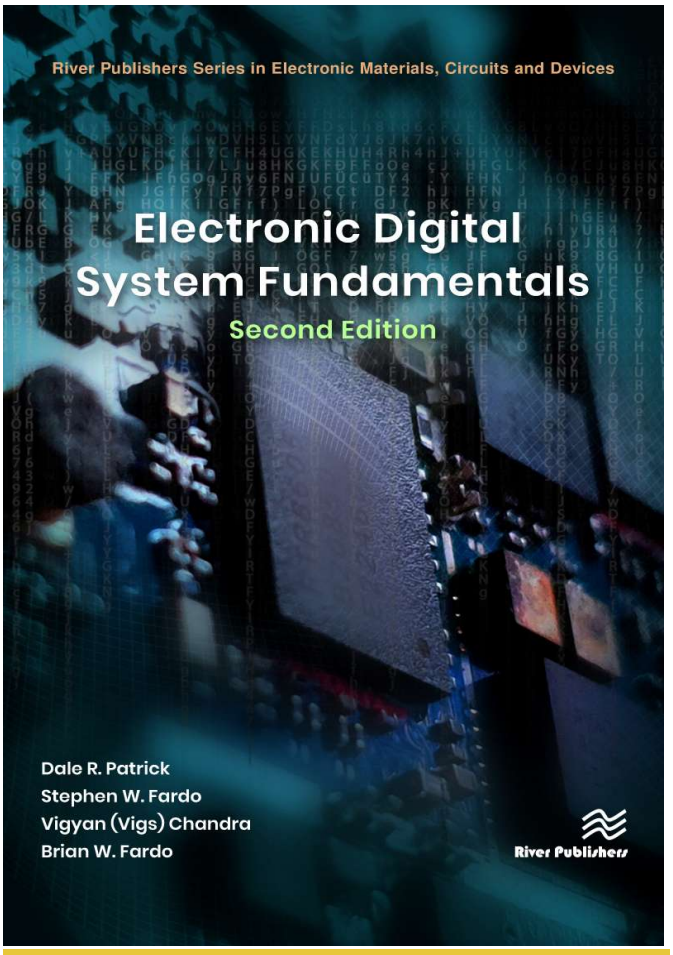
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Electronic Digital System Fundamentals, 2nd Edition

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*Electronic Digital Systems Fundamentals, 2nd Edition*is an introductory text that provides coverage of the various topics in the field of digital electronics. The key concepts presented in this book are discussed using a simplified approach that greatly enhances learning. The use of mathematics is kept to the very minimum and is discussed clearly through applications and illustrations.
Each chapter is organized in a step-by-step progression of concepts and theory. The chapters begin with an introduction, discuss important concepts with the help of numerous illustrations, as well as examples, and conclude with summaries.
The overall *learning objectives* of this book include:

- Describe the characteristics of a *digital electronic system***.**
- Explain the operation of digital electronic *gate circuits.*
- Demonstrate how *gate functions*are achieved.
- Use *binary, octal, and hexadecimal counting systems.*
- Use *Boolean algebra*to define different logic operations.
- Change a *logic diagram* into a *Boolean expression* and a Boolean expression into a *logic diagram.*
- Explain how discrete components are utilized in the construction of *digital integrated circuits.*
- Discuss how *counting, decoding, multiplexing, demultiplexing, and clocks*function with logic devices.
- Change a *truth table*into a logic expression and a logic expression into a *truth table* **.**
- Identify some of the common functions of digital *memory.*
- Explain how *arithmetic operations*are achieved with digital circuitry.
- Describe the operation of *microcontrollers.*



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KEYWORDS:
Analog-To-Digital Conversion (ADC), Gatesâ AND, OR, NAND, NOR, ASCII Code, Asynchronous Clock/Counter, Binary Number, Binary Coded Decimal (BCD) Number, Bit / Byte, Boolean Algebra, Clock, Combinational Logic, Comparator, Counter (up/down), Decoder/Encoder, DeMorgan's Theorem, Digital Logic, Digital-To-Analog Conversion (DAC), Flip Flop, Hexadecimal Number, Inverter, Karnaugh Mapping, Kirchhoff's Laws, Light Emitting Diode (LED), Memory, Multiplexer (MUX), Octal Number, Seven Segment Display, Shift Register, Synchronous Counter, Timing Diagram, Transistor-Transistor Logic (TTL), Truth Table

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