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1. Image registration methods: a survey

October 2003
Barbara Zitová | Jan Flusser

This paper aims to present a review of recent as well as classic image registration methods. Image registration is the process of overlaying images (two or more) of the same scene taken at different...

2. A survey on vision-based human action recognition

June 2010
Ronald Poppe

Vision-based human action recognition is the process of labeling image sequences with action labels. Robust solutions to this problem have applications in domains such as visual surveillance, video...

3. Facial expression recognition based on Local Binary Patterns: A comprehensive study

4 May 2009
Caifeng Shan | Shaogang Gong | Peter W. McOwan

Automatic facial expression analysis is an interesting and challenging problem, and impacts important applications in many areas such as human–computer interaction and data-driven animation. Deriving...

4. An adaptive color-based particle filter

10 January 2003
Katja Nummiaro | Esther Koller-Meier | Luc Van Gool

Robust real-time tracking of non-rigid objects is a challenging task. Particle filtering has proven very successful for non-linear and non-Gaussian estimation problems. The article presents the integration...

5. Robust wide-baseline stereo from maximally stable extremal regions

1 September 2004
J Matas | O Chum | M Urban | T Pajdla

The wide-baseline stereo problem, i.e. the problem of establishing correspondences between a pair of images taken from different viewpoints is studied....

6. A survey of approaches and trends in person re-identification

April 2014
Apurva Bedagkar-Gala | Shishir K. Shah

Person re-identification is a fundamental task in automated video surveillance and has been an area of intense research in the past few years. Given an image/video of a person taken from one camera,...

7. Evaluating spatiotemporal interest point features for depth-based action recognition

August 2014
Yu Zhu | Wenbin Chen | Guodong Guo

Human action recognition has lots of real-world applications, such as natural user interface, virtual reality, intelligent surveillance, and gaming. However, it is still a very challenging problem....

8. Hand gesture recognition using a real-time tracking method and hidden Markov models

1 August 2003
Feng-Sheng Chen | Chih-Ming Fu | Chung-Lin Huang

In this paper, we introduce a hand gesture recognition system to recognize continuous gesture before stationary background. The system consists of four modules: a real time hand tracking and extraction,...

9. Active contours with selective local or global segmentation: A new formulation and level set method

April 2010
Kaihua Zhang | Lei Zhang | Huihui Song | Wengang Zhou

A novel region-based active contour model (ACM) is proposed in this paper. It is implemented with a special processing named Selective Binary and Gaussian Filtering Regularized Level Set (SBGFRLS) method,...

10. Mathematical statistics and computer vision

August 2012
Rama Chellappa

In this discussion paper, I present my views on the role on mathematical statistics for solving computer vision problems....

11. A review of recent range image registration methods with accuracy evaluation

1 May 2007
Joaquim Salvi | Carles Matabosch | David Fofi | Josep Forest

The three-dimensional reconstruction of real objects is an important topic in computer vision. Most of the acquisition systems are limited to reconstruct a partial view of the object obtaining in blind...

12. Learning low-rank and discriminative dictionary for image classification

Available online 5 March 2014
Liangyue Li | Sheng Li | Yun Fu

Dictionary learning plays a crucial role in sparse representation based image classification. In this paper, we propose a novel approach to learn a discriminative dictionary with low-rank regularization...

13. 3D shape descriptor for object recognition based on Kinect-like depth image

April 2014

M.A. As'ari | U.U. Sheikh | E. Supriyanto

3D shape descriptor has been used widely in the field of 3D object retrieval. However, the performance of object retrieval greatly depends on the shape descriptor used. The aims of this study is to...

14. Edge and line oriented contour detection: State of the art

February 2011
Giuseppe Papari | Nicolai Petkov

We present an overview of various edge and line oriented approaches to contour detection that have been proposed in the last two decades. By edge and line oriented we mean methods that do not rely on...

15. Robust visual tracking via augmented kernel SVM

August 2014
Yancheng Bai | Ming Tang

Most current tracking approaches utilize only one type of feature to represent the target and learn the appearance model of the target just by using the current frame or a few recent ones. The limited...

16. The painful face – Pain expression recognition using active appearance models

November 2009
Ahmed Bilal Ashraf | Simon Lucey | Jeffrey F. Cohn | Tsuhan Chen | Zara Ambadar | Kenneth M. Prkachin | Patricia E. Solomon

Pain is typically assessed by patient self-report. Self-reported pain, however, is difficult to interpret and may be impaired or in some circumstances (i.e., young children and the severely ill) not...

17. A survey on industrial vision systems, applications and tools

10 February 2003
Elias N Malamas | Euripides G.M Petrakis | Michalis Zervakis | Laurent Petit | Jean-Didier Legat

The state of the art in machine vision inspection and a critical overview of real-world applications are presented in this paper. Two independent ways to classify applications are proposed, one according...

18. Automatic seeded region growing for color image segmentation

20 September 2005
Frank Y. Shih | Shouxian Cheng

In this paper, we present an automatic seeded region growing algorithm for color image segmentation. First, the input RGB color image is transformed into YCbCr color space. Second, the initial seeds...

19. Human skeleton tracking from depth data using geodesic distances and optical flow

March 2012
Loren Arthur Schwarz | Artashes Mkhitaryan | Diana Mateus | Nassir Navab

In this paper, we present a method for human full-body pose estimation from depth data that can be obtained using Time of Flight (ToF) cameras or the Kinect device. Our approach consists of robustly...

20. Keypoint descriptor matching with context-based orientation estimation

September 2014
F. Bellavia | D. Tegolo | C. Valenti

This paper presents a matching strategy to improve the discriminative power of histogram-based keypoint descriptors by constraining the range of allowable dominant orientations according to the context...

21. Extended local binary patterns for texture classification

February 2012
Li Liu | Lingjun Zhao | Yunli Long | Gangyao Kuang | Paul Fieguth

This paper presents a novel approach for texture classification, generalizing the well-known local binary pattern (LBP) approach. In the proposed approach, two different and complementary types of features...

22. Local histogram specification for face recognition under varying lighting conditions

May 2014
Hui-Dong Liu | Ming Yang | Yang Gao | Chunyan Cui

High frequency illumination and low frequency face features bring difficulties for most of the state-of-the-art face image preprocessors. In this paper, we propose two methods based on Local Histogram...

23. Automatic expression spotting in videos

August 2014
Matthew Shreve | Jesse Brizzi | Sergiy Fefilatyev | Timur Luguev | Dmitry Goldgof | Sudeep Sarkar

In this paper, we propose a novel solution for the problem of segmenting macro- and micro-expression frames (or retrieving the expression intervals) in video sequences, which is a prior step for many...

24. Image super-resolution survey

1 October 2006
J.D. van Ouwerkerk

The shortcomings in commonly used kernel-based super-resolution drive the study of improved super-resolution algorithms of higher quality. In the past years a wide range of very different approaches...

25. Covariance descriptor based on bio-inspired features for person re-identification and face verification

June–July 2014
Bingpeng Ma | Yu Su | Frédéric Jurie

Avoiding the use of complicated pre-processing steps such as accurate face and body part segmentation or image normalization, this paper proposes a novel face/person image representation which can properly...