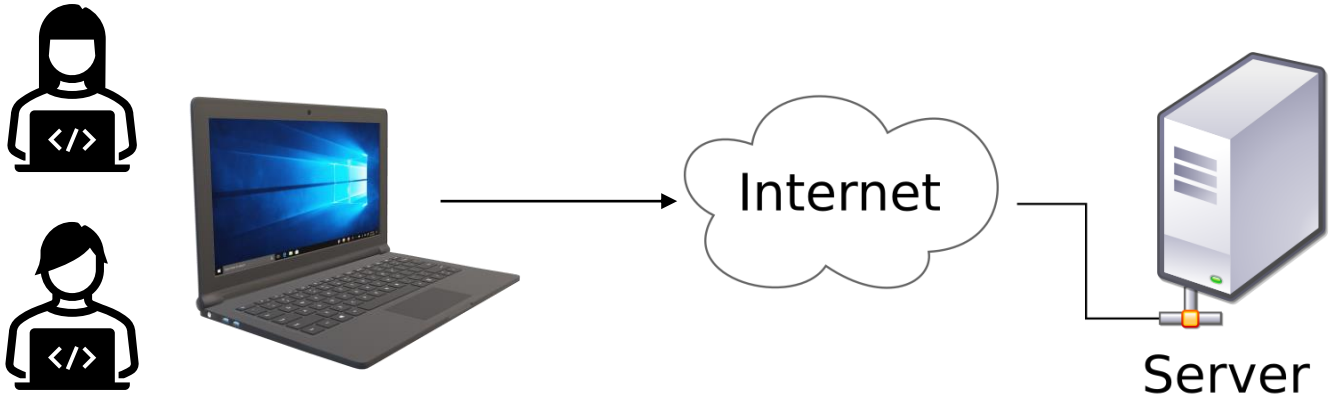
❑ State-of the art compute platform

ITU Challenge Compute platform

I. Free GPU access

II. Jupyter Notebooks

III. Python Kernel



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Our partners in 2022

Hosts of problem statements

unicef

Food and Agriculture Organization of the United Nations

UN Open GIS Initiative

QCRI
معهد قطر لبحوث الحوسبة
Qatar Computing Research Institute
جامعة حمد بن خليفة
HAMAD BIN KHALIFA UNIVERSITY

جامعة قطر
QATAR UNIVERSITY

Technical partners

中国人工智能产业发展联盟
Artificial Intelligence Industry Alliance

JL

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The ITU GeoAI Challenge

preparing **Location Mention Recognition from Social Media Crisis-related Text**

During disasters, tweets with critical information are not helpful for responders if not geotagged. This challenge aims to d evelop AI models for location mention recognition in crisis-related tweets.

Organizer: Qatar Computing Research Institute (QCRI, HBKU), and Qatar University (QU)

In Progress **School mapping with big data**

Through this challenge we are aiming at enhancing our previous algorithms to map schools using satellite imagery and d eveloping new ways to explain the results and biases driven by the algorithms.

Organizer: United Nations Children's Fund

In Progress **Cropland mapping with satellite imagery**

Remotely sensed imagery have been widely applied for cropland mapping, but existing cropland extent and crop intensit y products still have high uncertainty.

Organizer: Food and Agricultural Organization of the United Nations

Questions on problem statements

Location Mention Recognition

- Reem Suwaileh: `rs081123@qu.edu.qa`
- Muhammad Imran: `mimran@hbku.edu.qa`
- Ehsan Ullah: `eullah@hbku.edu.qa`
- Lokendra Chauhan: `lokendra@gmail.com`
- Ferda Ofli: `fofli@hbku.edu.qa`
- Tamer Elsayed: `telsayed@qu.edu.qa`

Cropland mapping with satellite imagery

Zhongxin Chen, zhongxin.chen@fao.org
Maria Antonia Brovelli, maria.brovelli@polimi.it
Tomaz Logar, tomaz@unglobalpulse.org

Question about data source and data processing
Pengyu Hao, pengyu.hao@fao.org, haopy819@gmail.com

When contacting for queations, please include "[Question for GEO-AI challenge]" in the title of email.

School mapping with big data

Giga mapping/tech team:
Dohyung Kim (dokim@unicef.org)
Iyke Maduako (imaduako@unicef.org)
Ivan Javier Dotu Rodriguez (jdoturodriguez@unicef.org)

UNICEF Sudan Country Office:
Rasha Obaid (robaid@unicef.org)

Questions on registrations, team creation, submissions:
mailto:GeoAI-Challenge@itu.int

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Join the Conversation

slack

itu-challenge.slack.com

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2022 Challenge edition

Thank you to our sponsors!

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Ministry of Science and ICT

ZTE

Organized by

ITU

Join us for the first GeoAI Challenge edition

find out more information

https://aiforgood.itu.int/about-ai-for-good/geoai-challenge/

https://geoaichallenge.aiforgood.itu.int/match/