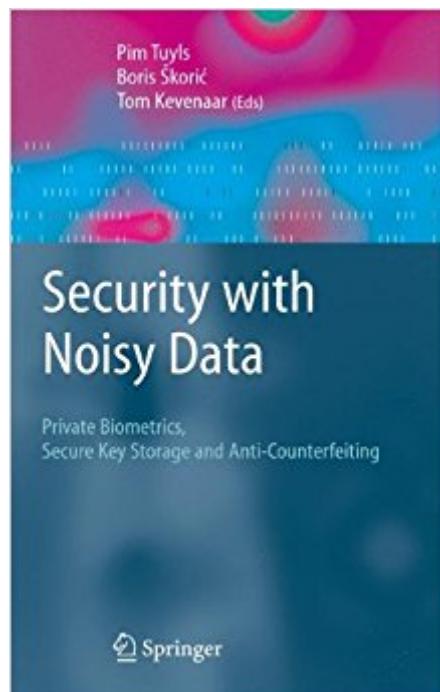


The book was found

Security With Noisy Data: On Private Biometrics, Secure Key Storage And Anti-Counterfeiting



Synopsis

Noisy data appear very naturally in applications where the authentication is based on physical identifiers. This book provides a self-contained overview of the techniques and applications of security based on noisy data. It provides a comprehensive overview of the theory of extracting cryptographic keys from noisy data, and describes applications in the field of biometrics, secure key storage, and anti-counterfeiting.

Book Information

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Customer Reviews

"This is a fascinating text for those interested in, and prepared to explore, the latest developments in information security. It is a difficult read for the casual reader, but for the technically savvy security professional interested in the latest developments in biometrics, key security, and anti-counterfeiting, this book should be required reading."Charles K. Davis, ACM Computing Reviews, February 2009)

Noisy data appears very naturally in applications where the authentication is based on physical identifiers, such as human beings, or physical structures, such as physical unclonable functions. This book examines how the presence of noise has an impact on information security, describes how it can be dealt with and possibly used to generate an advantage over traditional approaches, and provides a self-contained overview of the techniques and applications of security based on noisy data. Security with Noisy Data thoroughly covers the theory of authentication based on noisy data and shows it in practice as a key tool for preventing counterfeiting. Part I discusses security

primitives that allow noisy inputs, and Part II focuses on the practical applications of the methods discussed in the first part. Key features:

- Contains algorithms to derive secure keys from noisy data, in particular from physical unclonable functions and biometrics - as well as the theory proving that those algorithms are secure
- Offers practical implementations of algorithms, including techniques that give insight into system security
- Includes an overview and detailed description of new applications made possible by using these new algorithms
- Discusses recent theoretical as well as application-oriented developments in the field, combining noisy data with cryptography
- Describes the foundations of the subject in a clear, accessible and reader-friendly style
- Presents the principles of key establishment and multiparty computation over noisy channels
- Provides a detailed overview of the building blocks of cryptography for noisy data and explains how these techniques can be applied, (for example as anti-counterfeiting and key storage)
- Introduces privacy protected biometric systems, analyzes the theoretical and practical properties of PUFs and discusses PUF based systems
- Addresses biometrics and physical unclonable functions extensively

This comprehensive introduction offers an excellent foundation to graduate students and researchers entering the field, and will also benefit professionals needing to expand their knowledge. Readers will gain a well-rounded and broad understanding of the topic through the insight it provides into both theory and practice.

Pim Tuyls is a Principal Scientist at Philips Research and a Visiting Professor at the COSIC Department of the Katholieke Universiteit of Leuven, Dr Boris Skoric and Dr Tom Kevenaar are research scientists at Philips Research Laboratories, Eindhoven.

I had never been a fan of books like this (compilations of existing research) and in fact had never purchased one as I always felt I could download the various authors' papers (usually) for free online and simply read those. After reading (most of) this book, I am convinced that the editors put a good deal of time into making sure the book flowed well and presented things in a way that simply downloading the papers would not give. Maybe it is just this particular book (remember this is my first book of this nature). If so, I'll eat my words with my next purchase.

On to the material. It seems the editors have worked very hard to make this book approachable to someone with no experience in the particular field. I have a strong background in cryptography, but biometrics and security with noisy data in general was completely new to me. I felt that this book has given me a solid foundation in the area and have already cited a few chapters from it in a paper I am working on. Way to go!

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