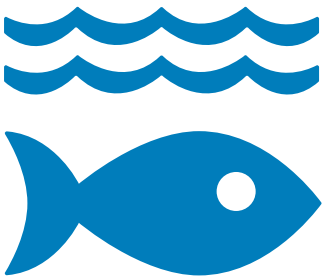
REVA UNIVERSITY
Bengaluru, India

SDG-14

14 LIFE BELOW WATER



Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Rukmini Educational
Charitable Trust

www.reva.edu.in

Chancellor's Message

REVA believes that conserving and sustainably using the oceans, sea and marine resources are important for sustainable development. To ensure the sustainability and conservation of oceans and marine resources, we at REVA promote various activities through a series of teachings, seminars, activities and awareness programmes and services. We strongly believe that alignment with SDG 14 can only address the drastic effects of ocean pollution and depletion of marine resources through various youth-related activities. REVA ensures to fight for it by conducting several training programmes, awareness programmes, dance performances, talks, lectures and social outreach programmes.

As a Social Impact University, we have realised that there are coastal regions and areas where sea and marine resources are depleting and it may have irreversible consequences if we do not act. Hence, by organising such events, REVA ensures that the SDG theme of 'Life Below Water' is focused on and ensures that activities are conducted on a regular basis in alignment with SDG.

Dr. P. Shyama Raju
Chancellor, REVA University

Pro Chancellor's Message

It is a proud moment for students and staff at REVA University as we have made a commitment to keep pace with implementing the United Nations Sustainable Development Goals. As a Social Impact University, we have introduced a number of key projects and policies in order to accomplish these SDGs. And I cannot be but thrilled to note that the dossier we have created for each of these SDGs is a testimony to our hard work and determination on how we have evolved as a Higher Educational Institution.

At REVA, we have carefully and thoughtfully planned activities related to each SDG. Be it gender equity programmes or charity events or heritage workshops or activities related to law and justice, or even Industry partnership and innovation programmes, we have encouraged close ties between communities around us, which in turn have a transformative impact on societal advancement.

Let's keep the momentum going and use this opportunity of aligning with SDGs as a potent tool to empower people, thereby liberating their minds and ultimately liberating society.

I wish the team all the best!

Best wishes,

Umesh S Raju
Pro Chancellor,
REVA University

Vice Chancellor's Message

REVA is one of the few Multidisciplinary Universities in the country which has adopted the SDG goals as part of the journey towards emerging as a Social Impact University. In my opinion, the journey has been a fulfilling one. As part of SDGs, we are committed to global challenges related to eradicating extreme poverty, putting an end to hunger and promoting inclusive and sustainable economic growth, full and productive employment, and decent work. The journey doesn't end there. We are also working to promote peaceful, inclusive societies, access to justice, and the creation of effective, accountable, and inclusive institutions.

By thoughtfully planning the activities, we have curated this dossier that is an example of our hard work and determination. I congratulate the team for all their efforts in ensuring that REVA contributes to the larger goal of betterment and a humane vision of higher education. We believe that by doing so we create a society that is committed to sustainable development and ultimately the improvement of the community and society.

I extend my best wishes to the team.

Best regards,

Dr M Dhanamjaya
Vice Chancellor,
REVA University

SDG - 14
Life Below Water

Introduction

SDG 14 is all about marine conservation and sustainable use of water and ocean-based resources. At REVA University, we aim to manage and protect marine and coastal ecosystems from pollution. Various activities like workshops, seminars, hackathons and classes are held regularly at REVA that help mitigate these challenges and enhance the conservation and sustainable use of ocean-based resources.

Hackathon on plastic-free rivers with Artificial intelligence towards sustainability

In alignment with Sustainable Development Goal- SDG 14, REVA University organised a hackathon on plastic-free rivers with artificial intelligence towards sustainability. The hackathon is meant to create a ripple effect of change by harnessing the power of AI to protect our rivers and water bodies. The goal of this Hackathon is to create new technologies and strategies to reduce plastic waste and create healthier and more sustainable rivers and oceans. This Hackathon is aligned with Sustainable Development Goals – SDG 14 life below water, conserving and sustainably using marine resources.

The challenge is to detect, classify, and segment the plastics in the given dataset and propose a viable and architecturally sound AI solution to curtail the plastic menace choking our rivers. The solutions must have actionable insights where the stakeholders, like the government and local support groups, can take preventive and proactive measures.

The dataset for this challenge is extracted from the images taken by drones across the river Saigon*. Large patches of several meters of water weeds (hyacinths) can entrain and aggregate large amounts of floating debris, including plastic items. The participants have to build an AI-based end-to-end solution to detect the plastic menace. Your solution will help the local authorities to know the plastic density in planning the cleaning schedules and resources.

Hackathon Timeline

This Hackathon has two phases culminating in a grand finale. Phase I is to build AI models to detect and count the plastic in the given images. In Phase II, the shortlisted entries must submit the final prototype and architecture to detect the plastic. Shortlisted 10 entries would receive mentorship from industry thought leaders leading to a grand finale.

Phase I: Model building

Detection and Counting of Plastic

1. Label the images for plastic. Accurate labelling is part of the Hackathon challenge.
2. AI-based object detection and counting of plastic in the images.
3. Geotagging and mapping of plastic.
4. Submit the results.

Phase II: Prototype submission

Feasible Solution and System Architecture

1. Demonstrate and deploy a feasible solution with system architecture for implementation. Show tech stack, dashboards and downstream actions which trigger a set of events for the detection and estimation of plastic and weeds.
2. Submit a prototype or an MVP.

Open Innovation Challenge

For special jury award

1. Build a spatiotemporal model capturing the metadata available in the images, including Latitude and Longitude, to detect moving and stationary plastic, weeds and other debris in the images.
2. You may use state-of-the-art algorithms to build efficient solutions to detect and curb plastic menace, which can help local authorities take intelligent actions. Build a solution to identify the severity of the menace and develop an early intervention and warning system.

Who can participate?

- AI Developers
- AI Architects
- Data Scientists
- AI Enthusiasts
- ML Engineers
- Programmers
- Freelancers
- Students

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