THE STRUCTURE OF DIGITAL COMPUTING: FROM MAINFRAMES TO BIG DATA BY ROBERT L. GROSSMAN

The Structure of Digital Computing

From Mainframes to Big Data

Robert L. Grossman

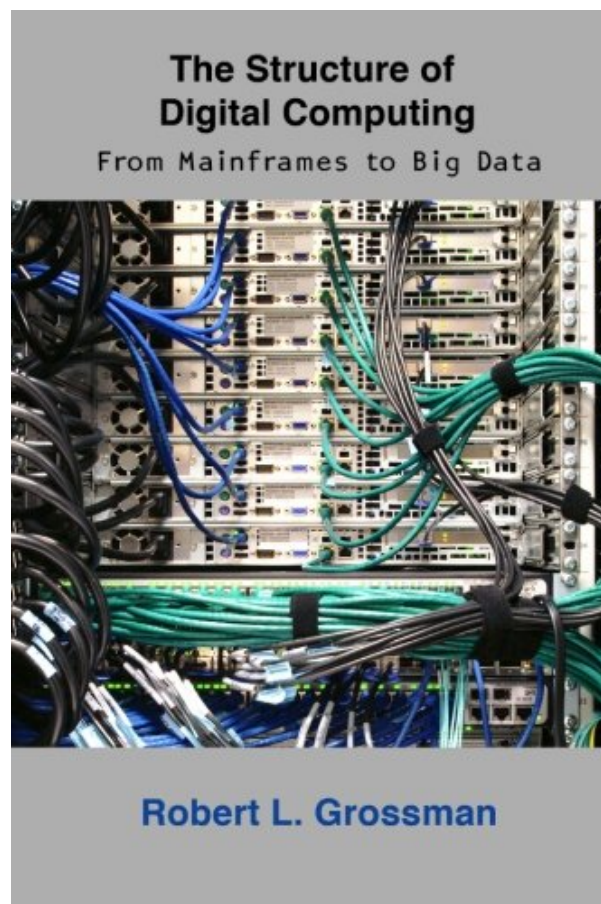# THE STRUCTURE OF DIGITAL COMPUTING: FROM MAINFRAMES TO BIG DATA BY ROBERT L. GROSSMAN PDF

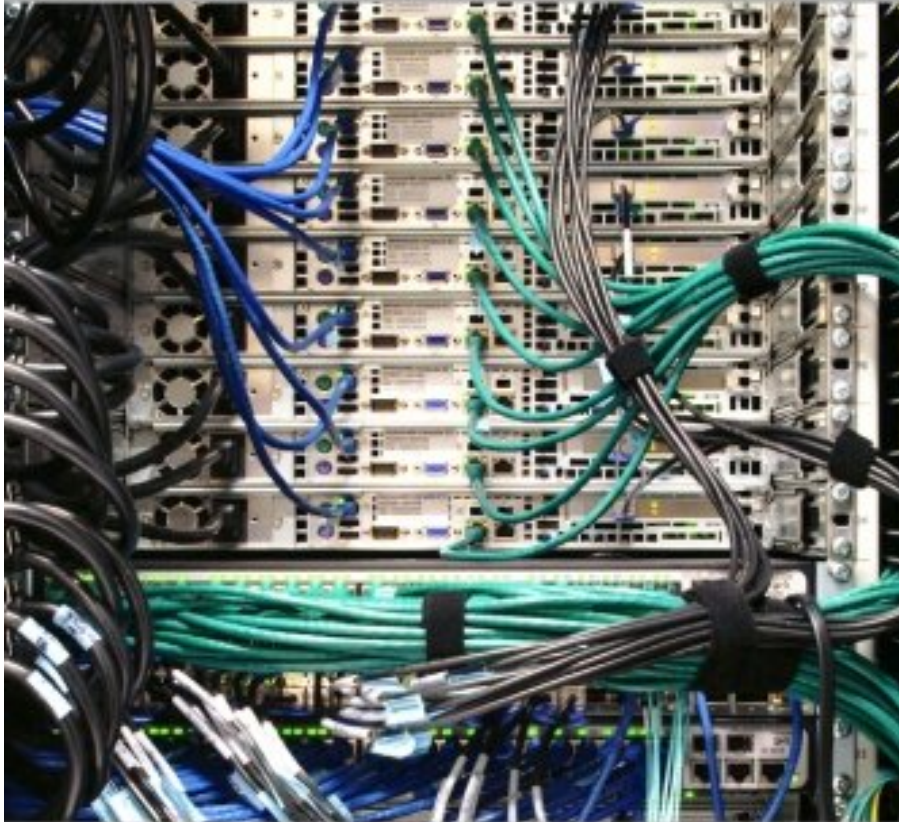**The Structure Of Digital Computing: From Mainframes To Big Data By Robert L. Grossman**. Accompany us to be participant here. This is the internet site that will provide you alleviate of looking book The Structure Of Digital Computing: From Mainframes To Big Data By Robert L. Grossman to read. This is not as the various other website; guides will certainly be in the types of soft data. What advantages of you to be participant of this website? Obtain hundred compilations of book connect to download and install and get always upgraded book on a daily basis. As one of the books we will offer to you currently is the The Structure Of Digital Computing: From Mainframes To Big Data By Robert L. Grossman that includes a quite satisfied principle.

