Abstract

Hair and scalp diseases affect a significant portion of the population, often leading to physical and psychological discomfort. Early and accurate diagnosis is crucial for effective treatment, but traditional methods require clinical expertise and can be time-consuming. This project, titled **"Deep Learning-Based Detection of Hair and Scalp Diseases from Images,"** leverages deep learning techniques to provide an automated solution for detecting common hair and scalp conditions.

The system is built using convolutional neural networks (CNNs) to classify ten distinct hair and scalp diseases, including **Alopecia Areata, Contact Dermatitis, Folliculitis, Head Lice, Lichen Planus, Male Pattern Baldness, Psoriasis, Seborrheic Dermatitis, Telogen Effluvium,** and **Tinea Capitis**. A labeled dataset sourced from Kaggle was preprocessed and used to train the model. The project incorporates a custom CNN architecture, MobileNetV2, and VGG16 with pretrained weights for performance comparison.

The final model achieved high accuracy, demonstrating its potential for real-world application. A user-friendly interface enables users to upload images securely for disease detection, maintaining anonymity. This project aims to simplify the diagnosis process, enabling quicker interventions and improving accessibility to dermatological care.