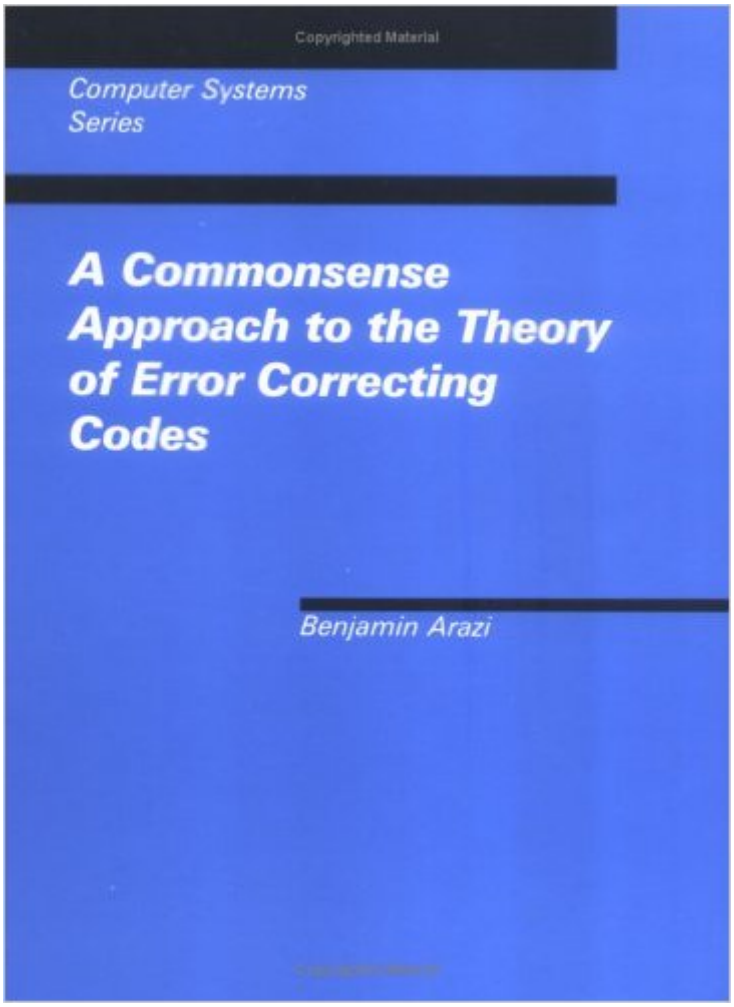
# A Commonsense Approach To The Theory Of Error-Correcting Codes (Computer Systems Series)



## Synopsis

Teaching the theory of error correcting codes on an introductory level is a difficult task. The theory, which has immediate hardware applications, also concerns highly abstract mathematical concepts. This text explains the basic circuits in a refreshingly practical way that will appeal to undergraduate electrical engineering students as well as to engineers and technicians working in industry.Arazi's truly commonsense approach provides a solid grounding in the subject, explaining principles intuitively from a hardware perspective. He fully covers error correction techniques, from basic parity check and single error correction cyclic codes to burst error correcting codes and convolutional codes. All this he presents before introducing Galois field theory - the basic algebraic treatment and theoretical basis of the subject, which usually appears in the opening chapters of standard textbooks. One entire chapter is devoted to specific practical issues, such as Reed-Solomon codes (used in compact disc equipment), and maximum length sequences (used in various fields of communications). The basic circuits explained throughout the book are redrawn and analyzed from a theoretical point of view for readers who are interested in tackling the mathematics at a more advanced level.Benjamin Arazi is an Associate Professor in the Department of Electrical and Computer Engineering at the Ben-Gurion University of the Negev. His book is included in the Computer Systems Series, edited by Herb Schwetman.

## Book Information

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## Customer Reviews

I am new to the field, BSEE. The book is concise, not alot of verbage. The book is what it claims to be, and very useful. It starts with simple codes and progresses through RS codes, and ends with a convolutional code. It teaches how and why without losing the reader in too much or too little theory.

I used this book to learn how to implement Single-Error Correcting Reed-Solomon decoders for use as a part of a project undertaken by my employer. I found that this book explained in far better detail and more English than Mathematics than any of the other 5 or so books I purchased to assist me. This book was recommended to me by a Professor of Optical Communications and how right he was. Some small details I had to glean from other books (such as feedback matrix for syndrome generator) but I got there in the end. What impressed me the most about this book is that I could understand it. I am an engineer, not a mathematician, and so many of the people who write books like this are mathematicians. What I needed was a practical solution that I could build. If you are just starting with Error Detection / Correction theory then this book is a good introduction. Believe me, I bought plenty of books on the matter, some of which were talking about "k-dimensional subspace" by the end of the first chapter and are now collecting dust in my bookshelf. The problem is the 6-week wait for delivery as the book is out of print. How about another print, MIT Press?

Just what I needed as basic intro to error correcting codes.

easy reading, good book

This is probably one of the worst books I have ever bought and read. The print is terrible, the notational conventions very unusual with very limited Mathematical exposition on the subject. I found the book very limited in its ability to present far less prove general principles. Seems like a bunch of class notes put together and printed for public consumption.

Approach to a Continuous Improvement Strategy, Second Edition Codes for Error Control and Synchronization (Artech House Communication & Electronic Defense Library) Secrets of Making and Breaking Codes: A Hands-on Guide to Both Simple and Sophisticated Codes to Easily Help You Become a Codemaster Black & Decker Codes for Homeowners, Updated 3rd Edition: Electrical - Mechanical - Plumbing - Building - Current with 2015-2017 Codes (Black & Decker Complete Guide) Recognizing and Correcting Developing Malocclusions: A Problem-Oriented Approach to Orthodontics Lidia's Commonsense Italian Cooking: 150 Delicious and Simple Recipes Anyone Can Master Five Easy Theses: Commonsense Solutions to America's Greatest Economic Challenges Turbo Codes: Principles and Applications (The Springer International Series in Engineering and Computer Science) A-Life for Music: Music and Computer Models of Living Systems (Computer Music and Digital Audio Series) Performance and Evaluation of Lisp Systems (Computer Systems Series) I Am Error: The Nintendo Family Computer / Entertainment System Platform (Platform Studies) Error Control Systems for Digital Communication and Storage