**FINGERPRINT IMAGE IDENTIFICATION FOR CRIME  
DETECTION**

**ABSTRACT**

Fingerprint images in crime scene are important clues to solve serial cases. In this paper we present a complete crime scene fingerprint identification system using deep machine learning with Convolutional Neural Network (CNN). Images are acquired from crime scene using methods ranging from precision photography to complex physical and chemical processing techniques and saved as the database. The images collected from the crime scene are usually incomplete and hence difficult to categorize. Suitable enhancement methods are required for pre-processing the fingerprint images. Minutiae are extracted from the fingerprint images. The features of preprocessed data are fed into the CNN as input to train and test the network. The experimental results demonstrated on database using Open CV-Python shows high accuracy of 80% recognition a partial or full fingerprint in the criminal database.

**Index Terms—**Convolutional Neural Network, Image acquisition, Image pre-processing, Open CV, Python.