

# Face Recognition Based on Complementary Matching of Single Image and Sequential Images

黃雅軒, 劉偉成

Computer Science & Information Engineering

Computer Science and Informatics

yeashuan@chu.edu.tw

## Abstract

This paper presents a robust face recognition method which two highly discriminating algorithms (CMSM and GDA) to recognize human faces. CMSM (Constraint Mutual Subspace Method) constructs a class subspace for each person and makes the relation between class subspaces by projecting them onto a generalized difference subspace so that the canonical angles between subspaces are enlarged to approach to the orthogonal relation. GDA (Generalized Discriminant Analysis) adopts kernel function operator to make it easy to extend and generalize the classical Linear Discriminant Analysis to a non linear one. Both CMSM and GDA are effective to recognize human faces, however, CMSM constructs a subspace from several face images and GDA needs only one face image to perform recognition. Obviously, these two methods inherently have different properties and abilities of recognition so that we combine them together. Experimental results show that the proposed method can achieve good recognition accuracy.

Keyword : face recognition, GDA, CMSM