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Titolo	Moments and moment invariants in pattern recognition [[electronic resource] /] / Jan Flusser, Tomas Suk, Barbara Zitov
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Descrizione fisica	1 online resource (314 p.)
Altri autori (Persone)	SukTomas ZitovaBarbara
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Soggetti	Optical pattern recognition - Mathematics Moment problems (Mathematics) Invariants
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Contents; Authors' biographies; Preface; Acknowledgments; 1 Introduction to moments; 1.1 Motivation; 1.2 What are invariants?; 1.2.1 Categories of invariant; 1.3 What are moments?; 1.3.1 Geometric and complex moments; 1.3.2 Orthogonal moments; 1.4 Outline of the book; References; 2 Moment invariants to translation, rotation and scaling; 2.1 Introduction; 2.1.1 Invariants to translation; 2.1.2 Invariants to uniform scaling; 2.1.3 Traditional invariants to rotation; 2.2 Rotation invariants from complex moments; 2.2.1 Construction of rotation invariants; 2.2.2 Construction of the basis 2.2.3 Basis of invariants of the second and third orders2.2.4 Relationship to the Hu invariants; 2.3 Pseudoinvariants; 2.4 Combined invariants to TRS and contrast changes; 2.5 Rotation invariants for recognition of symmetric objects; 2.5.1 Logo recognition; 2.5.2 Recognition of simple shapes; 2.5.3 Experiment with a baby toy; 2.6 Rotation invariants via image normalization; 2.7 Invariants to nonuniform scaling; 2.8 TRS invariants in 3D; 2.9 Conclusion; References; 3 Affine moment invariants; 3.1 Introduction; 3.1.1

Projective imaging of a 3D world; 3.1.2 Projective moment invariants
 3.1.3 Affine transformation 3.1.4 AMLs; 3.2 AMLs derived from the
 Fundamental theorem; 3.3 AMLs generated by graphs; 3.3.1 The basic
 concept; 3.3.2 Representing the invariants by graphs; 3.3.3
 Independence of the AMLs; 3.3.4 The AMLs and tensors; 3.3.5
 Robustness of the AMLs; 3.4 AMLs via image normalization; 3.4.1
 Decomposition of the affine transform; 3.4.2 Violation of stability;
 3.4.3 Relation between the normalized moments and the AMLs; 3.4.4
 Affine invariants via half normalization; 3.4.5 Affine invariants from
 complex moments; 3.5 Derivation of the AMLs from the Cayley-
 Aronhold equation
 3.5.1 Manual solution 3.5.2 Automatic solution; 3.6 Numerical
 experiments; 3.6.1 Digit recognition; 3.6.2 Recognition of symmetric
 patterns; 3.6.3 The children's mosaic; 3.7 Affine invariants of color
 images; 3.8 Generalization to three dimensions; 3.8.1 Method of
 geometric primitives; 3.8.2 Normalized moments in 3D; 3.8.3 Half
 normalization in 3D; 3.8.4 Direct solution of the Cayley-Aronhold
 equation; 3.9 Conclusion; Appendix; References; 4 Implicit invariants to
 elastic transformations; 4.1 Introduction; 4.2 General moments under a
 polynomial transform; 4.3 Explicit and implicit invariants
 4.4 Implicit invariants as a minimization task 4.5 Numerical
 experiments; 4.5.1 Invariance and robustness test; 4.5.2 ALOI
 classification experiment; 4.5.3 Character recognition on a bottle; 4.6
 Conclusion; References; 5 Invariants to convolution; 5.1 Introduction;
 5.2 Blur invariants for centrosymmetric PSFs; 5.2.1 Template matching
 experiment; 5.2.2 Invariants to linear motion blur; 5.2.3 Extension to n
 dimensions; 5.2.4 Possible applications and limitations; 5.3 Blur
 invariants for N-fold symmetric PSFs; 5.3.1 Blur invariants for circularly
 symmetric PSFs
 5.3.2 Blur invariants for Gaussian PSFs

Sommario/riassunto

Moments as projections of an image's intensity onto a proper polynomial basis can be applied to many different aspects of image processing. These include invariant pattern recognition, image normalization, image registration, focus/ defocus measurement, and watermarking. This book presents a survey of both recent and traditional image analysis and pattern recognition methods, based on image moments, and offers new concepts of invariants to linear filtering and implicit invariants. In addition to the theory, attention is paid to efficient algorithms for moment computation in a discrete domain,

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Titolo	Errors in Emergency and Trauma Radiology // edited by Michael N. Patlas, Douglas S. Katz, Mariano Scaglione
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ISBN	3-030-05548-5
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (249 pages)
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Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Errors in Emergency and Trauma Radiology: General Principles -- Errors in Acute Brain Imaging.-Errors in Acute Spinal Imaging -- Errors in Imaging of Chest Trauma -- Errors in Imaging of Acute Non-traumatic Thoracic Emergencies -- Errors in Imaging of Abdominal and Pelvic Trauma -- Errors in Imaging of Acute Non-traumatic Abdomen -- Errors in Imaging of Acute Female Pelvis -- Errors in Acute MSK Imaging -- Errors in Imaging of Pregnant Patients -- Errors in Imaging of Pediatric Patients.
Sommario/riassunto	This book describes and illustrates the gamut of errors that may arise during the performance and interpretation of imaging of both nontraumatic and traumatic emergencies, using a head-to-toe approach. The coverage encompasses mistakes related to suboptimal imaging protocols, failure to review a portion of the examination, satisfaction of search error, and misinterpretation of imaging findings. The book opens with an overview of an evidence-based approach to errors in imaging interpretation in patients in the emergency setting. Subsequent chapters describe errors in radiographic, US, multidetector CT, dual-energy CT, and MR imaging of common as well as less

common acute conditions, including disorders in the pediatric population, and the unique mistakes in the imaging evaluation of pregnant patients. The book is written by a group of leading North American and European Emergency and Trauma Radiology experts. It will be of value to emergency and general radiologists, to emergency department physicians and related personnel, to general and trauma surgeons, and to trainees in all of these specialties.
