



EURASIP Seminar on Secure Biometrics

Instituto Superior Técnico



Seminar Report

The EURASIP Seminar on Secure Biometrics has been organized by Instituto de Telecomunicações (IT) / Instituto Superior Técnico (IST) on November 15, 2010, in Lisbon, Portugal. The seminar was chaired by Prof. Paulo Lobato Correia from IT/IST.

The program has included an invited talk entitled "Secure Identity Verification", by Dr. Anthony Vetro, of the Mitsubishi Electric Research Labs, Cambridge, Massachusetts, USA. This talk highlighted that biometrics are an inherent link to our identity and useful for a number of applications including access control and online transactions. Keeping this information secure is a primary concern. However, biometric data is noisy and secure matching of this data poses new security challenges. This talk examined two approaches for secure identity verification. The first scheme considers the application of distributed source coding techniques to cope with noisy biometric measurements. A Slepian-Wolf coding system is used to provide robust biometric verification for genuine users, while guarding against attacks from imposters. A formal quantification of the tradeoff between security and robustness is provided as a function of the Slepian-Wolf coding rate. The second approach addresses the same problem with privacy-preserving protocols for secure distance computations. These protocols exploit the properties of homomorphic encryption and are developed for a variety of functions including Hamming distance, L2-norm and L1-norm. The benefits and drawbacks of these two different approaches were discussed.

Following the invited talk, there was a panel on "Secure Biometrics". The panelists were:

- Dr. Anthony Vetro, Mitsubishi Electric Research Labs, USA
- Prof. Ana Fred, Instituto Superior Técnico
- Prof. Hugo Gamboa, CEO of Plux, FCT – Univ. Nova de Lisboa
- Gil Santos, Universidade da Beira Interior
- Prof. Luís Ducla Soares, ISCTE – Instituto Universitário de Lisboa

Each of the panelists made a short presentation of the respective group work on Biometrics, emphasizing the aspects related to security. During the discussion period there was a live interaction between the panel members and the audience (composed of over 30 people).

