



GWFF

GEOSPATIAL WORLD FORUM

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GeoAI and Beyond: Advancing the UN SDGs within the AI for Good Global Platform

Andrea Manara

International Telecommunication Union

**World Geospatial Forum
National Mapping Summit
16 May 2024**

aiforgood.itu.int

Image: NASA





AI for Good | ITU – Committed to connecting the world

193

MEMBER STATES

+1000

PRIVATE SECTOR ORGANIZATIONS

+150

ACADEMIA MEMBERS

3
Sectors



ITU Radiocommunication (ITU-R)

Coordinating radio-frequency spectrum and assigning orbital slots for satellites



ITU Standardization (ITU-T)

Establishing global standards



ITU Development (ITU-D)

Bridging the digital divide





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Organizer



40 UN Orgs



Co-convener





AI for Good

Multi-stakeholder **Interdisciplinary** Inter-generational



AI for Good Global Summit

Accelerating the United Nations
Sustainable Development Goals

Geneva, Switzerland, CICG

- 30-31 May 2024
- 29 May: AI Governance Day

REGISTER NOW

PROGRAMME

Behind the rise of geospatial AI

- Increased availability of geospatial Earth Observation data
- Advancement of AI
- Massive computational power

AI for Good | GeoAI activities

GeoAI Discovery

Channel on GeoAI applications, highlighting its relevance to the Sustainable Development Goals.

GeoAI Challenge

Competitions aimed at providing solutions for collaboratively addressing real-world geospatial problems by applying AI and ML.



UN-GGIM
ACADEMIC NETWORK



UN Open GIS
INITIATIVE

Curator of the GeoAI Discovery



Maria Antonia Brovelli
Politecnico di Milano

Past co-curators of the GeoAI Discovery



Nadine Alameh
Open Geospatial Consortium



Barbara Ryan
World Geospatial Industry





AI for Good | GeoAI Discovery Channel

GeoAI and Health

🕒 16:00 - 17:30 CEST, Geneva | 10:00-11:30 EDT, New York | 22:00-23:30 CST, Beijing

🗣️ Andrea Manara (ITU), Nadine Alameh (OGC), Ajay K Gupta (HSR.health)...

🔗 Discovery - AI and Health, Discovery - GeoAI

[VIEW DETAILS](#)

The future of GeoAI for Good with Google Earth Engine

🕒 17:00 - 18:00 CEST, Geneva | 08:00-09:00 PDT, California | 11:00-12:00 EST, New York | 23:00-00:00 CST, Beijing

🗣️ Barbara Ryan (WGIC), Rebecca Moore (Google), Maria Antonia Brovelli (Politecnico di Milano)...

🔗 Discovery - GeoAI

[VIEW DETAILS](#)

Spatial Digital Twins and AI: Racing into the Future

🕒 16:00 - 18:00 CEST, Geneva | 10:00-12:00 EST, New York | 22:00-00:00 CST, Beijing

🗣️ Peter Atalla (VoxelMaps, Inc), Nicolaus Hanowsk (ESA), Omar Maher (ESRI)...

🔗 Discovery - GeoAI

[VIEW DETAILS](#)

📅 21 September 2022

GeoAI and the digital transformation of agriculture, water and food systems

🕒 16:00 - 17:30 CEST, Geneva | 10:00-11:30 EDT, New York | 22:00-23:30 CST, Beijing

🗣️ Andrea Manara (ITU), Maria Antonia Brovelli (Politecnico di Milano), Zhongxin Chen (FAO)...

🔗 Discovery - GeoAI

📅 12 July 2022

Deep Earth Query: Information Discovery from Big Earth Observation Data Archives

🕒 16:00 - 17:30 CEST, Geneva | 22:00-23:30 CST, Beijing | 10:00-11:30 EST, New York

🗣️ Andrea Manara (ITU), Maria Antonia Brovelli (Politecnico di Milano), Begüm Demir (Technische Universität Berlin)

🔗 Discovery - GeoAI

📅 28 June 2022

Launch of the ITU GeoAI Challenge

🕒 15:30 - 17:30 CEST, Geneva | 09:30-11:30 EST, New York | 21:30-23:30 CST, Beijing

🗣️ Andrea Manara (ITU), Zhongxin Chen (FAO), Do-Hyung Kim (UNICEF)...

