

Read Free The Art
Of Hardware

Architecture
Design Methods

**The Art Of
Hardware
Architecture
Design
Methods
And**

**State of the Art in
Computer
Graphics**

Read Free The Art
Of Hardware

Architecture
Design Methods
And

**Aspects of
Visualization**
This is the fourth
volume derived
from a State of . .
. the Art in
Computer
Graphics
Summer
Institute. It
represents a
snapshot of a

Read Free The Art
Of Hardware

Architecture
Design Methods
And
**number of topics
in computer
graphics, topics
which include
visualization of
scientific data;
modeling; some
aspects of
visualization in
virtual reality;
and hardware
architectures for**

Read Free The Art
Of Hardware

Architecture
Design Methods
And

visualization.

**Many papers first
present a**

background

introduction to

the topic,

followed by

discussion of

current work in

the topic. The

volume is thus

equally suitable

Read Free The Art
Of Hardware
Architecture

**for
nonspecialists in
a particular area,
and for the more
experienced
researcher in the
field. It also
enables general
readers to obtain
an acquaintance
with a particular
topic area**

Read Free The Art
Of Hardware

Architecture
Design Methods
And

**sufficient to
apply that
knowledge in the
context of
solving current
problems. The
volume is
organized into
four chapters -
Visualization of
Data, Modeling,
Virtual Reality**

Read Free The Art
Of Hardware

Architecture
Design Methods
Techniques, and
Hardware

And
Architectures for
Visualization. In
the first chapter,
Val Watson and
Pamela Walatka
address the
visual aspects of
fluid dynamic
computations.
They discuss

Read Free The Art
Of Hardware

Architecture
Design Methods
And

**algorithms for
function-mapped
surfaces and
cutting planes,
isosurfaces,
particle traces,
and topology
extractions. They
point out that
current
visualization
systems are**

Read Free The Art
Of Hardware

Architecture
Design Methods
And
**limited by low
information
transfer**

**bandwidth, poor
response to
viewing and
model accuracy
modification
requests,
mismatches
between model
rendering and**

Read Free The Art Of Hardware

Architecture
Design Methods
And
**human cognitive
capabilities, and
ineffective**

interactive tools.

**However, Watson
and Walatka**

**indicate that
proposed**

systems will

**correct most of
these problems.**

Architecture

Read Free The Art
Of Hardware

Architecture
Design Methods
And

**Design for Soft
Errors provides a
comprehensive
description of the
architectural
techniques to
tackle the soft
error problem. It
covers the new
methodologies
for quantitative
analysis of soft**

Read Free The Art
Of Hardware

Architecture
Design Methods
And
**errors as well as
novel, cost-
effective**

**architectural
techniques to
mitigate them. To
provide readers
with a better
grasp of the
broader problem
definition and
solution space,**

Read Free The Art Of Hardware

Architecture
Design Methods
And

**this book also
delves into the
physics of soft
errors and
reviews current
circuit and
software
mitigation
techniques.
There are a
number of
different ways**

Read Free The Art
Of Hardware

Architecture
Design Methods
And

**this book can be
read or used in a
course: as a
complete course
on architecture
design for soft
errors covering
the entire book; a
short course on
architecture
design for soft
errors; and as a**

Read Free The Art
Of Hardware

Architecture
reference book
Design Methods
on classical fault-
And tolerant

machines. This
book is
recommended
for practitioners
in semi-
conductor
industry,
researchers and
developers in

Read Free The Art
Of Hardware

Architecture
Design Methods
And
**computer
architecture,
advanced**

**graduate seminar
courses on soft
errors, and (iv) as
a reference book
for
undergraduate
courses in
computer
architecture.**

Read Free The Art
Of Hardware

Architecture
Design Methods
And

**Helps readers
build-in fault
tolerance to the
billions of
microchips
produced each
year, all of which
are subject to
soft errors**

**Shows readers
how to quantify
their soft error**

Read Free The Art
Of Hardware

Architecture

reliability

Design Methods
And
**Provides state-of-
the-art**

techniques to

protect against

soft errors

The new RISC-V

Edition of

Computer

Organization and

Design features

the RISC-V open

Read Free The Art
Of Hardware
Architecture

source

Design Methods

And

architecture, the

first open source

architecture

designed to be

used in modern

computing

environments

such as cloud

computing,

mobile devices,

Read Free The Art
Of Hardware
Architecture
and other
Design Methods
And
systems. With
the post-PC era
now upon us,
Computer
Organization and
Design moves
forward to
explore this
generational
change with

Read Free The Art
Of Hardware

Architecture
Design Methods
And
**examples,
exercises, and
material**

**highlighting the
emergence of
mobile**

**computing and
the Cloud.**

**Updated content
featuring tablet
computers,
Cloud**

Read Free The Art
Of Hardware

Architecture
Design Methods
And
**infrastructure,
and the x86
(cloud**

**computing) and
ARM (mobile
computing
devices)**

**architectures is
included. An
online**

**companion Web
site provides**

Read Free The Art
Of Hardware

Architecture
Design Methods
And

**advanced
content for
further study,
appendices,
glossary,
references, and
recommended
reading. Features
RISC-V, the first
such architecture
designed to be
used in modern**

Read Free The Art
Of Hardware

Architecture
Design Methods
And

**computing
environments,
such as cloud
computing,
mobile devices,
and other
embedded
systems Includes
relevant
examples,
exercises, and
material**

