

Although there are many "definitions" of smart cameras offered by the media, camera manufacturers and developers, still no binding definition exists. For the purpose of this book, a smart camera is defined as a vision system which, in addition to image capture circuitry, is capable of extracting application-specific information from the captured images, along with generating event descriptions or making decisions that are used in an intelligent and automated system. This book provides a single-source reference, with content from several disparate scientific, technological and commercial aspects related to smart cameras: photoreceptors, pixels, signal processing, image sensor architectures, embedded systems, computer vision, sensor networks, applications of smart cameras and market trends. It provides background information, fundamentals, and an overview of the historical evolution, applications and the latest trends in intelligent camera concepts for professionals, researchers and practitioners.

- Provides information on smart cameras for an interdisciplinary audience (embedded systems; image processing; camera technology) of professionals, practitioners and students;
- Integrates coverage of hardware electronics, signal processing, embedded computing, computer vision, sensor networks and smart camera applications in surveillance, machine vision and the automotive industry;
- Includes an analysis of the smart camera market evolution, based on interviews with market leaders.