🔗 Discovery - GeoAI



AI for Good | GeoAI Discovery Channel

Hands-on workshops and Education series

Geospatial Foundation Model series

ITUEvents **794 replays**

AI for Good
GeoAI Discovery

GeoAI Solutions for Sustainable Development: The Handbook of Geospatial Artificial Intelligence (GeoAI)

Friday, 23 February 2024
16:00-17:00 Geneva (CET)
10:00-11:00 New York (EST)
23:00 - 00:00 Beijing (CST)
aiforgood.itu.int



ITUEvents **392 replays**

AI for Good
GeoAI Discovery

Geospatial Frontiers: Navigating the Future with Generative AI and Foundational Models

Friday, 1 March 2024
15:30-17:00 Geneva (CET)
09:30-11:00 New York (EST)
22:30 - 00:00 Beijing (CST)
aiforgood.itu.int



ITUEvents **> 8200 replays!!**

AI for Good
Webinar Series

Workshop: satellite data analysis and machine learning classification with QGIS – part 1

Tuesday, 27 April 2021
14:00 - 16:00 Geneva
aiforgood.itu.int



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AI for Good

Blagoj Delipetrov

Andrea Manara

ITUEvents **ALL YEAR ALWAYS ONLINE**

AI for Good

Rohini Swaminathan





Navigating GeoAI: Plotting the course for future education

	Speaker
Welcome and Intro (UN GGIM AN)	Maria Antonia Brovelli (chair UN GGIM AN, Poli Milano)
WP1 (Syllabus for developers)	Andrea Nascetti (KTH, Stockholm)
WP2 (Syllabus for appliers)	Ali Mansourian (Lund university)
WP3 (Syllabus for decision makers)	Parvathy Krishnan Krishnakumar (CTO, ABW, Amsterdam)
WP4 (Body of Knowledge)	Samantha Arundel (Director CEGIS, USGS, USA)
UN GGIM	Paloma Merodio (UNGGIM Chair ,VP INEGI, Mexico)
UN Geospatial Network, AI For Good	Andrea Manara (UN Geospatial Network, Lead GeoAI)
UN Open GIS	Ki-Joune Li (co-chair, Pusan Uni, South Korea)
UN GGIM PS	TBD
UN GGIM Geospatial Societies	Celine Rozenblat (chair)
UN ESCAP	Tiziana Bonapace, Director ICT and DRR Division, UN ESCAP
GEO	Wembo Chu, Scientific and Technical Officer, GEO
ISPRS Student Consortium	Laxmi Thapa, President SC
Open discussion	
Conclusion	Maria Antonia Brovelli