Read Free The Art
Of Hardware

Architecture
Design Methods
And
**highlighting the
emergence of
mobile**

**computing and
the cloud**

**This series offers
a range of
heretofore
unavailable
writings in
English
translation on the**

Read Free The Art
Of Hardware

Architecture
Design Methods
And
**subjects of art,
architecture, and
aesthetics.**

**Camus's
description of the
French hotel
argues that
architecture
should please
the senses and
the mind.**

A Quantitative

Read Free The Art
Of Hardware
Architecture
**Approach
Aspects of
Visualization**

**Systems
Architecture
The Hardware
Software
Interface
The Art of
Hardware
Architecture**

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Of Hardware

Architecture
Computer
Design Methods
And
Architecture: A
Quantitative

*Approach, Sixth
Edition has been
considered
essential reading
by instructors,
students and
practitioners of
computer design
for over 20 years.
The sixth edition*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*

*of this classic
textbook from
Hennessy and
Patterson,
winners of the
2017 ACM A.M.
Turing Award
recognizing
contributions of
lasting and major
technical
importance to the
computing field,*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*is fully revised
with the latest
developments in
processor and
system
architecture. The
text now features
examples from
the RISC-V (RISC
Five) instruction
set architecture,
a modern RISC
instruction set*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*developed and
designed to be a
free and openly
adoptable
standard. It also
includes a new
chapter on
domain-specific
architectures and
an updated
chapter on
warehouse-scale
computing that*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*

*features the first
public information
on Google's
newest WSC. True
to its original
mission of
demystifying
computer
architecture, this
edition continues
the longstanding
tradition of
focusing on areas*

Read Free The Art Of Hardware

Architecture
Design Methods
And

*where the most
exciting
computing*

*innovation is
happening, while
always keeping
an emphasis on
good engineering
design. Winner of
a 2019 Textbook
Excellence Award
(Texty) from the
Textbook and*

Read Free The Art
Of Hardware

Architecture
Academic Authors
Design Methods
Association

*Includes a new
chapter on
domain-specific
architectures,
explaining how
they are the only
path forward for
improved
performance and
energy efficiency
given the end of*

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*Architecture
Design Methods
And*

*Moore's Law and
Dennard scaling
Features the first
publication of
several DSAs
from industry
Features
extensive
updates to the
chapter on
warehouse-scale
computing, with
the first public*

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*Architecture
information on
Design Methods
the newest*

*And
Google WSC
Offers updates to
other chapters
including new
material dealing
with the use of
stacked DRAM;
data on the
performance of
new NVIDIA
Pascal GPU vs.*

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*Architecture
Design Methods
And*
*new AVX-512
Intel Skylake CPU;
and extensive
additions to
content covering
multicore
architecture and
organization
Includes "Putting
It All Together"
sections near the
end of every
chapter,*

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*Architecture
Design Methods
And*
providing real-
world technology
examples that
demonstrate the
principles
covered in each
chapter Includes
review

*appendices in the
printed text and
additional
reference
appendices*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*available online
Includes updated
and improved
case studies and
exercises ACM
named John L.
Hennessy and
David A.
Patterson,
recipients of the
2017 ACM A.M.
Turing Award for
pioneering a*

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*systematic,
quantitative
approach to the*

*design and
evaluation of
computer*

*architectures with
enduring impact
on the*

*microprocessor
industry*

*This book outlines
a set of issues*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*that are critical to
all of parallel arch
itecture--commun
ication latency,
communication
bandwidth, and
coordination of
cooperative work
(across modern
designs). It
describes the set
of techniques
available in*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*hardware and in
software to
address each
issues and
explore how the
various
techniques
interact.*

*Holger Scherl
introduces the
reader to the
reconstruction
problem in*

Read Free The Art Of Hardware

Architecture
computed
Design Methods
And
tomography and
its major
scientific
challenges that
range from
computational
efficiency to the
fulfillment of
Tuy's sufficiency
condition. The
assessed
hardware

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
architectures
include multi- and
many-core
systems, cell
broadband engine
architecture,
graphics
processing units,
and field
programmable
gate arrays.
Explores the
fundamentals

Read Free The Art Of Hardware

Architecture
Design Methods
And

*required to
understand,
analyze, and
implement space
modulation
techniques
(SMTs) in
coherent and non-
coherent radio
frequency
environments*

*This book focuses
on the concept of*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*space modulation
techniques
(SMTs), and
covers those
emerging high
data rate wireless
communication
techniques. The
book discusses
the advantages
and
disadvantages of
SMTs along with*

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Of Hardware
Architecture

their

performance. A

general

framework for

analyzing the

performance of

SMTs is provided

and used to detail

their performance

over several

generalized

fading channels.

The book also

Read Free The Art Of Hardware

Architecture
addresses the
Design Methods
transmitter

And
design of these
techniques with
the optimum
number of
hardware
components and
the use of these
techniques in
cooperative and
mm-Wave
communications.

