

Preface

This edited volume addresses problems in computer vision involving multiple images. The images can be taken by multiple cameras, in different spectral bands (multiband images), at different times (video sequences), and so on. Computer vision research has to deal with multi-image or multi-sensor situations in varying contexts such as, for instance,

- *image databases*: representations of similar situations, objects, processes, and related search strategies,
- *3D shape reconstruction*: binocular, trinocular, and multiple-view stereo, structured light methods, photometric stereo, shape from multiple shadows, registration and integration of partial (or single view) 3D reconstructions, and
- *augmented reality*: multi-node panoramic scenes, omniviewing by special cameras, video-to-(still)wide angle image generation, incremental surface visualization, or more advanced visualization techniques.

Recently multi-image techniques have become a main issue in image technology.

The volume presents extended and updated versions of 20 talks given at the 10th International Workshop on Theoretical Foundations of Computer Vision (March 12 - 17, 2000, Schloss Dagstuhl, Germany). Chapters are grouped into four parts as follows: (i) 3D Data Acquisition and Sensor Design; (ii) Multi-Image Analysis; (iii) Data Fusion in 3D Scene Description; and (iv) Applied 3D Vision and Virtual Reality. They cover various theoretical, algorithmic, and implementational issues in multi-image acquisition, storage, retrieval, processing, analysis, manipulation, and visualization.

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