AI for Good Global Summit

Workshop

30 May

14:00-18:30

CICG room 15





Geospatial AI is helping to tackle the world's greatest challenges

aiforgood.itu.int

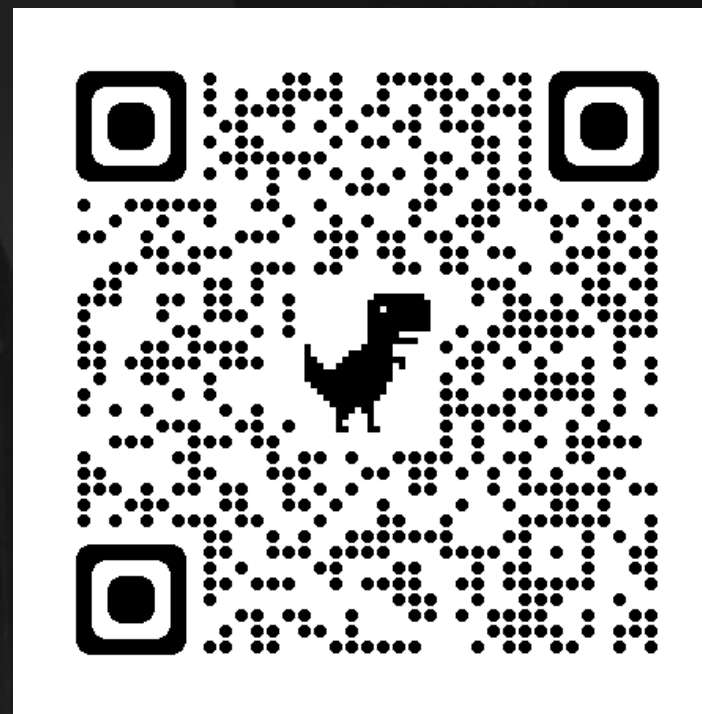
AI for Good | ITU GeoAI Challenge

Everything happens somewhere – Applying machine learning to geospatial analysis

To solve real-world geospatial problems by applying AI and ML to advance the UN SDGs

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

GitHub Repos





AI for Good | ITU GeoAI Challenge 2023

Problem statement	Organizations	Participants (Submitted)	Total Submissions	Countries (Africa)	Prize
Cropland Mapping	FAO, UNODC, UN Open GIS	333 (74)	2264	60 (23)	4'000 CHF
Air Pollution Susceptibility Mapping	Geolab (Politecnico di Milano)	210 (35)	225	40 (20)	1'000 CHF
Landslide Susceptibility Mapping	Geolab (Politecnico di Milano)	202 (20)	309	46 (20)	1'000 CHF
Estimating soil parameters from hyperspectral images	ESA Phi-lab together with KP Labs , and partner QZ Solutions	207 (62)	612	40 (19)	1'000 CHF
Location Mention Recognition (LMR)	QCRI (Qatar Computing Research Institute), QU (Qatar University), and Qen Labs Inc.	138 (28)	549	35 (21)	1'000 CHF

