

Title In English:

The Role of Artificial Intelligence in Curly Hair Analysis

Title In Arabic:

دور الذكاء الاصطناعي في تحليل الشعر المجعد

Abstract

Curly Girl Method (CGM) is a routine dedicated to curly hair to help individuals understand the nature of their hair and deal with it without causing harm to it. The method relies on avoiding harsh ingredients such as sulphates and silicone, which can damage curl health and moisture balance.

Choosing suitable curly-hair products is a major challenge because the chemical ingredients that should be avoided are difficult for individuals who are not familiar with chemistry to identify them, and achieving the balance between protein and moisturising requires time and experience to know the hair condition and choose a suitable product that achieves this balance.

From this perspective, this work aims to enhance the accuracy of curly hair analysis and to provide personalized CGM experience by AI. The proposed approach relies on a combination of image processing, deep learning, and computer vision techniques, a Convolutional Neural Networks (CNNs) and hair segmentation models will be used to detect curl patterns, frizz levels, density, and overall hair condition

Objectives

This work aims to analyze curly hair and recommend suitable products using AI techniques, through analyzing curly-hair texture. The propose is to design an AI-based model capable of:

- Analyzing curly hair from images.
- Determining hair condition (protein - moisture balance, frizz, etc).
- Recommending CGM-approved products.