

Current Trends in Hair Growth Research and Evidence-Based Hair Care Solutions

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Abstract- Hair is a crucial aspect of personal hygiene and self esteem, but there are people who need help with that information, personalized solutions that are easy to access. The paper discusses the design and development of Haircare Application which people can use all ages, men, women and children . The application combines features like a tailored hair care routine, hairstyle recommendations, home remedies, AI-based approach for your hairs analysis, salon appointments, doctor consultations and progress check-ins from the doctors in practice as well as an on-demand marketplace to explore haircare products. Features It uses AI technology to analyze hair conditions and suggest appropriate treatments and routines. Users will have the ability to keep track of a schedule calendar, progress with hair from day-to-day basis, and receive expert you-need to suit your needs, exactly when needed. The application endeavors to merge technology with daily haircare necessities, establishing a digital one-stop solution that elevates the customer experience and encourages convenient healthy habits while acting as an interactive bridge between individuals, experts and products. It addresses accessibility as well as promotes informed decision-making in haircare management.

Keywords- Artificial Intelligence, Hair Loss Detection, Scalp Analysis, Mobile Health Application, Personalized Recommendation System, Computer Vision, Digital Haircare, Dermatology, Flutter App, Preventive Healthcare

I. INTRODUCTION

Hair plays a significant role in an individual's appearance and overall confidence. However, maintaining healthy hair can be challenging due to factors such as lifestyle, environmental conditions, and lack of proper guidance. People often rely on scattered information from various sources, which may not always be accurate or suitable for their specific hair type or condition.

To address these challenges, this project introduces a Haircare Application designed to provide a centralized platform for all hair-related needs. The application is inclusive, supporting users across different age groups, including men, women, and children. It offers a wide range of features such as haircare tips, hairstyle recommendations, natural home remedies, and access to professional services. A key feature of the application is its AI-based hair analysis, which helps users understand their hair condition and receive personalized recommendations. Additionally, users can book salon appointments, consult doctors for hair-related issues, and follow a structured routine through an integrated calendar. The progress tracking feature enables users to monitor improvements over time, while the marketplace provides easy access to recommended haircare products.

By integrating these functionalities into a single platform, the application aims to simplify haircare management, improve accessibility to professional guidance, and promote healthier hair practices. This project highlights the role of technology in transforming traditional self-care routines into smart, data-driven solutions.

II. PROBLEM STATEMENT

In recent years, the beauty and grooming industry has seen a significant shift toward personalization. Despite this, selecting an appropriate hairstyle remains a challenging and often uncertain process for many individuals. Most people still rely on traditional approaches such as salon catalogs, verbal consultations with stylists, or simple trial-and-error. These methods are not only time-consuming but also inherently limited, as they fail to provide a clear and realistic visualization of how a particular hairstyle will appear on an individual.

A key difficulty lies in the inability of users to preview hairstyles tailored to their unique facial features. As a result, decisions are often made based on assumptions rather than informed choices, leading to dissatisfaction—especially in situations where appearance plays a crucial role, such as weddings, social events, or professional settings. Existing digital solutions attempt to address this issue; however, many of them offer only generic overlays or a limited set of styles, lacking accuracy and personalization.

From a professional perspective, hairstylists also face challenges in effectively understanding and translating client expectations into actual results. Miscommunication between clients and stylists is common, often resulting in outcomes that do not align with the client’s vision. This gap highlights the absence of an intelligent system capable of bridging user expectations with practical visualization.

To address these limitations, AmazeHair is proposed as an interactive digital platform that leverages image processing and intelligent recommendation techniques to enhance the hairstyle selection experience. The system enables users to upload their images or capture them in real time and virtually experiment with a variety of hairstyles. By analyzing facial features and structure, the platform provides personalized recommendations, allowing users to make more confident and informed decisions.