AI for Good | ITU GeoAI Challenge 2023



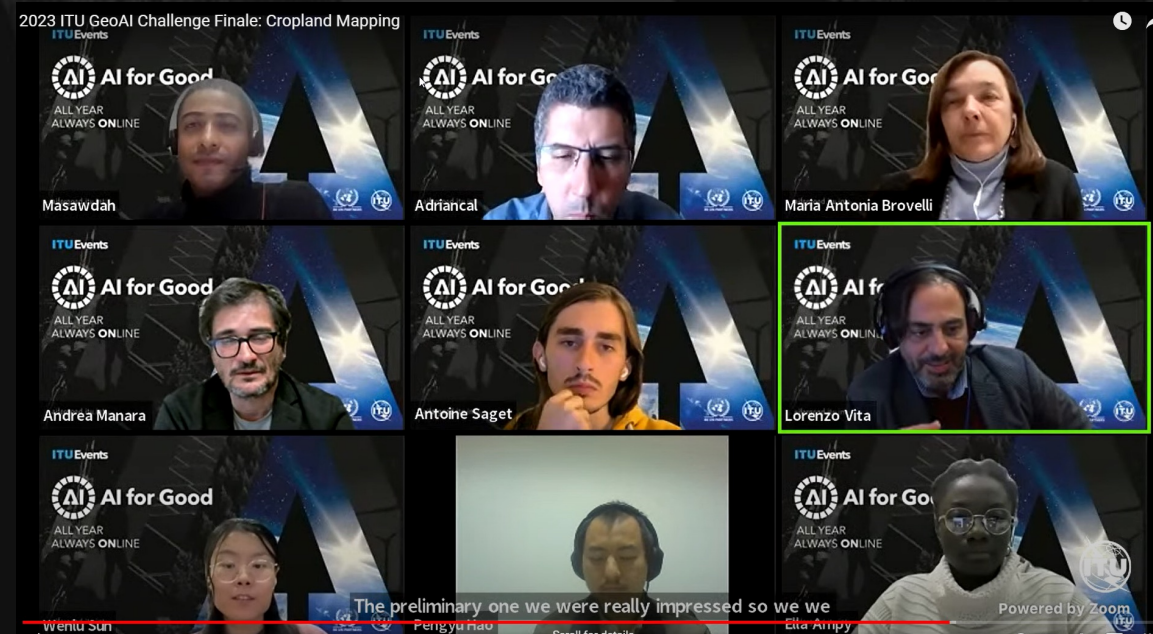
UN Open GIS
INITIATIVE

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Competition Leaderboard

This is the final leaderboard. The competition is officially closed and will not accept any more submissions. Congratulations to all that participated, points were distributed on 14 December 2023.

RANK	USER	PUBLIC SCORE	PRIVATE SCORE	LAST SUBMISSION	# SUBMITTED
1	Muamed_Tuo	0.94	0.946666666	6 months ago	29
2	antoine_saget	0.933333333	0.943809523	6 months ago	35
3	masawdah	0.94	0.94095238	6 months ago	99
4	sandrohu	0.928888888	0.933333333	6 months ago	6
5	Adrian_Cal	0.937777777	0.933333333	6 months ago	24



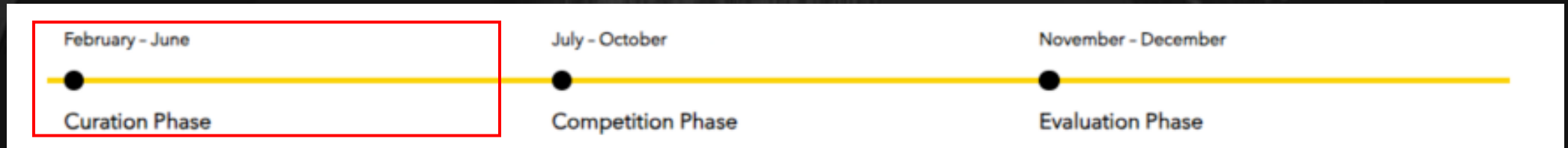
Special thanks to UNODG for allocating 3000 CHF for the prizes!





AI for Good | ITU GeoAI Challenge 2024

[GeoAI Challenge guidelines](#)



Problem statement

Organizations

Plastic mulched field mapping with satellite imagery

FAO

Surface water detection and mapping

United Nations Global Service Centre

Mapping clandestine runways in the Peruvian Amazon

UNODC

Mineral mines detection

UNODC

ICT infrastructure mapping

ITU

Estimation of ground-level NO₂ concentrations using remote sensing data with machine learning approach

Politecnico di Milano, Department of Civil and Environmental Engineering
University of Padua, Interdepartmental Research Centre in Geomatics (CIRGEO)





AI for Good | ITU Journal: Special issue on Geospatial AI

[Call for papers](#)

ITU Journal

Future and evolving technologies

Special issue

Geospatial AI to advance the United Nations Sustainable Development Goals

FREE | FAST | FOR ALL



Leading Guest Editor



Maria Antonia Brovelli, Politecnico di Milano, Italy

DEADLINES EXTENDED

- ▶ Paper submission: **30 June 2024**
- ▶ Paper acceptance notification: 30 September 2024
- ▶ Camera-ready paper submission: 30 November 2024



Interested in participating in AI for Good?

- Summit 30-31 May 2024
- Online events → all year round

Geospatial AI activities:

- Navigating GeoAI: Plotting the course for future education May 30th AI for Good Summit
- Ongoing episodes on GeoAI Discovery
 - Foundation Models
June 26th : Leveraging LLMs For Advanced Spatial Decision Support: The Case Of SATGPT
UN ESCAP (Hamid Mehmood)
- GeoAI Challenges related to the SDGs
 - Sponsor, Problem statement owner, Participant