Coding Theory And Cryptography The Essentials Second Edition Chapman Hallcrc Pure And Applied Mathematics

Pearson Etext for Introduction to Cryptography With Coding Theory -- Access Card
Cryptography and Coding
Coding Theory and Cryptography
Information Theory, Coding and Cryptography
Fundamentals in Information Theory and Coding
Some Problems of Coding Theory and Cryptography
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Coding Theory and Cryptology
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Arithmetic, Geometry, Cryptography, and Coding Theory 2009
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Introduction to Cryptography with Coding Theory
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Introduction to Cryptography with Coding Theory(2□)
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Boolean Functions in Coding Theory and Cryptography
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Gröbner Bases, Coding, and Cryptography
Coding Theory and Cryptography
Number Theory and Cryptography
Discrete Mathematics
Applied Number Theory

RODRIGO SHANNON

Pearson Etext for Introduction to Cryptography With Coding Theory -- Access Card World Scientific
Containing data on number theory, encryption schemes, and cyclic codes, this highly successful textbook, proven by the authors in a popular two-quarter course, presents coding theory, construction, encoding, and decoding of specific code families in an "easy-to-use" manner appropriate for students with only a basic background in mathematics offerin
Cryptography and Coding Springer Science & Business Media
These are the proceedings of the Conference on Coding Theory, Cryptography, and Number Theory held at the U. S. Naval Academy during October 25-26, 1998. This book concerns elementary and advanced aspects of coding theory and cryptography. The coding theory contributions deal mostly with algebraic coding theory. Some of these papers are expository, whereas others are the result of original research. The emphasis is on geometric Goppa codes (Shokrollahi, Shokranian-Joyner), but there is also a paper on codes arising from combinatorial constructions (Michael). There are both, historical and mathematical papers on cryptography. Several of the contributions on cryptography describe the work done by the British and their allies during World War II to crack the German and Japanese ciphers (Hamer, Hilton, Tutte, Weierud, Urling). Some mathematical aspects of the Enigma rotor machine (Sherman) and more recent research on quantum cryptography (Lomonoco) are described. There are two papers concerned with the RSA cryptosystem and related number-theoretic issues (Wardlaw, Cosgrave).
Coding Theory and Cryptography Springer Science & Business Media
The inaugural research program of the Institute for Mathematical Sciences at the National University of Singapore took place from July to December 2001 and was devoted to coding theory and cryptology. As part of the program, tutorials for graduate students and junior researchers were given by world-renowned scholars. These tutorials covered fundamental aspects of coding theory and cryptology and were designed to prepare for original research in these areas. The present volume collects the expanded lecture notes of these tutorials. The topics range from mathematical areas such as computational number theory, exponential sums and algebraic function fields through coding-theory subjects such as extremal problems, quantum error-correcting codes and algebraic-geometry codes to cryptologic subjects such as stream ciphers, public-key infrastructures, key management, authentication schemes and distributed system security. Contents:Extremal Problems of Coding Theory (A Barg)Analysis and Design Issues for Synchronous Stream Ciphers (E Dawson & L Simpson)Quantum Error-Correcting Codes (K Feng)Public Key Infrastructures (D Gollmann)Computational Methods in Public Key Cryptology (A K Lenstra)Detecting and Revoking Compromised Keys (T Matsumoto)Algebraic Function Fields Over Finite Fields (H Niederreiter)Authentication Schemes (D Y Pei)Exponential Sums in Coding Theory, Cryptology and Algorithms (I E Shparlinski)Distributed Authorization: Principles and Practice (V Varadharajan)Introduction to Algebraic Geometry Codes (C P Xing) Readership: Graduate students and researchers in number theory, discrete mathematics, coding theory, cryptology and IT security. Keywords:Coding Theory;Cryptology;Number Theory;Algebraic-Geometry Codes;Public-Key Infrastructures;Error-Correcting Codes
Information Theory, Coding and Cryptography Springer
Covering topics in algebraic geometry, coding theory, and cryptography, this volume presents interdisciplinary group research completed for the February 2016 conference at the Institute for Pure and Applied Mathematics (IPAM) in cooperation with the Association for Women in Mathematics (AWM). The conference gathered research communities across disciplines to share ideas and problems in their fields and formed small research groups made up of graduate students, postdoctoral researchers, junior faculty, and group leaders who designed and led the projects. Peer reviewed and revised, each of this volume's five papers achieves the conference’s goal of using algebraic geometry to address a problem in either coding theory or cryptography. Proposed variants of the McEliece cryptosystem based on different constructions of codes, constructions of locally recoverable codes from algebraic curves and surfaces, and algebraic approaches to the multicast network coding problem are only some of the topics covered in this volume. Researchers and graduate-level students interested in the interactions between algebraic geometry and both coding theory and cryptography will find this volume valuable.
Fundamentals in Information Theory and Coding Springer Science & Business Media
This volume contains the proceedings of the 12th conference on Arithmetic, Geometry, cryptography and coding Theory, held in Marseille, France from March 30 to April 3, 2009, as well as the first Geocrypt conference, held in pointe-a-pitre, guadeloupe, from April 27 to may 1, 2009, and the European science Foundation exploratory workshop on curves, coding Theory, and Cryptography, held in Marseille, France from March 25 to 29, 2009. The articles Contained in this volume come from three related symposia organized by the group Arithmetique et Theorie de l' Information in Marseille. The topics cover arithmetic properties of curves and higher dimensional varieties with applications to codes and cryptography.
Some Problems of Coding Theory and Cryptography Springer Science & Business Media
The theory of algebraic function fields over finite fields has its origins in number theory. However, after Goppa`s discovery of algebraic geometry codes around 1980, many applications of function fields were found in different areas of mathematics and information theory. This book presents

