

Generating a 3-D Object Model Simultaneously from a Measurement Matrix Containing All The Feature Points over the Object

Abstract

A technique is described for recovering entire 3-D shape of an object without performing registration among partially recovered 3-D shapes. The technique employs a single measurement matrix in the factorization method. A pair of cameras at a fixed position face with each other beyond an object on a turn table and take its images from opposite sides. Three pairs of the opposite views obtained from turning the table yield a single measurement matrix and, by applying the factorization to the matrix, entire 3-D shape of the object is recovered.