

A collection of cosmetic brushes and palettes is arranged on a dark, textured background. The brushes, located on the left side, have black handles with gold-colored ferrules and various types of bristles, including large fluffy ones and smaller pointed ones. Some brushes have red or orange accents on their handles. On the right side, there are several open makeup palettes. One palette at the top right contains shades of red, orange, and pink. Another palette below it features a wider range of colors including pinks, yellows, blues, and greens. A third palette at the bottom right shows shades of pink, orange, and grey. The text 'Cosmetic Harmfulness Checker' is centered in the middle of the image in a large, white, sans-serif font. Below it, the text 'R180446- B.Rakesh' is also centered in a smaller, white, sans-serif font.

Cosmetic Harmfulness Checker

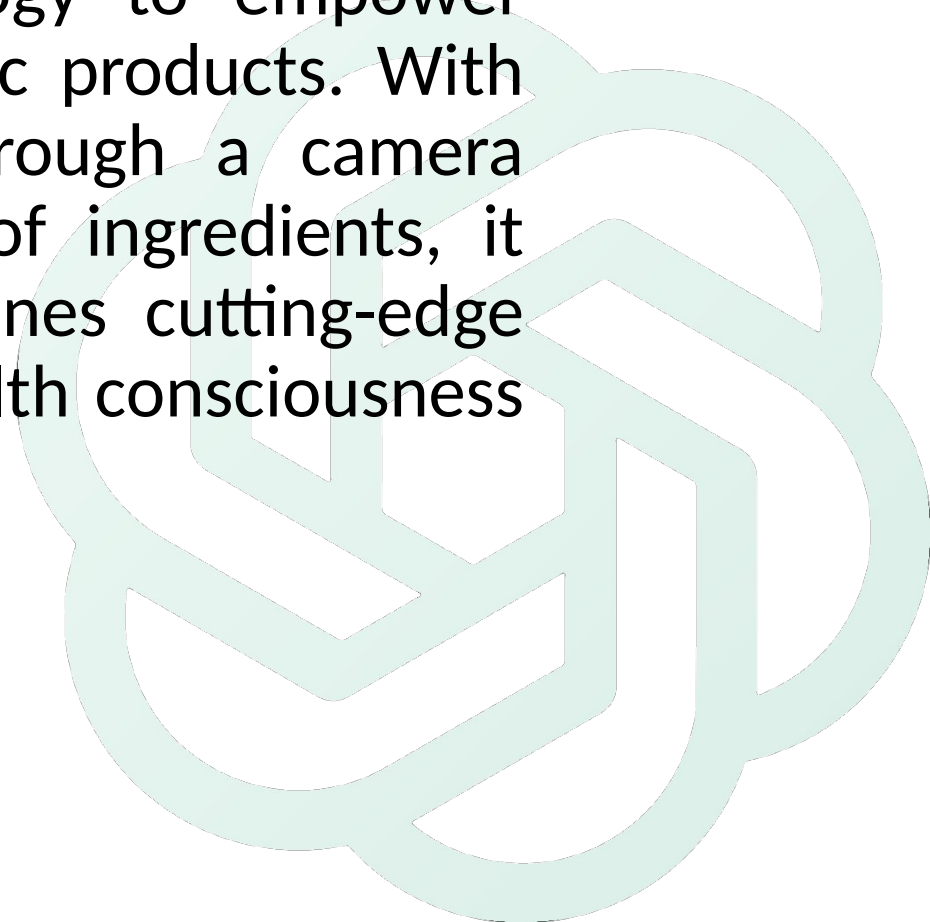
R180446- B.Rakesh

Outline

- Introduction
- Abstract
- Industry challenge
- Understanding the Cosmetic Harmfulness Checker
- User interface
- Features and Functionality
- Ensuring Accuracy and Reliability
- Future Developments and Conclusion

Introduction

The "Cosmetic Harmfulness Checker" is a user-friendly application using computer vision and Chatbot technology to empower consumers in evaluating the safety of cosmetic products. With features like automatic label recognition through a camera interface and Chatbot-powered assessments of ingredients, it simplifies decision-making. This project combines cutting-edge tech to promote consumer awareness and health consciousness in the cosmetics industry.



Abstract

A Cosmetic Harmfulness Checker is a tool designed to help consumers make informed decisions about the safety and potential risks of beauty products. In an era where cosmetics are widely used, ensuring the safety of these products is crucial for consumer health.



Industry Challenge

- **Diverse Ingredients:** "A multitude of cosmetic products flood the market, each containing a unique combination of ingredients."
- **Lack of Transparency:** "Consumers often face challenges in understanding the composition of these products and the potential risks associated with specific ingredients."
- **Health Concerns:** "The need for consumer awareness is heightened as exposure to harmful cosmetic components can lead to adverse health effects."

Importance of Checking Cosmetic Harmfulness

- **Consumer Safety:** Many cosmetic products contain chemicals that can have short-term or long-term health effects. Consumers have the right to know what they are applying to their skin.
- **Legal Regulations:** The beauty industry is subject to regulations, and using harmful ingredients can lead to legal consequences for manufacturers.
- **Long-term Health Impact:** Continuous exposure to certain chemicals can have cumulative effects on health. The harm may not be immediately apparent.

