Preface

Image engineering is a new inter-discipline that systematically studies various image theories and methods, elaborates the principles of image operation, promotes the applications of image technology, and summarizes production experience in the image industry. As an overall framework and system for the comprehensive research and integrated application of various image technologies, image engineering has received extensive attention and made considerable development in recent years.

This is a handbook that takes the chapter as a representation unit for key knowledge points of image engineering. These units combine the definitions of common concepts, related principles, practical techniques, and specific methods of image engineering. It could be of help to different readers related to the field of image technology in diverse ways, such as offering a general idea to unlearned readers who are looking to begin, making a summary for students who are currently learning, providing consultation to engineers who have working requirements, and delivering a comprehensive reference for senior researchers with relevant knowledge.

This handbook is organized into 5 parts with 52 chapters that are corresponding to different branches and directions of image engineering. For each chapter, the related entries are grouped into several sections (totally 216 sections) and subsections (totally 651 subsections). The numbers of entry for each chapter, section, and subsection are marked in the braces after their titles in the contents. They provide a general idea about the scale of the chapters, sections, and subsections and thus an overall viewing of the book. Totally, near 10,000 entries are collected mainly from dozens of books and some journal articles published globally in recent years. In the subject index, more than 10,000 guiding items can be found.

This handbook provides a comprehensive coverage of image engineering. For each chapter, in addition to its concise definition, extra explanations, examples, analysis, and discussions are also provided. These entries are supported by totally 750 figures and 28 tables, as well as more than a thousand of formulas. These entries can be cross-referenced by bold words in the text. These entries are also interconnected by the specifiers "See", "Same as", and "Compare" at the end of

entry texts. Besides, for each chapter and section, several appropriate references are selected to indicate the source for further and detailed information.

This handbook of image engineering integrates the common concepts, related principles, practical technologies, and specific methods into one

- Comprehensive coverage, refined interpretation
- Flexible reference and easy access
- Well-organized and completely structured

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