survey articles on some of these new developments. The topics focus on material which has not yet been presented in other books or survey articles.

Algebraic Geometry for Coding Theory and Cryptography Springer Science & Business Media
Coding theory is still a young subject. One can safely say that it was born in 1948. It is not surprising that it has not yet become a fixed topic in the curriculum of most universities. On the other hand, it is obvious that discrete mathematics is rapidly growing in importance. The growing need for mathe maticians and computer scientists in industry will lead to an increase in courses offered in the area of discrete mathematics. One of the most suitable and fascinating is, indeed, coding theory. So, it is not surprising that one more book on this subject now appears. However, a little more justification of the book are necessary. A few years ago it was and a little more history remarked at a meeting on coding theory that there was no book available an introductory course on coding theory (mainly which could be used for for mathematicians but also for students in engineering or computer science). The best known textbooks were either too old, too big, too technical, too much for specialists, etc. The final remark was that my Springer Lecture Notes (# 201) were slightly obsolete and out of print. Without realizing what I was getting into I announced that the statement was not true and proved this by showing several participants the book Inleiding in de Coderingstheorie, a little book based on the syllabus of a course given at the Mathematical Centre in Amsterdam in 1975 (M. C. Syllabus 31).

Coding Theory and Cryptology John Wiley & Sons
The12thintheseriesofIMAConferencesonCryptographyandCodingwasheld at the Royal Agricultural College, Cirencester, December 15–17, 2009. The p- gram comprised 3 invited talks and 26 contributed talks. The contributed talks werechosenbyathoroughreviewingprocessfrom53submissions.Oftheinvited and contributed talks,28 arerepresentedaspapersin this volume. These papers are grouped loosely under the headings: Coding Theory, Symmetric Crypt- raphy, Security Protocols, Asymmetric Cryptography, Boolean Functions, and Side Channels and Implementations. Numerous people helped to make this conference a success. To begin with I would like to thank all members of the Technical Program Committee who put a great deal of e?ort into the reviewing process so as to ensure a hi- quality program. Moreover, I wish to thank a number of people, external to the committee, who also contributed reviews on the submitted papers. Thanks, of course,mustalso goto allauthorswho submitted papers to the conference,both those rejected and accepted. The review process was also greatly facilitated by the use of the Web-submission-and-review software, written by Shai Halevi of IBM Research, and I would like to thank him for making this package available to the community. The invited talks were given by Frank Kschischang, Ronald Cramer, and Alexander Pott, and two of these invitedtalksappearaspapersinthisvolume. A particular thanks goes to these invited speakers, each of whom is well-known, notonlyforbeingaworld-leaderintheir?eld,butalsofortheirparticularability to communicate their expertise in an enjoyable and stimulating manner.