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"An intriguing study of data and how it has evolved, 'The Structure of Digital Computing' is well worth considering, highly recommended." -The Midwest Book Review

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About the Author
Robert L. Grossman is a faculty member at the University of Chicago and a Partner of Open Data Group. At the University of Chicago, he is the Director of the Center for Data Intensive Science and a Professor in the Division of Biological Sciences. He is also a Senior Fellow in the Institute for Genomics and Systems Biology and the Computation Institute. He founded Open Data Group in 2002, and since then it has been one of the leaders in building predictive models over big data.

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The Structure of Digital Computing is a book that was mostly written over a decade ago, but still provides a gentle introduction to current technologies, including big data and devices / Internet of Things. Chapter 5 is an introduction to data science and big data. Chapter 1 gives an overview of digital computing, ending with the current emergence of devices (now beginning to be called the Internet of Things). Chapter 2 is how the increasing power of computing components and their decreasing costs impacts not just computing, but also storage, networking, software and data. Chapters 3 and 4 take the view that genuine innovation is relatively rare in digital computing and why, even when it does happen, it can still take several years to influence products in the market.

- Sales Rank: #2441343 in Books
- Published on: 2012-06-01
- Original language: English
- Number of items: 1
- Dimensions: 9.00" h x .64" w x 6.00" l, .84 pounds
- Binding: Paperback
- 282 pages

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Most helpful customer reviews

Future technology
By R. Larson
This book discusses the economic and technical development
of computers and associated developments in data.
The author discusses four main arenas:
1. the mainframe era
2. the PC era
3. the web era
4. the device era (e.g. smartphones)
It's interesting to compare this with George Dyson's book
Turing's Cathedral: The Origins of the Digital Universe
-- Dyson is mainly interested in the early development
of computer hardware, while Grossman takes the larger view of
the data developed on different platforms. One (among several)
interesting features is the Case Studies (one Case Study is the slide rule,
which I can see using as a basis for a class in which it is used
for a discussion of the FFT algorithm for multiplication).
He obliquely discusses the connection with some interesting mathematical points.
For example, he discusses Pythagoras' construction of irrational numbers using a straight
edge and compasses. Here you can glimpse his mailed fist inside the velvet glove:
"No wonder Pythagoras was disturbed. Today, our approach would probably be to outlaw
straight edges, since we are careful to protect our children and to keep them from
being disturbed by uncomfortable facts." [I didn't claim that the book wasn't entertaining.]
The book brings you up-to-date on many things, like the difference between IPv4 and IPv6
(I remember some comments among my colleagues: "Great! not only every appliance will have its
own IP address, but every egg in your refrigerator will have its own IP address." -- forgetting the
basic principle of hardware design: the one unforgivable sin is to have too small an address space.
This book should be read by everyone who is interested in the possible course of technology.

A great aide for those non-tech savvy individuals
By Brynn
I found the "Case Studies" inserted throughout the book to be most useful. Though I am not a "tech-person"
per say, I was able to learn complicated theories and terms in a structured and simplified way. Chapter 5 by
far was the best argument that I have read and heard for what is to come of big data in the coming decade. I
was skeptical at first that I would find the "The Structure of Digital Computing" an interesting read, but
Grossman is a great storyteller. This is now my go-to book for the emerging field of big data.

An understandable guide to Big Data and their impact on us.
By Michael
Big data in a small book, small in size but huge in information. Grossman has done what I considered
impossible, provided me with an understandable, witty and engaging, pithy exposition of the history, current
status and future of big data and the relevance of that future to science and business in particular and to all of
us in general. The organization of the book is spot on, with a format that facilitates reading a little or a lot at
any one time and encourages revisiting sections of special relevance to the reader, including the many
practical examples.

Grossman, a mathematician and much more, is Professor of Biological Sciences at the University of Chicago, Director of Informatics at the Institute for Genomics and Systems Biology and a Senior Fellow at the Computation Institute. He directs the Open Cloud Consortium, calling the Open Science Data Cloud a "datascope", comparing its impact to that of the microscope and telescope. Data mining is seen as a new source of knowledge, able to find significant patterns that are otherwise unrecognizable. You may well find yourself interested in joining the Consortium.

As a practicing healthcare professional and a researcher in psychophysiology who is also considering an entrepreneurial venture, I found the book invaluable, leading me to consider new ways to make sense of overwhelming masses of data and new ways to chart a course into a very competitive business environment. My own belief is that the future of healthcare lies in making it individualized, understanding the biological individuality of each of us by finding patterns in the big data that describe our biological being.

Big data, by the way, are BIG and growing: "The amount of data that big data facilities manage increases by a factor of approximately 1,000 a decade." A terabyte, which is a million kilobytes, no longer suffices in discussing big data. Nor does a petabyte, which is a thousand terabytes. Megawatts are the new measure, so that one might describe working "at a 15 MW data center that manages hundreds of petabytes of data." Grossman helps make sense of this all.

This book takes us on a ride through the growth of digital computing from Mainframes and PCs to the Web to Devices to the 5th Era, the Commoditization of Data. Along the way, there are visits to many laws, including my long term favorite, Moore's Law, which basically predicted the geometric growth of processing power. The book, however, is far more than the history and current and future Structure of Digital Computing, providing case histories from many disciplines that clarify the theory and technology and emphasize the impact of Big Data on all of us. If you are in business or research or neither, but wanting to know about the digital world we inhabit, how it is changing, and how those changes will in turn change our lives, this is a must-read book. You will also enjoy the philosophical and wryly humorous asides.

I have ordered 5 more book to give to friends and colleagues, hoping they will do the same.

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