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Beginning with an introduction to the subject and a brief history, Space Modulation Techniques goes on to offer chapters covering MIMO systems like spatial multiplexing and space-time coding. It then

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*Architecture
Design Methods
And*

looks at channel models, such as Rayleigh, Rician, Nakagami-m, and other generalized distributions. A discussion of SMTs includes techniques like space shift keying (SSK), space-time shift keying (STSK), trellis

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Architecture
Design Methods
And
*coded spatial
modulation*

*(TCSM), spatial
modulation (SM),*

*generalized
spatial*

*modulation
(GSM),*

*quadrature
spatial*

*modulation
(QSM), and more.*

The book also

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*presents a non-
coherent design
for different
SMTs, and a
framework for
SMTs'
performance
analysis in
different channel
conditions and in
the presence of
channel
imperfections, all*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
that along with an
information

*theoretic
treatment of
SMTs. Lastly, it
provides
performance
comparisons,
results, and
MATLAB codes
and offers
readers practical
implementation*

Read Free The Art Of Hardware

Architecture
designs for SMTs.

The book also:

Provides readers
with the expertise
of the inventors
of space
modulation
techniques
(SMTs) Analyzes
error
performance,
capacity
performance, and

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Of Hardware
Architecture
system
Design Methods
complexity.

And
Discusses
practical
implementation
of SMTs and
studies SMTs with
cooperative and
mm-Wave
communications
Explores and
compares MIMO
schemes Space

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Of Hardware

Architecture
Modulation
Design Methods
And
Techniques is an
ideal book for
professional and
academic readers
that are active in
the field of SMT
MIMO systems.
On ASIC and
FPGA
80486 System
Architecture
Hardware and

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Of Hardware

Architecture
Software Support
Design Methods
And
Energy Efficient
Algorithms and
Architectures
Multiprocessor
System-on-Chip
Hardware Design
and Tool
Integration
The
Architecture

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Of Hardware

Architecture
of Computer
Design Methods
Hardware,
And
Systems

Software and
Networking is
designed help
students
majoring in
information
technology
(IT) and
information

Read Free The Art
Of Hardware

Architecture
Design Methods
And
*systems (IS)
understand the
structure and
operation of
computers and
computer-based
devices.*

*Requiring only
basic computer
skills, this
accessible
textbook*

Read Free The Art
Of Hardware

Architecture

*introduces the
basic*

Design Methods

*And
principles of
system*

architecture

and explores

current

technological

practices and

trends using

clear, easy-to-

understand

Read Free The Art
Of Hardware
Architecture
language.

Design Methods
And
Throughout the
text, numerous
relatable
examples, subj
ect-specific
illustrations,
and in-depth
case studies
reinforce key
learning
points and

Read Free The Art Of Hardware

Architecture
Design Methods
And
*show students
how important
concepts are
applied in the
real world.*

*This fully-
updated sixth
edition
features a
wealth of new
and revised
content that*

Read Free The Art
Of Hardware

Architecture
reflects
Design Methods
And
today's

*technological
landscape.*

*Organized into
five parts,
the book first
explains the
role of the
computer in
information
systems and*

Read Free The Art Of Hardware

Architecture
Design Methods
And
*provides an
overview of
its*

components.

Subsequent

sections

discuss the

representation

of data in the

computer,

hardware

architecture

Read Free The Art
Of Hardware
Architecture
and
Design Methods
And
concepts, the
basics of
computer
networking,
system
software and
operating
systems, and
various
interconnected

Read Free The Art Of Hardware

Architecture
*systems and
Design Methods
components.*

*And
Students are
introduced to
the material
using ideas
already
familiar to
them, allowing
them to
gradually
build upon*

Read Free The Art Of Hardware

Architecture
Design Methods
And
*what they have
learned*

*without being
overwhelmed*

*and develop a
deeper*

*knowledge of
computer*

architecture.

This book

*focuses on the
core question*

Read Free The Art
Of Hardware
Architecture
of the
Design Methods
necessary
And
architectural
support
provided by
hardware to
efficiently
run virtual
machines, and
of the
corresponding
design of the

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Architecture
Design Methods
And
Virtualization
is still
possible when
the
instruction
set
architecture
lacks such
support, but
the hypervisor

Read Free The Art Of Hardware

Architecture
Design Methods
And
*remains more
complex and
must rely on*

*additional
techniques.
Despite the
focus on
architectural
support in
current
architectures,
some*

Read Free The Art Of Hardware

Architecture
Design Methods
And

*historical
perspective is
necessary to
appropriately
frame the
problem. The
first half of
the book
provides the
historical
perspective of
the*

Read Free The Art
Of Hardware

Architecture
*theoretical
Design Methods*

*framework
And
developed four
decades ago by
Popek and
Goldberg. It
also describes
earlier
systems that
enabled
virtualization
despite the*

Read Free The Art Of Hardware

Architecture
Design Methods
And
*lack of
architectural
support in*

*hardware. As
is often the
case, theory
defines a
necessary-but
not
sufficient-set
of features,
and modern*

Read Free The Art
Of Hardware

Architecture
Design Methods
And
*architectures
are the result
of the
combination of
the
theoretical
framework with
insights
derived from
practical
systems. The
second half of*

Read Free The Art Of Hardware

Architecture
Design Methods
And
*the book
describes state-
of-the-art*

*support for
virtualization
in both x86-64
and ARM
processors.*

*This book
includes an in-
depth
description of*

Read Free The Art
Of Hardware

Architecture
the CPU,
Design Methods
memory, and
And
I/O

virtualization
of these two
processor
architectures,
as well as
case studies
on the
Linux/KVM,
VMware, and

Read Free The Art
Of Hardware
Architecture

Xen

Design Methods

hypervisors.

