Title: On the Development of Electronic Voting: A Survey.

Mona F M Mursi, Ghazy M R Assassa, Ahmed Abdelhafez and Kareem Abo M Samra

2013

Abstract:

Voting is a fundamental decision making instrument in any consensus-based society and democracy depends on the proper administration of popular elections. In any election, there exists a set of requirements among which voters should receive assurance that their intent was correctly captured and that all eligible votes were correctly tallied. On the other hand, the election system as a whole should ensure that voter coercion is unlikely. These conflicting requirements present a significant challenge: how can voters receive enough assurance to trust the election result, but not so much that they can prove to a potential coercer how they voted. The challenge of changing the traditional paper based voting methods used in many developing countries into electronic voting raises a set of functional and constitutional requirements. These requirements are governed by the country in which they operate and are usually not limited to privacy, authentication, fairness, transparency, integrity and incoercibility. This paper presents a survey of electronic voting schemes and systems available to date, classifying them and pointing out advantages and drawbacks of each class. The survey is concluded by presenting a comparative analysis on electronic voting and suggests improvements on some recent e-voting schemes and systems.

http://www.ijcaonline.org/archives/volume61/number16/10009-4872

Title: "Appearance-based Face Recognition using PCA and LDA Approaches,"

Hatim Aboalsamh, Ghazy Assassa, Mona Mursi, Hassan Mathkour

2009

Abstract:

Appearance-based face recognition techniques are appropriate for reducing the volume of computation for fast image analysis and classification. Face recognition plays a significant role in many security and forensic applications including person authentication for access control systems and person identification in real time video surveillance systems. This paper examines two appearance-based approaches for feature extraction and dimension reduction, namely, Principal Components Analysis (PCA) and Linear Discriminant Analysis (LDA). Numerical experiments were conducted on the ORL face database to investigate the effect of changing the number of training images, scaling factor, and the effect of feature vector length on the recognition rate. The results suggest that the effect of increasing the number of training images has more significance on the recognition rate than changing the image scale. Correlations obtained from numerical experiments on the ORL face datab! ase suggest that as the number of training images increases, PCA would yield slightly higher recognition rates.

Keywords: Appearance-based, Face recognition, Principal components analysis (PCA), Eigenfaces, Linear discriminant analysis (LDA), Fisherfaces.
EXTENSION of the file: .doc Special (Invited) Session:
 Organizer of the Session: This is an extended version of the paper presented at WSEAS conference Cambridge, Feb 2009 How Did you learn about congress: itlibrary@ksu.edu.sa IP ADDRESS: 86.51.207.141

Title: "Face Detection and Counting in Color Images,"

Mona F.M. Mursi, Ghazy M.R. Assassa, Abeer Al-Humaimeedy , Khaled Al Ghathbar

2009

Abstract:

To build fully automated systems that analyze the information contained in face images, robust and efficient face detection algorithms are required. Automatic human face detection is considered as the initial process of any fully automatic system that analyzes the information contained in human faces (e.g., identity, gender, expression, age, race and pose). In this paper, color segmentation is used as a first step in the human face detection process followed by grouping likely face regions into clusters of connected pixels. Median filtering is then performed to eliminate the small clusters and the resulting blobs are matched against a face pattern (ellipse) subjected to constraints for rejecting non-face blobs. The system was implemented and validated for images with different formats, sizes, number of people, and complexity of the image background. The results obtained were very satisfactory in terms of face identification and performance.

Title: " A Risk Management Tool for Extreme Programming"

Hassan Mathkour, Ghazy Assassa, and A. Baihan

Year: 2008

Abstract:

Risk management is the application of appropriate tools and procedures to contain risk within acceptable limits. In this paper, the authors apply risk management to software development that uses extreme programming approach. A risk tool is designed and developed using MS Excel. The tool is simple to use and would help risk analysis of the twelve practices of extreme programming. The tool has been used and experimented with. Information such as project budget , risk management budget, cost of controls, SLE, ARO have been entered into the tool to analyze the priority practices in order to decide which practice must be dealt with first.

Title: "Steganalysis of JPEG Images: An Improved Approach for Breaking the F5 Algorithm".

Hatim Aboalsamh, Hassan Mathkour, Mona Mursi, Ghazy M.R.Assassa,

Year: 2008

Abstract:

People often transmit digital images over the internet and JPEG is one of the most common used formats. Steganography is the art and science of hiding communication; the information hiding process thus uses an image as a cover medium to embed a hidden message. Steganalysis is the inverse process of trying to identify the existence of hidden message in a cover image. In this paper, we present an enhancement to the steganalysis algorithm that successfully attacks F5 steganographic algorithm. The key idea is related to the selection of an "optimal" value of β (the probability that a non-zero AC coefficient will be modified) for the image under consideration. Rather than averaging the values of β for 64 shifting steps worked on an image, an optimal β is determined that corresponds to the shift having minimal distance E from the double compression removal step. Numerical experiments were carried out to validate the proposed enhanced algorithm and compare it against the original one. Both algorithms were tested and compared using two sets of test images. The first set uses reference test data of 20 grayscale images [1], and the second uses 432 images created by manipulating 12 images for various image parameters: two sizes (300×400 and 150×2000), six JPEG old quality factors (50, 60, 70, 80, 90, 100), and 3 message lengths (0, 1kB, 2 kB). The results suggest that the original algorithm may be used as a classifier, since it shows a good detection performance of both clean and stego test images; whereas, the proposed enhanced algorithm may be used as an estimator for the true message length for those images that have been classified by original algorithm as stego images.