International Journal of Soft Computing
(http://www.springer.com/engineering/journal/500)

Special Issue on
Soft Computing for Digital Information Forensics

Introduction

The emergence and evolution of new digital technologies are dramatically changing how information is captured, processed, analyzed, interpreted, transmitted, and stored. While digital technology has greatly improved the collection and analysis of evidences, the underlying research challenges primarily focus on the integrity and the reliability of validating the resulting forensic decisions accurately. Furthermore, digital evidences can be easily tampered, altered, or forged to commit fraud, identity theft, or impersonate someone else, to remain elusive from law enforcement. Using image processing techniques, it is easy to tamper the original image by replacing an individual's face, and making the change difficult to detect. Image forensic techniques use natural properties of image to determine forgery or locate tampering. In another example, it is possible to determine whether an image is generated by a digital camera, a cell-phone camera, or a computer by analyzing the image properties and characteristics and comparing the statistics of various digital devices.

With the rise of digital crime (signature forgery, image forgery, illegal transaction, etc.) and the pressing need for methods to combat these forms of criminal activities, there is an increasing awareness of the importance of information forensics for security applications. Fundamental areas of interest include attack models, cryptanalysis, steganalysis, authentication, human identification, signal classification, surveillance, transaction tracking, etc.

In many practical applications, the evidences collected from a crime scene may be non-ideal due to poor quality or availability of partial information. It is imperative for new research approaches to fuse information from multiple evidences to make a forensic decision or reliably classify as genuine or imposter.

In all these forensic applications, soft computing techniques such as neural networks, fuzzy logic, evolutionary computing, and rough set, play an important role in learning complex data structures and patterns, and classifying them to make intelligent decisions. Soft computing has been widely used in various applications, such as machine vision, pattern detection, data segmentation, data mining, adaptive control, biometrics, and information assurance. This special issue aims to highlight state-of-the-art research and novel solutions in information forensic applications using emerging soft computing techniques.

Topics of interest

High quality review and technical research papers are solicited for the special issue. The topics include but are not limited to the following:

Algorithms: Bayesian learning, neural network, support vector machine, genetic algorithms, rough sets, case based reasoning, fuzzy logic, uncertainty principle, and other machine learning approaches.

Applications: Handwriting analysis, digital document examination, image/video forgery detection, evidence source investigation, speaker authentication, intelligent surveillance, biometrics, digital device forensics, digital evidence retrieval, multi-mode human indexing, digital transaction tracking, cryptanalysis and steganalysis, crime prevention and prediction, information fusion, friction ridge analysis, and other forensics applications.

Submission

Manuscripts must be prepared in accordance with the "Guide for Authors" page at the journal website, *http://www.springer.com/engineering/journal/500*. Further, the manuscript must be submitted in the form of PDF file to one of the guest editors. The submission must include the title, abstract of your paper, and the corresponding author's name and affiliation. All papers will be rigorously reviewed based on originality and high scientific quality. Manuscripts must be well organized, clearly written with sufficient support for assertions and conclusion.

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Guest Editors

Dr. Shiguo Lian
Human-Computer Interface (HCI) Lab
France Telecom R&D (Orange Labs) Beijing, China
E-mail: shiguo.lian@orange-ftgroup.com

Prof. Gregory L. Heileman
Electrical & Computer Engineering Department
University of New Mexico, USA
E-mail: heileman@ece.unm.edu

Prof. Afzel Noore
Lane Department of Computer Science & Electrical Engineering
West Virginia University, USA
E-mail: afzel.noore@mail.wvu.edu