Elementary Number Theory, Cryptography and Codes CRC Press
A complete, accessible book on single and multiple output Boolean functions in cryptography and coding, with recent applications and problems.

Boolean Functions for Cryptography and Coding Theory Pearson
Coding theory and cryptography allow secure and reliable data transmission, which is at the heart of modern communication. Nowadays, it is hard to find an electronic device without some code inside. Gröbner bases have emerged as the main tool in computational algebra, permitting numerous applications, both in theoretical contexts and in practical situations. This book is the first book ever giving a comprehensive overview on the application of commutative algebra to coding theory and cryptography. For example, all important properties of algebraic/geometric coding systems (including encoding, construction, decoding, list decoding) are individually analysed, reporting all significant approaches appeared in the literature. Also, stream ciphers, PK cryptography, symmetric cryptography and Polly Cracker systems deserve each a separate chapter, where all the relevant literature is reported and compared. While many short notes hint at new exciting directions, the reader will find that all chapters fit nicely within a unified notation.

Finite Fields with Applications to Coding Theory, Cryptography and Related Areas Cambridge University Press
The biennial International Workshop on Coding and Cryptology (IWCC) aims to bring together many of the world's greatest minds in coding and crypt- ogy to share ideas and exchange knowledge related to advancements in c- ing and cryptology, amidst an informal setting conducive for interaction and collaboration. It is well known that fascinating connections exist between coding and cr- tology. Therefore this workshop series was organized to facilitate a fruitful - teraction and stimulating discourse among experts from these two areas. The inaugural IWCC was held at Wuyi Mountain, Fujian Province, China, during June 11-15, 2007 and attracted over 80 participants. Following this s- cess, the second IWCC was held June 1-5, 2009 at Zhangjiajie, Hunan Province, China. Zhangjiajie is one of the most scenic areas in China. The proceedings of this workshop consist of 21 technical papers, covering a wide range of topics in coding and cryptology, as well as related ?elds such as combinatorics. All papers, except one, are contributed by the invited speakers of the workshop and each paper has been carefully reviewed. We are grateful to the external reviewers for their help, which has greatly strengthened the quality of the proceedings. IWCC 2009 was co-organizedby the National University of Defense Techn- ogy (NUDT), China and Nanyang Technological University (NTU), Singapore. We acknowledge with gratitude the ?nancial support from NUDT. We wouldliketo expressourthanks to Springer formaking it possible forthe proceedings to be published in the Lecture Notes in Computer Science series.

Topics in Geometry, Coding Theory and Cryptography Cambridge University Press
In this volume one finds basic techniques from algebra and number theory (e.g. congruences, unique factorization domains, finite fields, quadratic residues, primality tests, continued fractions, etc.) which in recent years have proven to be extremely useful for applications to cryptography and coding theory. Both cryptography and codes have crucial applications in our daily lives, and they are described here, while the complexity problems that arise in implementing the related numerical algorithms are also taken into due account. Cryptography has been developed in great detail, both in its classical and more recent aspects. In particular public key cryptography is extensively discussed, the use of algebraic geometry, specifically of elliptic curves over finite fields, is illustrated, and a final chapter is devoted to quantum cryptography, which is the new frontier of the field. Coding theory is not discussed in full; however a chapter, sufficient for a good introduction to

the subject, has been devoted to linear codes. Each chapter ends with several complements and with an extensive list of exercises, the solutions to most of which are included in the last chapter. Though the book contains advanced material, such as cryptography on elliptic curves, Goppa codes using algebraic curves over finite fields, and the recent AKS polynomial primality test, the authors' objective has been to keep the exposition as self-contained and elementary as possible. Therefore the book will be useful to students and researchers, both in theoretical (e.g. mathematicians) and in applied sciences (e.g. physicists, engineers, computer scientists, etc.) seeking a friendly introduction to the important subjects treated here. The book will also be useful for teachers who intend to give courses on these topics.

