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EUROPEAN UNION FOR ARMENIA

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Գերմանական
համագործակցություն
DEUTSCHE ZUSAMMENARBEIT

Implemented by:
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

UNDP

EU4Sevan: Environmental Protection of Lake Sevan

AUA American University of Armenia

Black Sea Universities Network
BSUN

H—A—CK—A—TH—O—N

OCTOBER 14—15 — 2021

LAKE SEVAN — ARMENIA

INTRODUCTION

As part of the Black Sea Universities Network (BSUN) Congress 2021, the American University of Armenia (AUA), in collaboration with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), invites you to participate in an open data hackathon. The hackathon will aim at better understanding the underlying drivers leading to the recent appearance of harmful cyanobacterial blooms in Lake Sevan and developing tools for the long-term monitoring of the lake's water quality.

DATE *&* LOCATION

October 14-15, 2021 at a location on the shores of Lake Sevan. A bus trip for the participants will be organized to visit important ecological sites along the Lake's shores.

There will be fast internet access at the location. The participants will be required to bring their own laptops.

THE CHALLENGE

Multidisciplinary teams comprising young researchers/practitioners in data science, machine learning, biology, chemistry, hydrology, geospatial (remote sensing) technologies, or the like are invited to participate in this hackathon.

The participants will be given high-resolution satellite and aerial (drone) images as well as ecological and hydrological data to analyze different components related to littoral vegetation and nutrient concentrations along the Lake's shores and tributaries.

Manual analysis of the imagery is extremely time-consuming. The participants will develop an automated image classification using machine learning tools as an alternative to the manual approach. This will allow analysis at much improved speeds and scales.

The ecological and hydrological data will aid in linking the processed image data to the underlying mechanisms of the lake's eutrophication and the recent appearance of harmful algal blooms through regression analyses and simple mathematical models.

The automated system will have broad applications for the assessment of the Lake's water quality and could be integrated into the local long-term monitoring scheme to ensure the ecosystem's health and sustainability.

WHO CAN PARTICIPATE?

Students and early-career researchers (up to 35 years of age) are encouraged to participate. Interested parties will be able to submit as teams (up to 5 persons). Individuals that do not have teams could team up with others from within the pool of participants.

Eager individuals with backgrounds in earth sciences (particularly aquatic ecology, plant biology, agricultural sciences), as well as remote sensing, GIS, image processing and data sciences are especially encouraged to apply. It is advisable for teams to contain a combination of the aforementioned backgrounds to cover all challenge needs.

PRIZES

The output of the teams will be judged by a jury of experts. The three award categories and amounts are:

First place -- 1.3 million AMD

Second place -- 800,000 AMD

Third place -- 400,000 AMD

DEADLINE *for* SUBMISSION

September 25, 2021