



THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering

Seminar

Privacy-Security Tradeoffs in Biometric Security Systems

by

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The Chinese University of Hong Kong

Abstract

Biometric security systems are analyzed from an information theoretic perspective. A fundamental tradeoff between privacy, measured by the normalized equivocation rate of the biometric measurements, and security, measured by the rate of the key generated from the biometric measurements, will be presented. The privacy-security region, which characterizes the above-noted tradeoff is derived for this case. The scenario in which the attacker has side information is then considered. Inner and upper bounds on the privacy-security tradeoff are derived in this case. Biometric security systems with perfect privacy are possible if and only if common randomness can be generated from two biometric measurements.

Biography

Siu-Wai Ho received the B.Eng., M.Phil., and Ph.D. degrees in information engineering from The Chinese University of Hong Kong, Hong Kong, in 2000, 2003, and 2006, respectively. During 2006-2008, he was a Postdoctoral Research Fellow in the Department of Electrical Engineering, Princeton University, Princeton, NJ. Since 2009, he has been a Research Fellow in the Institute for Telecommunications Research, University of South Australia. His research interests are in Shannon theory, data communications and recording systems and biometric security systems.

**** ALL ARE WELCOME ****