The correspondence of artificial intelligence with the psychological patterns, and application of recognition systems and gamification in accelerating recycling worldwide

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Abstract

Approaching the end of the last decade, artificial technology has been unutilized in fields such as healthcare, E-commerce, agriculture, etc. For the mere purpose of diminishing the inaccuracies found in human-adapted practices, Ai technology is aptly more sufficient; produces fewer errors and can be reformed and applied in numerous fields. The environmental companion—a product of AI technology—renovates the foundation of recycling. Now with access to a recycling medium, people can view their carbon footprints, monitor their plastic waste, and recycle their materials with gained virtual points.

I. Introduction

Plastic is drawn from two primary resources: ordinary littering and materials disposal, which eventually pile up in water bodies. For instance, the Danube River—the second largest river in Europe that flows into the mouth of the black sea, transports plastic materials reckoned at 4.2 metric tons into its drainage base. The interference of physical factors such as the wind and current flow determines the buoyance and movement of these plastic items within a water body. For example, windage contributes to measuring the force required to transporting these items.

By the end of this disposition, plastic settles in water bodies in articulated spaces, eventually being eroded into debris by the external circumstances of sunlight, oxidation, and current. [1] The environmental conservation agency pronounced countries located at coastlines the foremost exporters of Plastic mismanagement (With a percentage of 83% impact) amongst which, Egypt sets atop in the seventh-place (69%), as shown below in the figure. Countries located at coastlines the foremost exporters of Plastic mismanagement (With a percentage of 83% impact) amongst which,

Rank	Country	Percentage of waste that is mismanaged	Quantity of mismanaged plastic waste (MMT/year)	Percentage of global mismanaged plastic waste	Quantity of plastic marine debris (MMT/year)
1	China	76	8.82	27.7	1.32–3.53
2	Indonesia	83	3.22	10.1	0.48–1.29
3	Philippines	83	1.88	5.9	0.28–0.75
4	Vietnam	88	1.83	5.8	0.28–0.73
5	Sri Lanka	84	1.59	5.0	0.24–0.64
6	Thailand	75	1.03	3.2	0.15–0.41
7	Egypt	69	0.97	3.0	0.15–0.39

Figure 4: Quantity of mismanaged plastic wastes

Egypt sets atop in the seventh-place (69%), as shown below in figure 1.

II. AI application in mitigating mismanagement

Recycling, unlike other disposal methods, is inhibited by factors such as commodity, availability, and collective efforts

of the community. [2] Accordingly, difficulties with recycling are represented in the collection and sorting of plastic waste.

Nevertheless, an AI system could mount up the adaption of recycling. For instance, if a system where plastic consumers could document, recycle, and gain virtual points in exchange for their plastic consumption could be the ultimate solution to change the stir in consuming these materials.

The environmental companion, founded on the use of AI systems, virtual points, and the psychology of the market, meets the criterion in that it triggers the patterns of self-awareness of mostly Genz and millennials to detract the waste by-product of plastic consumption and production.

III. The philosophy behind the application

The environmental companion is an application wherein people access a credible medium through which they can recycle, be of zero plastic waste thereof. The application consists of three different sections, each articulated to a function, however, the sections abide by a certain feedback mechanism; recollected in the creation flowchart of this application, it was found out that users engaged seldomly when the application only consisted mostly of either texts or illustrative graphics. The primary (Environment-or I) section is the profile: where the data about the user is to be included, such as names, email addresses, and a unique code for this user. According to the app market, citing patterns of success, the sense of personalization renders more engagement with the overall process. Furthermore, the consistency of the sections' pronunciations and the purpose of said sections draw the user to be more decisive when using the application. The primary section includes a display of the virtual points (environs) added at the end of every successful recycling procedure, these virtual points can be traded with biodegradable materials with partnering agencies such as the recycling local committee. The second is the data recorder. In this part, the consumers will be able to record their plastic usage data through AI recognizers that will recognize the serial code embedded on the material, the serial code details dimensions such as weight, volume, and density of the material. The third section is the activity curve, which showcases the immensity of plastic used and recycling occurrence in respect to time. According to the science of feedback, the user will mentally tie every rise and fall within the activity curve according to the virtual points they gain. Thus, this gamification system will trigger more engagement, more recycling thereof.

IIII. Proceeding to the final step

Upon fulfillment of the recycling task, the users will be required to toss their materials into trash bins. These bins are exclusively designed with sensors of weight and volume.

These sensors are not only compromised of a system that will recognize the dimensions but will also communicate data back and forth from the bin to the administrative application. These trash bins are designed for the sole purpose of collecting the to-be recycling materials and

ensuring credibility between the administrators and users as to when handing out virtual points to the users. When the user initiates a recycling process—by having the serial code recognized on the application, they will receive an

email of the foremost nearby trash bin in their proximity. Once the materials are deposited in the bin and the dimensions data are congruent: the recycling process will be affirmed, and the user will be notified of a rise in their virtual points.

IV. Conclusion

The properties that give rise to plastic affordability, availability, and excessive use in the market, also give rise to the foremost pollutant in water bodies [3]. Thus, if consumed with the absence of treatment via recycling, the plastic could evidentially pile up in the habitats affecting both aquatic and

land creatures. The debris of plastic directly influences the habitat of mussels, salt-march grasses, and corals, alongside creatures such as reptiles and turtles who rely on water

spaces for their survival. Ultimately, the mission to mitigate plastic use is collectively based on the empirical shifting in the regulations set by the environmental agencies worldwide. Thus, with a change such as that of implementing the environmental companion,
the plastic crisis will eventually be eradicated.

V. References

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