Handbook of 3D Machine Vision: Optical Metrology and Imaging (Hardback)

By -

Taylor Francis Inc, United States, 2013. Hardback. Book Condition: New. New.. 236 x 156 mm. Language: English . Brand New Book. With the ongoing release of 3D movies and the emergence of 3D TVs, 3D imaging technologies have penetrated our daily lives. Yet choosing from the numerous 3D vision methods available can be frustrating for scientists and engineers, especially without a comprehensive resource to consult. Filling this gap, Handbook of 3D Machine Vision: Optical Metrology and Imaging gives an extensive, in-depth look at the most popular 3D imaging techniques. It focuses on noninvasive, noncontact optical methods (optical metrology and imaging). The handbook begins with the well-studied method of stereo vision and explains how random speckle patterns or space-time varying patterns substantially improve the results of stereo vision. It then discusses stereo particle image velocimetry as a major experimental means in fluid dynamics, the robust and easy-to-implement structured-light technique for computer science applications, digital holography for performing micro- to nanoscale measurements, and grating, interferometry, and fringe projection techniques for precisely measuring dynamically deformable natural objects. The book goes on to describe techniques that do not require triangulation to recover a 3D shape, including time-of-flight techniques and uniaxial 3D shape measurement, as...

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