CSE499A.15

Group 05

Student Name and ID

1. Emon Hossen 2211106042 (Developed pipeline to retrieve relevant herbs/compounds for skin disease images.)

2. Faheem Hasnat 2211721642 (Integrated CLIP VLM to extract embeddings of two dataset)

3. Kazi Tanora Akther 2132580642 (Testing CLIP on a small sample)

Paragraph 1:
In this phase, we focused on integrating the Dermnet dataset with the CLIP Vision-Language Model (VLM) to establish connections between dermatological images and textual herbal information. Initially, we used a limited sample of the Dermnet dataset to test CLIP's performance and refine our preprocessing workflow. After validating the initial results, we extended the process to the entire dataset of over 48,000 labeled images, generating structured metadata that linked each image path with its disease class. Using CLIP, we trained on all train images and evaluated test samples to identify herbal compounds most semantically related to each skin condition.

Paragraph 2:
The purpose of this work is to create an AI-driven bridge between visible skin diseases and plant-based medicinal treatments. By leveraging CLIP's multimodal understanding, our model suggests relevant herbs or compounds for specific dermatological conditions. In the future, we plan to improve accuracy through fine-tuning and LoRA optimization, and build a user-friendly web interface that allows patients or researchers to upload skin images and receive personalized herbal treatment recommendations.