

專 題 演 講

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演講題目 : Background Recovery by Fixed-rank Robust
Principal Component Analysis

演講摘要 :

Background recovery is a very important theme in computer vision applications. Recent research shows that robust principal component analysis (RPCA) is a promising approach for solving problems such as noise removal, video background modeling, and removal of shadows and specularities. RPCA utilizes the fact that the background is common in multiple views of a scene, and attempts to decompose the data matrix constructed from input images into a low-rank matrix and a sparse matrix. This is possible if the sparse matrix is sufficiently sparse, which may not be true in computer vision applications. Moreover, algorithmic parameters need to be fine tuned to yield accurate results. This talk presents a fixed-rank RPCA algorithm for solving background recovering problems whose low-rank matrices have known ranks. Comprehensive tests show that, by fixing the rank of the low-rank matrix to a known value, the fixed-rank algorithm produces more reliable and accurate results than existing low-rank RPCA algorithm.