User Interface

- **Tkinter GUI:** "Developed using Tkinter, the interface offers a visually appealing and user-friendly platform."
- **Manual Input:** "Allows users to manually input cosmetic names for analysis."
- **Automated Detection:** "Enables users to effortlessly utilize the camera interface for automated detection of cosmetic product labels."

Features and Functionality

- Real-Time Detection: Seamlessly identifies cosmetic product labels, simplifying the user experience."
- "Chatbot-Powered Insights: Leverages advanced NLP for comprehensive assessments of ingredient safety."
- "User-Friendly Interface: Ensures accessibility and convenience for users, whether inputting names manually or using the camera."
- "Promoting Transparency: Provides users with transparent information about cosmetic ingredients for informed decision-making."
- "Educational Value: Acts as an educational tool, empowering users with knowledge about potential harmful ingredients."
- "Scalability and Future-Ready: Designed for ongoing improvement and adaptability to emerging technologies."

Project Objectives

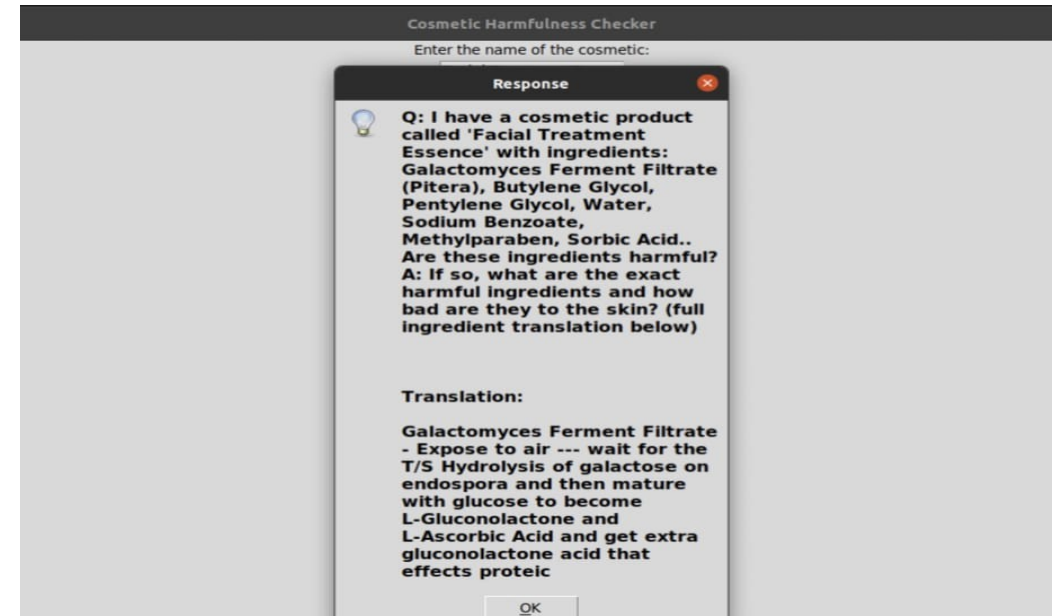
- Clearly list the primary objectives of the Cosmetic Harmfulness Checker project Integration of computer vision for object detection
- Utilization of NLP through Chatbot for ingredient analysis
- Developing a user-friendly interface for easy interaction

Working



The screenshot shows a web application titled "Cosmetic Harmfulness Checker". Below the title, there is a text input field with the placeholder text "Enter the name of the cosmetic:". The field contains the text "Facial Treatment Essenc". Below the input field is a button labeled "Check Harmfulness".

Input



The screenshot shows a modal window titled "Response" with a close button in the top right corner. The modal contains a lightbulb icon and the following text:

Q: I have a cosmetic product called 'Facial Treatment Essence' with ingredients: Galactomyces Ferment Filtrate (Pitera), Butylene Glycol, Pentylene Glycol, Water, Sodium Benzoate, Methylparaben, Sorbic Acid..
Are these ingredients harmful?
A: If so, what are the exact harmful ingredients and how bad are they to the skin? (full ingredient translation below)

Translation:

Galactomyces Ferment Filtrate - Expose to air --- wait for the T/S Hydrolysis of galactose on endospores and then mature with glucose to become L-Gluconolactone and L-Ascorbic Acid and get extra gluconolactone acid that effects proteic

At the bottom of the modal is an "OK" button.

Output

Scope and Future Enhancements

- **Object Detection and Recognition:**

- "Scope includes implementing advanced object detection algorithms for improved accuracy."
- "Exploring additional AI models for nuanced label recognition and text extraction."

- **Dataset Integration:**

- - "Potential to expand the dataset for a more comprehensive coverage of cosmetic products."
- "Incorporating user reviews to enrich the dataset and enhance analysis."

- **User Interface Development:**

- - "Refining the OCR (Optical Character Recognition) for more accurate text extraction."
- "Exploring user customization options for a personalized experience."

To add object detection functionality to detect cosmetic products through computer vision.

- live feed through camera

Conclusion

- At its core, the "Cosmetic Harmfulness Checker" operates through two key components. The first, "Object Detection and Recognition," utilizes advanced computer vision techniques. Users can effortlessly point their cameras at cosmetic products, enabling the application to automatically capture and identify product names. The second, "Chatbot-Powered Assessment," further enhances the user experience by querying OpenAI's GPT-3 for insights into the safety of detected cosmetic ingredients.

Thank you