Concise Encyclopedia of Coding Theory Springer Science & Business Media

This book offers a systematic presentation of cryptographic and code-theoretic aspects of the theory of Boolean functions. Both classical and recent results are thoroughly presented. Prerequisites for the book include basic knowledge of linear algebra, group theory, theory of finite fields, combinatorics, and probability. The book can be used by research mathematicians and graduate students interested in discrete mathematics, coding theory, and cryptography.

Geometries, Codes and Cryptography World Scientific

This book offers a systematic presentation of cryptographic and code-theoretic aspects of the theory of Boolean functions. Both classical and recent results are thoroughly presented. Prerequisites for the book include basic knowledge of linear algebra, group theory, theory of finite fields, combinatorics, and probability. The book can be used by research mathematicians and graduate students interested in discrete mathematics, coding theory, and cryptography.

Introduction to Cryptography Springer Science & Business Media

This text is for a course in cryptography for advanced undergraduate and graduate students. Material is accessible to mathematically mature students having little background in number theory and computer programming. Core material is treated in the first eight chapters on areas such as classical cryptosystems, basic number theory, the RSA algorithm, and digital signatures. The remaining nine chapters cover optional topics including secret sharing schemes, games, and information theory. Appendices contain computer examples in Mathematica, Maple, and MATLAB. The text can be taught without computers.

Codes and Cryptography Tata McGraw-Hill Education

Publisher description

Some Applications of Coding Theory in Cryptography American Mathematical Soc.

Having trouble deciding which coding scheme to employ, how to design a new scheme, or how to improve an existing system? This summary of the state-of-the-art in iterative coding makes this decision more straightforward. With emphasis on the underlying theory, techniques to analyse and design practical iterative coding systems are presented. Using Gallager's original ensemble of LDPC codes, the basic concepts are extended for several general codes, including the practically important class of turbo codes. The simplicity of the binary erasure channel is exploited to develop analytical techniques and intuition, which are then applied to general channel models. A chapter on factor graphs helps to unify the important topics of information theory, coding and communication theory. Covering the most recent advances, this text is ideal for graduate students in electrical engineering and computer science, and practitioners. Additional resources, including instructor's solutions and figures, available online: www.cambridge.org/9780521852296.

Boolean Functions in Coding Theory and Cryptography Springer Science & Business Media

The inaugural research program of the Institute for Mathematical Sciences at the National University of Singapore took place from July to December 2001 and was devoted to coding theory and cryptology. As part of the program, tutorials for graduate students and junior researchers were given by world-renowned scholars. These tutorials covered fundamental aspects of coding theory and cryptology and were designed to prepare for original research in these areas. The present volume collects the expanded lecture notes of these tutorials. The topics range from mathematical areas such as computational number theory, exponential sums and algebraic function fields through coding-theory subjects such as extremal problems, quantum error-correcting codes and algebraic-geometry codes to cryptologic subjects such as stream ciphers, public-key infrastructures, key management, authentication schemes and distributed system security.

Arithmetic, Geometry, Cryptography, and Coding Theory 2009 American Mathematical Soc.

This volume contains the proceedings of the 11th conference on $\mathrm{AGC^{2}T}$, held in Marseille, France in November 2007. There are 12 original research articles covering asymptotic properties of global fields, arithmetic properties of curves and higher dimensional varieties, and applications to codes and cryptography. This volume also contains a survey article on applications of finite fields by J.-P. Serre. $\mathrm{AGC^{2}T}$ conferences take place in Marseille, France every 2 years. These international conferences have been a major event in the area of applied arithmetic geometry for more than 20 years.

Arithmetic, Geometry, Cryptography and Coding Theory Cambridge University Press

A series of research papers on various aspects of coding theory, cryptography, and other areas, including new and unpublished results on the subjects. The book will be useful to students, researchers, professionals, and tutors interested in this area of research.