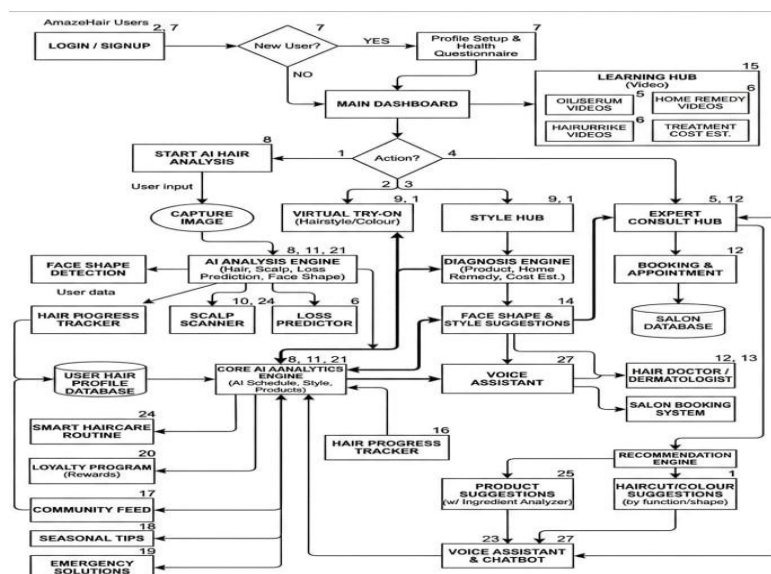


Figure 1: System Flow of the application

In doing so, AmazeHair not only improves user satisfaction but also facilitates clearer communication between clients and professionals, thereby contributing to a more efficient and reliable grooming experience

III. RESULTS



Figure 2: AI-based hairstyle recommendation module with gender/age selection and image upload for face detection

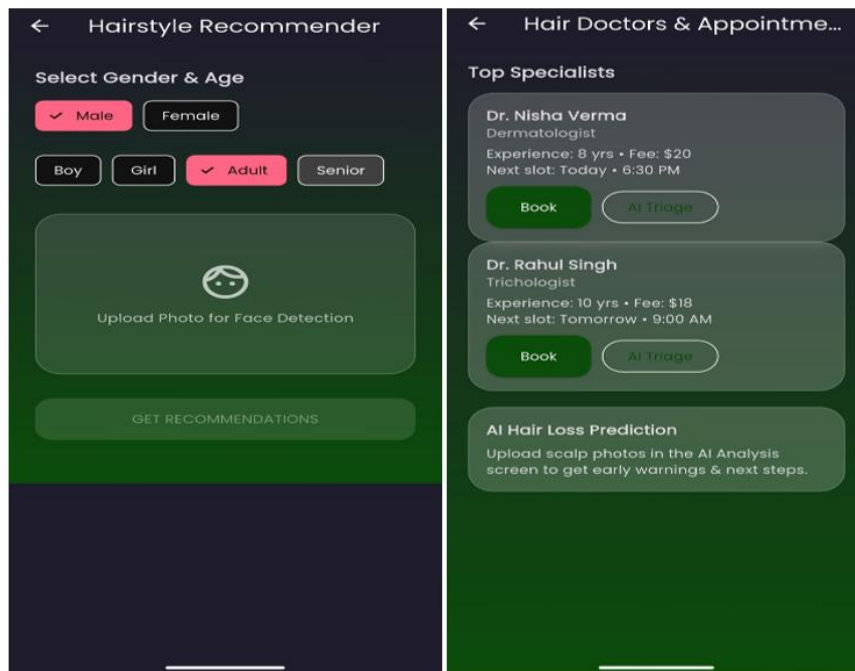


Figure 3: the hair specialist consultation module featuring doctor listings, appointment booking, AI triage option, and hair loss prediction functionality

IV. CONCLUSION

- This paper presents AmazeHair, an AI and AR-based haircare application that enables accurate detection of scalp conditions and provides personalized treatment recommendations with real-time visualization. The system integrates intelligent diagnostics, user-centric design, and engagement features such as progress tracking and reward mechanisms.
- The results demonstrate that the AI model delivers reliable analysis of hair issues, while the AR module enhances user confidence and decision-making. The inclusion of gamification further improves user consistency, making haircare a structured and data-driven process.
- Overall, AmazeHair highlights the effectiveness of AI-AR integration in digital health and beauty, offering a scalable, accessible, and future-ready solution for personalized haircare applications

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