Abstract

In this paper, we give a new vanishing point detection algorithm, called the normalized unit sphere. By normalizing homogeneous coordinates in the original image space, we transform image points onto a normalized unit sphere. Further, we transform straight lines in image space into circles on normalized unit sphere. As a result, the vanishing point detection is implemented by searching the intersections of circles on the normalized unit sphere. This algorithm not only bounds the search space but treats the finite vanishing points and the vanishing points at infinity with the same way. The experimental results on synthetic and real data show good performance of this algorithm.
Vanishing Point Detection by Clustering on the Normalized Unit Sphere

2003.

Index Terms

Computer Science

Image Processing

Keywords
Vanishing Point Detection  Normalized Unit Sphere  Canny Edge Detector
Least-Square Method
K-means Method