**EcoCheck.AI**

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**Description:** An AI-enabled model to assess the Environmental Impact of a product, with the product’s chemical composition.

# **Why?**

We are all aware that the majority of globally competitive businesses today operate under business models that force them to reduce expenses and boost profit margins while sparing no expense for matters of safety, the environment, etc. Environmental degradation may result from a company's failure to do environmental impact study on its products.

An Environmental Impact Assessment (EIA) has benefits that much surpass its costs, yet it is never completed because of commercial constraints and a lack of understanding, especially among small businesses.

This project aims to fix this issue, for the benefits of companies, their customers, and our environment by creating a cost effective & simple solution for manufacturers by aiding in EIAs.

# **How did I do it?**

I had attended a AI bootcamp in Data domain organized by Intel & CBSE, during the final phases, when we were guided to explore for problems and find solutions, the idea of a EIA tool sparked in my mind and I named it Eco Check.AI, I proposed this to my friend Krishna Ajay Jeswani in IX D, I was in charge of the coding and notebook UI, while he helped me make the dataset and designs for the web UI.

Then we prototyped a Neural Network that classifies a product's environmental effect into High, Moderate, and Low utilizing % composition of "Metals," "Plastics," "Electronics," "Hazardous Liquids and Substances," and "Ceramics" using AI techniques I learned during the bootcamp.

\*\*\* Certificate in the folder, File Name- 1. AI Accomplishment Certificate - Bootcamp CBSE (Maulik Mani).pdf

2. AI Accomplishment Certificate - Bootcamp CBSE (Krishna Ajay Jeswani).pdf \*

# **How does the Prototype work?**

\*[.] Cell No. in Juypter Notebook (File name- EcoCheck.ai.ipynb) \*\*Prototype, future plans are listed ahead

# **Future Plans 📋**

While working on the project we had a time constraint of 5 days (as part of the 15 day bootcamp), we couldn’t work on its other aspects like detailed reports, make/using a better and more accurate well suited dataset, UI etc.

Aspects which we can work on to make EcoCheck.AI market ready: -

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## **Dataset accuracy-**

This aspect is where we might need to consult experts and our teachers as different amounts of chemicals in different proportion react and impact differently, for the prototype we made the dataset on the simple rule of more the amount more the impact since we mainly choose chemical parameters that were toxic and hazardous. If we invest more time into making a more accurate dataset, the EIAs accuracy will increase proportionally.

## **More Detailed report and solutions**

In the prototype we just let the user know whether the impact is High, Moderate, or Low, but a more detailed report would consist of for example-, which part of the biosphere is impacted the most? Which chemicals are increasing their impacts and other things that would help convince manufacturers to improve their products.

Along with the report, solutions and alternative resources which would be affordable and sustainable can be proposed so that the manufacturers can effortlessly create an action plan.

## **Better UI & Accessibility**

We had initially planned to deploy the model on a website which would have Python based backend, using WebDev skills we had self-thought ourselves, but due to time constraints we had to stick to a text based UI in the prototype. A website can be accessed from almost any place now thanks to the rise in internet penetration and more affordable service charges, this way any manufacturer from a small home business to a large company can try the app.

## **Monetization (Less priority)**

We hope to make EcoCheck.AI a paid service and a limited feature version for the public to try, the service especially to be used by EIA service providing organization (like Environ India & A&N Technologies) and government authorities in the future once it’s market ready and has gained a basic user base.

# **Bonus Benefits for users: - 📈**

1. The users and companies who are aware and want to take the initiative to do a EIA, usually have to contract an organization which give EIA services (like Environ India & A&N Technologies), which usually charge a premium for it, this lead to increasing the company’s expenses. Whereas if the use EcoCheck.AI they will save on these expenses.
2. For the companies who provide EIA services (like Environ India & A&N Technologies), can use EcoCheck.AI which will help them reduce labour costs and increase their efficient as AI will take far less time to process and predict the impact. This will help to make their services more affordable and reduce their delivery time.
3. Since we don’t have any near future plans for monetizing EcoCheck.AI and making it a paid curious & concerned consumers and public can also access the tool and check the environmental impact of a product, if they find any discrepancies between the EcoCheck.AI’s report and what the company reports they can ask the company for justification. This will ensure sustainable and best quality products for everyone

# **Thank You -**