And

It concludes

with a

performance

comparison of

virtualization

on current-

generation

x86- and ARM-

based systems

across

Read Free The Art
Of Hardware

Architecture
*multiple
Design Methods
And*

*hypervisors.
Simulation of
computer
architectures
has made rapid
progress
recently. The
primary
application
areas are hard
ware/software*

Read Free The Art
Of Hardware

Architecture
performance
Design Methods
And
estimation and
optimization
as well as
functional and
timing
verification.
Recent,
innovative
technologies
such as
retargetable

Read Free The Art
Of Hardware
Architecture

*simulator
generation,
dynamic binary
translation,
or sampling
simulation
have enabled
widespread use
of processor
and system-on-
chip (SoC)
simulation*

Read Free The Art Of Hardware

Architecture
Design Methods
And
*tools in the
semiconductor
and embedded
system*

*industries. Si
multaneously,
processor and
SoC simulation
is still a
very active
research area,
e.g. what*

Read Free The Art Of Hardware

Architecture
Design Methods
And
*amounts to
higher
simulation*

speed,

flexibility,

and

accuracy/speed

trade-offs.

This book

presents and

discusses the

principle

Read Free The Art
Of Hardware

Architecture
technologies
Design Methods
And
the-art in

high-level

hardware

architecture

simulation,

both at the

processor and

the system-on-
chip level.

This handbook

Read Free The Art
Of Hardware

Architecture
presents
Design Methods
And
fundamental

knowledge on
the hardware/s
oftware

(HW/SW)

codesign
methodology.

Contributing
expert authors
look at key
techniques in

Read Free The Art Of Hardware

Architecture
the design
Design Methods
flow as well
And
as selected

codesign tools
and design
environments,
building on
basic
knowledge to
consider the
latest
techniques.

Read Free The Art Of Hardware

Architecture
Design Methods
And

The book enables readers to gain real benefits from the HW/SW codesign methodology through explanations and case studies which

Read Free The Art Of Hardware

Architecture
demonstrate
Design Methods
its
And
usefulness.

Readers are
invited to
follow the
progress of
design
techniques
through this
work, which
assists

Read Free The Art
Of Hardware

Architecture
readers in
Design Methods
following
And
current

research

directions and

learning about

state-of-the-

art

techniques.

Students and

researchers

will

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*appreciate the
wide spectrum
of subjects
that belong to
the design
methodology
from this
handbook.*

*Distributed
Embedded Smart
Cameras
Efficient*

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Of Hardware

Architecture
*Processing of
Design Methods
Deep Neural
And
Networks*

*Architecture
Design for
Soft Errors
State of the
Art in
Computer
Graphics
Software
Aspects,*

Page 90/230

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Of Hardware

Architecture
**Coding, and
Design Methods
Hardware**

**And
Racing the
Beam**

*This title gives
students an integrated
and rigorous picture
of applied computer
science, as it comes to
play in the
construction of a
simple yet powerful*

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Of Hardware
Architecture
computer system.

This book provides a structured treatment of the key principles and techniques for enabling efficient processing of deep neural networks (DNNs). DNNs are currently widely used for many artificial intelligence (AI) applications,

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*Architecture
Design Methods
And*
*including computer
vision, speech
recognition, and*

*robotics. While DNNs
deliver state-of-the-
art accuracy on many
AI tasks, it comes at
the cost of high
computational
complexity.*

*Therefore, techniques
that enable efficient
processing of deep*

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Of Hardware
Architecture

*neural networks to
improve
metrics—such as
energy-efficiency,
throughput, and
latency—without
sacrificing accuracy
or increasing
hardware costs are
critical to enabling
the wide deployment
of DNNs in AI
systems. The book*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*includes background
on DNN processing; a
description and
taxonomy of
hardware
architectural
approaches for
designing DNN
accelerators; key
metrics for evaluating
and comparing
different designs;
features of the DNN*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
*processing that are
amenable to
hardware/algorithm
co-design to improve
energy efficiency and
throughput; and
opportunities for
applying new
technologies. Readers
will find a structured
introduction to the
field as well as a
formalization and*

Read Free The Art Of Hardware

*organization of key
concepts from*

*contemporary works
that provides insights
that may spark new
ideas.*

*This book describes
the most recent
techniques for turbo
decoder
implementation,
especially for 4G and
beyond 4G*

Read Free The Art
Of Hardware

Architecture
Design Methods
And

applications. The authors reveal techniques for the design of high-throughput decoders for future telecommunication systems, enabling designers to reduce hardware cost and shorten processing time. Coverage includes an

Read Free The Art
Of Hardware

*Architecture
Design Methods
And*
*explanation of VLSI
implementation of the
turbo decoder, from
basic functional units
to advanced parallel
architecture. The
authors discuss both
hardware architecture
techniques and
experimental results,
showing the
variations in area/thr
oughput/performance*

Read Free The Art Of Hardware

*Architecture
Design Methods
And*
***with respect to several
techniques. This book
also illustrates turbo
decoders for 3GPP-
LTE/LTE-A and
IEEE 802.16e/m
standards, which
provide a low-
complexity but high-
flexibility circuit
structure to support
these standards in
multiple parallel***

Read Free The Art Of Hardware

modes. Moreover, some solutions that can overcome the limitation upon the speedup of parallel architecture by modification to turbo codec are presented here. Compared to the traditional designs, these methods can lead to at most 33% gain in throughput

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Of Hardware

Architecture
*with similar
performance and
similar cost.*

*This book shows
readers how to
develop energy-
efficient algorithms
and hardware
architectures to
enable high-
definition 3D video
coding on resource-
constrained embedded*

