



# Facial image super resolution using sparse representation for improving face recognition in surveillance monitoring

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Mots-clés face recognition [4], Hidden Markov Model [5], Super resolution [6], Support Vector Machine [7], surveillance videos [8]

Résumé en anglais Due to importance of security in the society, monitoring activities and recognizing specific people through surveillance video camera is playing an important role. One of the main issues in such activity rises from the fact that cameras do not meet the resolution requirement for many face recognition algorithm. In order to solve this issue, in this paper we are proposing a new system which super resolve the image using sparse representation with the specific dictionary involving many natural and facial images followed by Hidden Markov Model and Support vector machine based face recognition. The proposed system has been tested on many well-known face databases such as FERET, HeadPose, and Essex University databases as well as our recently introduced iCV Face Recognition database (iFRD). The experimental results shows that the recognition rate is increasing considerably after apply the super resolution by using facial and natural image dictionary.

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