JNTUH UNIVERSITY COLLEGE OF ENGINEERING JAGTIAL

Department of Computer Science and Engineering

Title of the project:

Image Forgery Detection using MD5 hashing and OpenCV

ABSTRACT

Image forgery has become a widespread problem in today's digital era, where image manipulation tools are easily accessible. Detecting whether an image has been altered is crucial in areas such as journalism, forensics, law enforcement, and digital evidence verification. This project presents a lightweight and efficient technique for image forgery detection using MD5 hashing and OpenCV in Python. The proposed system works by computing the MD5 hash of an image file and comparing it with the hash of a known original image. MD5 (Message Digest Algorithm 5) generates a unique 128-bit hash value for each file, which acts like a digital fingerprint. Any modification in the image, even a single pixel change, results in a completely different hash value. Using this principle, the system can detect whether a test image is authentic or has been tampered with OpenCV is used to read and validate image files, ensuring compatibility with common formats like JPG and PNG. The system can process multiple images at once and does not require storing them in a local database. It is suitable for offline execution and can be easily extended to include graphical user interfaces or web-based applications. This project demonstrates a fundamental approach to digital image integrity verification and serves as a foundation for more advanced forgery detection systems using cryptographic techniques or machine learning.

Project Guide:

Dr. B. Sateesh Kumar

Professor, Head of the Department (CSE)

Submitted By:

P. Pavan (24JJ1D5811)