Guided Projects Artificial Intelligence & Machine Learning

Guided Projects: Feature Engineering

Hashing: Querying in Face Datasets

Hashing is most commonly used to implement hash tables and for data encryption. A hash table stores key/value pairs in the form of a list, while the hash function maps the elements of the dataset via a key and generates hash values. A real-world recognition system has to cope with several unseen individuals and determine whether a given face image is registered or not, and thus, certain elements in databases can be found **much faster-using hashing** functions and **classification methods.**

Question:

Implement a basic hashing model from scratch that hashes the images. You can use any dataset of few images and can implement a-hash or any other hashing algorithm of your choice. For a-hash, given any images, first resize the image to a suitable size, followed by grayscale conversion of the image. Then mean normalize the image to obtain a binary image, whose sum can be used as a hash value. Using the hash model, encode all the images present inside your directory and then search for images similar to the query image.