

SINGLE SAMPLE FACE RECOGNITION BASED ON LPP FEATURE TRANSFER

ABSTRACT:

Due to its wide applications in practice, face recognition has been an active research topic. With the availability of adequate training samples, many machine learning methods could yield high face recognition accuracy. However, under the circumstance of inadequate training samples, especially the extreme case of having only a single training sample, face recognition becomes challenging. How to deal with conflicting concerns of the small sample size and high dimensionality in one sample face recognition is critical for its achievable recognition accuracy and feasibility in practice. Being different from conventional methods for global face recognition based on generalization ability promotion and local face recognition depending on image segmentation, a single sample face recognition algorithm based on Locality Preserving Projection (LPP) feature transfer is proposed here.

INTRODUCTION:

Face recognition has wide applications in areas such as smart card design, access control, information security, law enforcement follow-up and expression cloning. However in practice it often faces the challenge of having inadequate training samples, especially the extreme circumstance where only one training sample is available for each class of faces and the testing samples often show different appearance from training samples due to factors such as facial expression, illumination and pose angle. Such a challenge limits the current applicability of the face recognition technology in certain applications. It is extremely hard for a conventional transfer learning method to deal with this challenge. Therefore, feature extraction proves to be the key step for achieving high accuracy in single-sample face recognition. In the current literature of single-sample face recognition, there are two main categories of methods: global face recognition and local face recognition.

Technofist,

YES Complex, 19/3&4, 2nd Floor, Dinnur Main Road, R.T.Nagar, Bangalore-560032

Ph:080-40969981, Website:www.technofist.com. E-mail: technofist.projects@gmail.com