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Of Hardware

Architecture
Design Methods
And
*devices. Users of the
Multiview Video
Coding (MVC)*

*standard face the
challenge of
exploiting its 3D video-
specific coding tools
for increasing
compression
efficiency at the cost
of increasing
computational
complexity and,*

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Architecture
Design Methods
And
*consequently, the
energy consumption.*

*This book enables
readers to reduce the
multiview video
coding energy
consumption through
jointly considering the
algorithmic and
architectural levels.
Coverage includes an
introduction to 3D
videos and an*

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*Architecture
Design Methods
And*
*extensive discussion
of the current state-of-
the-art of 3D video
coding, as well as
energy-efficient
algorithms for 3D
video coding and
energy-efficient
hardware architecture
for 3D video coding.*

*Multithreaded
Computer*

Architecture: A

Page 105/230

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*Summary of the State
of the ART*

Heterogeneous

Computing

Building a Modern

Computer from First

Principles

The Elements of

Computing Systems

Application-Specific

Hardware

Architecture Design

with VHDL

Page 106/230

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and Architecture for
Big-data Analytics*

This book guides
readers through
the design of
hardware
architectures
using VHDL for
digital
communication
and image
processing

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applications
that require
performance
computing.

Further it
includes the
description of
all the VHDL-
related notions,
such as
language, levels
of abstraction,
combinational
vs. sequential

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logic,
structural and
behavioral
description,
digital circuit
design, and
finite state
machines. It
also includes
numerous
examples to make
the concepts
presented in
text more easily

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And
understandable.

If engineering
is the art and
science of
technical
problem solving,
systems
architecting
happens when you
don't yet know
what the problem
is. The third
edition of a
highly respected

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Architecture
Design Methods
bestseller, The
Art of Systems

Architecting
provides in-
depth coverage
of the least
understood part
of systems
design: moving
from a vague
concept and
limited
resources to a
satisfactory and

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And

feasible system
concept and an
executable
program. The
book provides a
practical,
heuristic
approach to the
"art" of systems
architecting. It
provides methods
for embracing,
and then taming,
the growing

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complexity of
modern systems.

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illustrating

successful and

unsuccessful

practices

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standards for

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business
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architecture as
the technical
embodiment of
strategy
Integration of
process guidance

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and managing

architecture
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to the rapidly
changing fields
of software and
systems-of-
systems

architecture
Organization of
heuristics
around a simple
and practical

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A
Heuristic

process model A
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Approach to the
Art of Systems
Architecting
Extensively
rewritten to
reflect the
latest
developments,
the text
explains how to
create a system

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Architecture
Design Methods
Analysis

from scratch,
presenting
invention/design
rules together
with clear
explanations of
how to use them.
The author
supplies
practical
guidelines for
avoiding common
systematic
failures while

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And
implementing new
mandates. He

uses a
heuristics-based
approach that
provides an
organized attack
on very ill-
structured
engineering
problems.

Examining
architecture as
more than a set

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of diagrams and documents, but as a set of decisions that either drive a system to success or doom it to failure, the book provide methods for integrating business strategy with technical

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architectural
decision making.

80486 System
Architecture
describes the
hardware
architecture of
PC products
using the Intel
family of 80486
chips, providing
a clear, concise
explanation of
the 80486

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Architecture
processor's
Design Methods
relationship to

the rest of the
system. The

author provides
a comprehensive
treatment of the
processor
including:

- 80486 microarch
itecture and its
functional units
- internal and
external caches

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-hardware
Design Methods
interface -SL

technology

features

-instructions

new to the 80486

-the register

set -486/487SX

processors

-486DX2

processors

-486DX2 write-

back enhanced

processor

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Architecture
-486DX4

processors -impl
ementation-

specific issues

-main memory

subsystem design

-OverDrive

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test hardware or

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involves 486

processors,

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and Dell, have
mastered the art
of pinpointing
and succinctly
explaining just
the critical

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Architecture

information that
PC programmers,
software and
hardware
designers, and
engineers need
to know and
leaving out the
rest. The result
is an exciting
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productivity.
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architecture has
emerged as one
of the most
promising and
exciting avenues
for the
exploitation of

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represents the
confluence of
several
independent
research
directions which
have united over
a common set of
issues and
techniques.
Multithreading
draws on recent

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And

advances in
dataflow, RISC,
compiling for
fine-grained
parallel
execution, and
dynamic resource
management. It
offers the hope
of dramatic
performance
increases
through parallel
execution for a

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based on
extensions to
'traditional'
approaches.
Multithreaded
Computer
Architecture is
divided into
four parts,
reflecting four
major

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And
perspectives on
the topic. Part
I provides the
reader with
basic background
information,
definitions, and
surveys of work
which have in
one way or
another been
pivotal in
defining and
shaping

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multithreading
as an

architectural
discipline. Part
II examines key
elements of
multithreading,
highlighting the
fundamental
nature of
latency and
synchronization.
This section
presents clever

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Architecture
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And

techniques for
hiding latency
and supporting
large
synchronization
name spaces.
Part III looks
at three major
multithreaded
systems,
considering
issues of
machine
organization and

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And
compilation
strategy. Part
IV concludes the
volume with an
analysis of
multithreaded
architectures,
showcasing
methodologies
and actual
measurements.
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Computer
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is an excellent
reference source
and may be used
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on the subject.

