











**HACKATHON** 





























## Team name:

## Coding Enthusiasts

Team Members name:

- Nayni Singhal (Team Lead) [3RD Year] CSE(AI&ML)
- Shipга Mauгya [3RD Year] CSE(AI&ML)
- ☐ Vedanshi Kaushik [3RD Year] CSE(AI&ML)



























## Problem statement

The world generated
62 million tonnes of
e-waste in 2022, and
this figure is
projected to rise to 82
million tonnes by
2030.

Global E-Waste Monitor 2024

- ☐ E-waste is rapidly growing, with over **50** million tons generated annually.
- ☐ Current disposal methods are ineffective and lack user engagement.
- ☐ The need arises for an interactive platform featuring real-time e-waste tracking, educational resources, and gamified elements to encourage recycling, locate collection centers, and promote sustainable e-waste practices.

Only about 22.3% of this 62 million tonnes waste is properly recycled, wasting around \$62 billion worth of valuable resources annually.



















#### EEE INDIA COUNCIL









## Solution

## Interactive E-Waste Management

- Developing a user-friendly and interactive platform that transforms e-waste management into an engaging experience.
- The solution features real-time tracking of e-waste, educational resources on responsible disposal, and gamified elements to motivate recycling.
- Incorporation of tools for finding collection centers, earning rewards, and participating in recycling challenges to enhance user engagement and promote sustainable e-waste

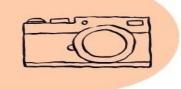
SDA COMMITTEE OF

IINDIA COUNCIL

#### **WORKING OF PLATFORM:**

#### **PUBLIC VEHICLES**

with cameras intalled capture the waste images (regular waste, E-waste)



#### **FILTRATION**

ML model pre filters images, it removes the useless images Object Detection + Quality



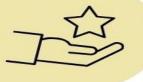
#### **CATEGORIZE**

Categorization of wastes (like organic, plastic, E-waste)



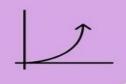
#### LOCATION

Extract the GPS location metadata.
Associate waste to location



#### SENDING ALERTS

Sending alerts to the respective locations authorities concerned according to the waste type and location.



#### **DISPLAY OF HOTSPOTS**

The authorities can display the data sent to them to display the waste hotspots



#### **USER INTERACTION:**

#### REPORT

Public users report about the waste via the mobile app or website by uploading photos of e-waste/trash



#### **VERIFICATION**

The ML model verifies the public reports and rejects the false/redundant reports (No points rewarded)



#### REWARDS

Valid reports earn points and Rewards (Gamified approach)



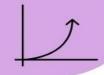
#### **RECYCLING CHALLENGES**

Users participate in the Recycling challenges and compete on Leaderboards



#### **COLLECTION CENTRE FINDER**

The nearby collection center is found for the e-waste



#### **EDUCATIONAL RESOURCES**

Resources to educate on e-waste disposal and recycling are provided



















### EEE INDIA COUNCIL













Real-Time E-Waste Tracking



**Gamified Recycling** 



Reward System



Educational Resources



Collection Center Finder



Community Challenges



















### EEE INDIA COUNCIL



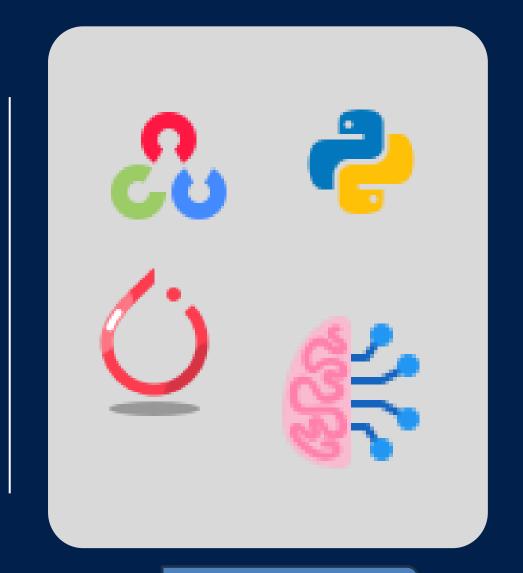


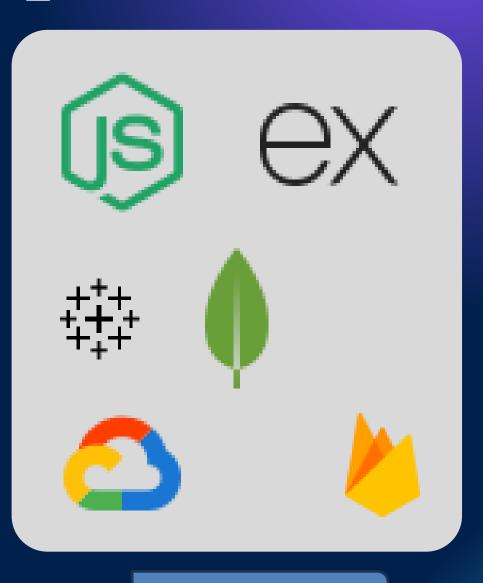




## Tech Stack







FRONTEND

MACHINE LEARNING

BACKEND





























## Future aspect

#### **Al-Powered Recycling Suggestions**

Personalized tips via AI, boosting engagement and user retention.

#### **Blockchain for Secure Recycling Data**

Ensures transparent, traceable e-waste processes, building user trust and partnerships.

### Sustainability Education Hub with Sponsored Content

Rewards users with redeemable points, fostering brand loyalty and partnerships

#### **Gamified Recycling Rewards Program**

Offer sponsored educational content, generating revenue and promoting sustainability awareness.

#### **Corporate Partnerships & Bulk Recycling Programs**

Partner with businesses for bulk recycling, generating new B2B revenue streams.



















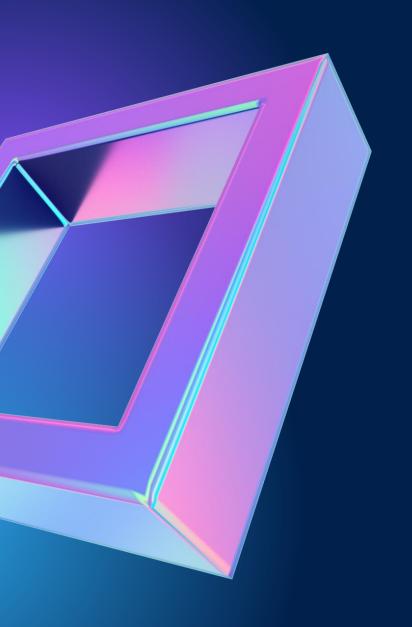












# nan Kou





**IINDIA COUNCIL** 











