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Automatic Retrieval of Shoeprint Images Using Blocked Sparse Representation

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HIGHLIGHTS FOR SUBMISSION OF MANUSCRIPT

- The sparse representation was used for the first time to retrieval shoeprints.
- Sparse representation method is used to describe shoeprint patterns.
- 950 shoeprint image similar to the crime scene images.

Abstract

Shoe marks are regarded as remarkable clues which can be usually detected in crime scenes where forensic experts use them for investigating crimes and identifying the criminals. Hence, developing a robust method for matching shoeprints with one another is of critical significance which can be used for recognizing criminals. In this paper, a promising method is proposed for retrieving shoe marks by means of developing *blocking sparse representation* technique. In the proposed method, the queried image was divided into two blocks. Then, two sparse representations are extracted for each queried image through approximate ℓ_1 minimizing method. Also, the referenced database is