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Techniques

The Atari Video
Computer System
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Machine

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This publication addresses distributed embedded smart cameras -cameras that perform on board analysis and collaborate with other cameras. This book provides the material required to better understand the architectural design challenges of embedded smart

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*Architecture
Design Methods
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camera systems, the hardware/software ecosystem, the design approach for and applications of distributed smart cameras together with the state-of-the-art algorithms. The authors concentrate on the architecture, hardware/software design, realization of smart camera

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*Architecture
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*networks from
applications to
architectures, in
particular in the
embedded and
mobile domains.*

*Software Defined
Radio makes wireless
communications
easier, more efficient,
and more reliable.*

*This book bridges the
gap between
academic research*

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When beginning a project, practicing engineers, technical managers, and graduate students can save countless hours by considering the concepts presented in these pages. The author covers the myriad options and trade-

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*Architecture
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App*

*offs available when
selecting an
appropriate hardware
architecture. As
demonstrated here,
the choice between
hardware- and
software-centric
architecture can
mean the difference
between meeting an
aggressive schedule
and bogging down in
endless design*

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iterations. Because of
the author's

experience

*overseeing dozens of
failed and successful
developments, he is
able to present many
real-life examples.*

*Some of the key
concepts covered
are: Choosing the
right architecture for
the market -*

laboratory, military,

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or commercial,
Hardware platforms –
FPGAs, GPPs,
specialized and
hybrid devices,
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efforts to ensure
interoperability and
portability
State-of-
the-art components
for radio frequency,
mixed-signal, and
baseband processing.
The text requires

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*only minimal
knowledge of
wireless*

*communications;
whenever possible,
qualitative
arguments are used
instead of equations.
An appendix provides
a quick overview of
wireless
communications and
introduces most of
the concepts the*

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*Architecture
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Arch*

*readers will need to
take advantage of
the material. An
essential introduction
to SDR, this book is
sure to be an
invaluable addition to
any technical
bookshelf.*

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developments in
computer
architecture, fairly
recent publications*

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*Architecture
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can quickly become
outdated. Computer

Architecture:

*Software Aspects,
Coding, and*

*Hardware takes a
modern approach.*

*This comprehensive,
practical text*

*provides that critical
understanding of a*

*central processor by
clearly detailing*

fundamentals, and

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*Architecture
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cutting edge design
features. With its
balanced

software/hardware
perspective and its
description of
Pentium processors,
the book allows
readers to acquire
practical PC software
experience. The text
presents a foundation-
level set of ideas,
design concepts, and

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*Architecture
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applications that fully
meet the

*requirements of
computer
organization and
architecture courses.
The book features a
"bottom up"
computer design
approach, based
upon the author's
thirty years
experience in both
academe and*

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industry. By combining computer engineering with electrical engineering, the author describes how logic circuits are designed in a CPU. The extensive coverage of a micromprogrammed CPU and new processor design features gives the insight of current

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advanced levels.

Topics include: o

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numbers o Integer

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Stack machine

principles

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*Architecture! VLIW
Microprocessor*

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guide to VLIW
hardware*

*design—providing
state-of-the-art
coverage of
microarchitectures,*

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And*

*RTL coding, ASIC
flow, and FPGA flow
of design. The book
also contains a wide
range of skills-
building examples, all
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that equip you with a
practical, hands-on
tutorial for
understanding each
step in the VLIW
microprocessor
design process.*

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Architecture
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Written by Weng
Fook Lee, an

*internationally
renowned expert in
the field of
microprocessor
design, this cutting-
edge hardware
design tool presents
unsurpassed
coverage of the
latests in VLIW
microprocessing.
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*Architecture,
comprehensive, VLIW
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Microprocessor*

*Hardware Design
features: Step-by-
step information on
the VLIW hardware
design process A
wealth of Verilog-
based designs ASIC
and FPGA
implementations
Expert guidance on
the best-known
methods for RTL*

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*Architecture,
coding Over 75
Design Methods,
detailed illustrations
that clarify each*

*aspect of VLIW
design Inside this*

*Complete VLIW
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Toolkit • Introduction

• Design

Methodology • RTL

Coding,

Testbenching, and

Simulation • FPGA

Implementation •

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Testbenches and
Simulation Results •*

*Synthesis Results and
Gate Level Netlist
Parallel Computer
Architecture*

*A Hardware/software
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An Information

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Technology Approach
Design Methods
Turbo Decoder

Architecture for
Beyond-4G
Applications

*This book highlights
the complex issues,
tasks and skills that
must be mastered by
an IP designer, in
order to design an
optimized and robust*

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*Architecture
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And*

*digital circuit to solve
a problem. The
techniques and
methodologies
described can serve
as a bridge between
specifications that are
known to the designer
and RTL code that is
final outcome,
reducing significantly
the time it takes to*

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Architecture
Design Methods
And
*convert initial ideas
and concepts into
right-first-time*

*silicon. Coverage
focuses on real
problems rather than
theoretical concepts,
with an emphasis on
design techniques
across various aspects
of chip-design.*

The book's aim is to

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*Architecture
Design Methods
And*
*highlight all the
complex issues, tasks
and techniques that
must be mastered by
a SoC Architect to
define and architect
SoC for an embedded
application. This
book is primary
focused on real
problems with
emphasis on*

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architectural
Design Methods
techniques across
And

*various aspects of
chip-design,
especially in context
to embedded systems.*

*The book covers
aspects of embedded
systems in a
consistent way,
starting with basic
concepts that provides*

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Architecture
introduction to
Design Methods
And
embedded systems

*and gradually
increasing the depth
to reach advanced
concepts, such as
power management
and design
consideration for
maximum power
efficiency and higher
battery life.*

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*Theoretical part has
been intentionally
kept to the minimum
that is essentially
required to
understand the
subject. The
guidelines explained
across various
chapters are
independent of any
CAD tool or silicon*

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Of Hardware
Architecture
*process and are
Design Methods
And
applicable to any SoC
architecture targeted
for embedded
systems.*

*Om hvordan
mikroprocessorer
fungerer, med
undersøgelse af de
nyeste
mikroprocessorer fra
Intel, IBM og*

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Motorola.

