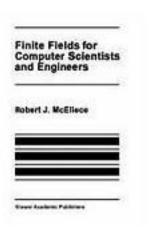# Finite Fields for Computer Scientists and Engineers (The Springer International Series in Engineering and Computer Science)

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The theory of finite fields is of central importance in engineering and computer science, because of its applications to error-correcting codes, cryptography, spread-spectrum communications, and digital signal processing. Though not inherently difficult, this subject is almost never taught in depth in mathematics

courses, (and even when it is the emphasis is rarely on the practical aspect). Indeed, most students get a brief and superficial survey which is crammed into a course on error-correcting codes. It is the object of this text to remedy this situation by presenting a thorough introduction to the subject which is completely sound mathematically, yet emphasizes those aspects of the subject which have proved to be the most important for applications. This book is unique in several respects. Throughout, the emphasis is on fields of characteristic 2, the fields on which almost all applications are based. The importance of Euclid's algorithm is stressed early and often. Berlekamp's polynomial factoring algorithm is given a complete explanation. The book contains the first treatment of Berlekamp's 1982 bit-serial multiplication circuits, and concludes with a thorough discussion of the theory of m-sequences, which are widely used in communications systems of many kinds.

作者介绍:

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