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Introduction

Research activities in the area of Defense and Security over the first decade of the 21st century has been, and continues to be, mainly influenced by three factors: mass deployment of a variety of sensors and sensor networks for surveillance and remote sensing; exponentially growing use of audiovisual and multispectral high-dimensional images/signals in communication over open networks and pervasive computing environments; the rise of international terrorism and the rapid growth in cybercrime and identity theft. While technological advances provide new and exciting opportunities for a wide range of applications, they also present the research community with numerous challenges that are exacerbated by growing security concerns. The most significant challenges in this respect include: efficient and secure processing of image/video processing suitable for implementation on constrained mobile devices, developing innovative security mechanism for complex multi-media signals that preserve privacy to fully exploit the capabilities of; and developing proactive security solutions to protect computing infrastructures and sensitive information systems while preserving the privacy of the citizens.

Many of the research papers and posters reported in this proceeding and presented in this conference attempt to make important contributions towards meeting some of the challenges listed above, as well as advancing the basic research in the field of mobile multimedia. Several papers propose novel secure and efficient algorithms for image/video compression, encryption, and steganographic tasks. In this respect, efficient simultaneous compression and encryption of multimedia objects was proposed. Steganographic systems and techniques presented included an innovative content-based retrieval of features in audio signals using non-disruptive indexed data embedding. The conference attracted high quality invited papers. These papers reported on recent advances in surveillance video scrambling for privacy protection; smart compression using high dimensional imagery for improved sensing in surveillance-aided operations; using watermarking to secure H.264 videos; and an innovative multi-template image matching using alpha-rooted biquaternion phase correlation with application to logo recognition.

The security and performance of single and multimodal biometrics are covered by a number of papers with focus on improved performance. Various aspects of face, palm print and fingerprint identification schemes are tackled with emphasis on the effect of image quality on template representation and performance, as well as the use of multifactor authentication schemes that incorporate challenge and response and/or location information.

Feature enhancement, detection and extractions in images/videos are dealt with in a number of papers and complemented by the poster session which

included numerous posters addressing enhancement tasks with emphasis on using wavelet polynomial threshold filters. Several conference presentations and posters addressed forensic techniques for various devices including iPhones, mobile phones, and Blu-ray discs.

The various presentations attracted interesting and high quality questions and interactions among the researchers attending the conference. This has demonstrated the importance of all the tackled issues and their strong relevance to the current challenges in mobile multimedia processing and security of wireless technologies. An interesting feature of this conference was the active participation of researchers from all over the world including Europe, South-East Asia, Japan, and the US. This feature helps fostering genuine international research collaboration.

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