Use your Raspberry

*Pi to get smart about
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*fundamentals In the
1980s, the tech*

revolution was

*kickstarted by a flood
of relatively*

*inexpensive, highly
programmable*

computers like the

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*Commodore. Now, a
second revolution in
computing is*

*beginning with the
Raspberry Pi.*

*Learning Computer
Architecture with the
Raspberry Pi is the
premier guide to
understanding the
components of the
most exciting tech*

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*Architecture
product available.
Design Methods
And*

*Thanks to this book,
every Raspberry Pi
owner can
understand how the
computer works and
how to access all of
its hardware and
software capabilities.
Now, students,
hackers, and casual
users alike can*

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discover how
Design Methods
And
computers work with
Learning Computer

*Architecture with the
Raspberry Pi. This
book explains what
each and every
hardware component
does, how they relate
to one another, and
how they correspond
to the components of*

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*other computing
Design Methods
systems. You'll also
And
learn how*

programming works

and how the

operating system

relates to the

Raspberry Pi's

physical components.

Co-authored by Eben

Upton, one of the

creators of the

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*descriptions of the
functions of memory
storage, Ethernet,*

*cameras, processors,
and more Gain*

*knowledge of
computer design and
operation in general
by exploring the basic
structure of the*

*Raspberry Pi The
Raspberry Pi was*

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And
*created to bring forth
a new generation of*

*computer scientists,
developers, and
architects who
understand the inner
workings of the
computers that have
become essential to
our daily lives.*

*Learning Computer
Architecture with the*

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And
*Raspberry Pi is your
gateway to the world
of computer system
design.*

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*Architectures, Design
and Applications
Implementing
Software Defined
Radio*

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*Art in Architecture
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Program*

*And
Designing Embedded
Hardware*

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Deep Learning

The Art of

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Architecture Design

Methods and

Techniques for

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Architecture
**Digital
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And
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**This book explores
C-based design,
implementation,
and analysis of post-
quantum
cryptography
(PQC) algorithms
for signature**

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Architecture
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And

**generation and
verification. The
authors investigate
NIST round 2 PQC
algorithms for
signature
generation and
signature
verification from a
hardware
implementation
perspective,**

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Architecture

**especially focusing
on C-based design,**

**power-performance-
area-security**

(PPAS) trade-offs

and design flows

targeting FPGAs

and ASICs.

Describes a

comprehensive set

of synthesizable c

code base as well as

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Architecture
Design Methods
And

**the hardware
implementations
for the different
types of PQC
algorithms
including lattice-
based, code-based,
and multivariate-
based;**

**Demonstrates the
hardware (FPGA
and ASIC) and**

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Of Hardware

Architecture
Design Methods
And
**hardware-software
optimizations and
trade-offs of the
NIST round 2
signature-based
PQC algorithms;
Enables designers
to build hardware
implementations
that are resilient to
a variety of side-
channels.**

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**Design Methods
And
Architecture, Sixth
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comprehensive
introduction to
information
systems hardware
and software in
business. This new
edition remains an
indispensable tool
for IS students,**

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Architecture
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And
**emphasizing a
managerial, broad
systems perspective
for a holistic
approach to
systems
architecture. Each
chapter has been
updated thoroughly
to reflect the
changing nature of
new technologies,**

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And
**and all end-of-
chapter material
has been enhanced**

and expanded.

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**This book presents
and discusses
innovative ideas in**

**the design,
modelling,
implementation,
and optimization of
hardware
platforms for
neural networks.**

**The rapid growth
of server, desktop,**

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Architecture
Design Methods
And
**and embedded
applications based
on deep learning
has brought about
a renaissance in
interest in neural
networks, with
applications
including image
and speech
processing, data
analytics, robotics,**

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Architecture
**healthcare
monitoring, and
IoT solutions.**

**Efficient
implementation of
neural networks to
support complex
deep learning-
based applications
is a complex
challenge for
embedded and**

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And

**mobile computing
platforms with
limited computatio
nal/storage
resources and a
tight power budget.
Even for cloud-
scale systems it is
critical to select the
right hardware
configuration based
on the neural**

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**network complexity
and system**

Design Methods
And
**constraints in order
to increase power-
and performance-
efficiency.**

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Architectures for

Deep Learning

provides an

overview of this

new field, from

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researchers,**

**postgraduate
students and
engineers who
work on learning-
based services and
hardware
platforms.**

**Evaluation of State-
of-the-Art**

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And
**Hardware
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Fast Cone-Beam**

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and Techniques for

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Schemes
Hardware and
Software
Perspectives**

A study of the
relationship between

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Design Methods
And
creative expression
in the Atari VCS.

