

Automatic calibration and reconstruction for active vision systems

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Abstrak

In this book, the design of two new planar patterns for camera calibration of intrinsic parameters is addressed and a line-based method for distortion correction is suggested. The dynamic calibration of structured light systems, which consist of a camera and a projector is also treated. Also, the 3D Euclidean reconstruction by using the image-to-world transformation is investigated. Lastly, linear calibration algorithms for the catadioptric camera are considered, and the homographic matrix and fundamental matrix are extensively studied. In these methods, analytic solutions are provided for the computational efficiency and redundancy in the data can be easily incorporated to improve reliability of the estimations. This volume will therefore prove valuable and practical tool for researchers and practioners working in image processing and computer vision and related subjects.