The Atari Video
Computer System
dominated the home
video game market
so completely that
"Atari" became the
generic term for a
video game console.
The Atari VCS was

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affordable and offered the flexibility of changeable cartridges. Nearly a thousand of these were created, the most significant of which established new techniques, mechanics, and even entire genres. This

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book offers a detailed and accessible study of this influential video game console from both computational and cultural perspectives. Studies of digital media have rarely investigated platforms—the systems underlying

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computing. This
book (the first in a
series of Platform

Studies) does so,
developing a critical
approach that
examines the
relationship between
platforms and
creative expression.

Nick Montfort and
Ian Bogost discuss

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the Atari VCS itself
and examine in
detail six game
cartridges: Combat,
Adventure, Pac-
Man, Yars' Revenge,
Pitfall!, and Star
Wars: The Empire
Strikes Back. They
describe the
technical constraints
and affordances of

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the system and track
developments in
programming,
gameplay, interface,
and aesthetics.

Adventure, for
example, was the
first game to
represent a virtual
space larger than the
screen (anticipating
the boundless virtual

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spaces of such later games as World of Warcraft and Grand Theft Auto), by allowing the player to walk off one side into another space; and Star Wars: The Empire Strikes Back was an early instance of interaction between

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media properties and
video games.

Montfort and Bogost
show that the Atari
VCS—often
considered merely a
retro fetish object—is
an essential part of
the history of video
games.

This book describes
the current state of

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the art in big-data
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analytics, from a
And
technology and

hardware

architecture

perspective. The

presentation is

designed to be

accessible to a broad

audience, with

general knowledge

of hardware design

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and some interest in
big-data analytics.

Coverage includes
emerging technology
and devices for data-
analytics, circuit
design for data-
analytics, and
architecture and
algorithms to
support data-
analytics. Readers

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will benefit from the realistic context used by the authors, which demonstrates what works, what doesn't work, and what are the fundamental problems, solutions, upcoming challenges and opportunities. Provides a single-

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source reference to
Design Methods
hardware

And
architectures for big-
data analytics;

Covers various
levels of big-data
analytics hardware
design abstraction
and flow, from
device, to circuits
and systems;

Demonstrates how

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non-volatile memory

Design Methods
(NVM) based

And
hardware platforms

can be a viable

solution to existing

challenges in

hardware

architecture for big-

data analytics.

The purpose of this

book is to evaluate

strategies for future

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Architecture
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system design in
multiprocessor
system-on-chip
(MPSoC)

architectures. Both hardware design and integration of new development tools will be discussed.

Novel trends in MPSoC design, combined with

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reconfigurable
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architectures are a
main topic of

concern. The main
emphasis is on
architectures, design-
flow, tool-
development,
applications and
system design.

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who want to build

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their own embedded
computer systems--
installed in

everything from cell
phones to cars to
handheld organizers
to refrigerators-- will
find this book to be
the most in-depth,
practical, and up-to-
date guide on the
market. Designing

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Embedded Hardware
carefully steers

And
between the practical
and philosophical
aspects, so

developers can both
create their own

devices and gadgets

and customize and

extend off-the-shelf

systems. There are

hundreds of books to

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And
Codesign

Computer

Architecture

Architectural

Hardware

If you look around
you will find that all
computer systems,
from your portable
devices to the

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strongest
supercomputers,
are heterogeneous
in nature. The most
obvious
heterogeneity is the
existence of
computing nodes of
different capabilities
(e.g. multicore,
GPUs, FPGAs, ...).
But there are also
other heterogeneity

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factors that exist in
computing systems,
like the memory
system

components,
interconnection, etc.

The main reason for
these different types
of heterogeneity is
to have good
performance with
power efficiency.

Heterogeneous

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computing results in both challenges and opportunities. This book discusses both. It shows that we need to deal with these challenges at all levels of the computing stack: from algorithms all the way to process technology. We discuss the topic of

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heterogeneous
computing from
different angles:

hardware

challenges, current

hardware state-of-

the-art, software

issues, how to make

the best use of the

current

heterogeneous

systems, and what

lies ahead. The aim

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of this book is to
introduce the big
picture of

heterogeneous
computing. Whether
you are a hardware
designer or a
software developer,
you need to know
how the pieces of
the puzzle fit
together. The main
goal is to bring

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researchers and engineers to the forefront of the research frontier in the new era that started a few years ago and is expected to continue for decades. We believe that academics, researchers, practitioners, and

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students will benefit
from this book and
will be prepared to
tackle the big wave
of heterogeneous
computing that is
here to stay.

The computing
world today is in the
middle of a
revolution: mobile
clients and cloud
computing have

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emerged as the dominant paradigms driving programming and hardware innovation today.

The Fifth Edition of Computer Architecture focuses on this dramatic shift, exploring the ways in which software and technology in the

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cloud are accessed
by cell phones,
tablets, laptops, and
other mobile
computing devices.
Each chapter
includes two real-
world examples,
one mobile and one
datacenter, to
illustrate this
revolutionary
change. Updated to

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Architecture
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cover the mobile
computing
revolution

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most important
topics in
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memory hierarchy
and parallelism in all
its forms. Develops
common themes
throughout each
chapter: power,

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performance, cost,
dependability,
protection,
programming
models, and
emerging trends
("What's Next")

Includes three
review appendices
in the printed text.
Additional reference
appendices are
available online.

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Includes updated
Case Studies and
completely new
exercises.