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R. Dubey

Introduction to Embedded System Design Using Field Programmable Gate Arrays

- ▶ Provides the industrial engineer and researcher with a concise but self-contained round-up of the state-of-the-art in programmable logic devices
- ▶ Gives the student a straightforward introduction to the subject of programmable logic devices covering basic and more advanced specialised material

As the uses of digital systems continue to proliferate in quantity and variety, field programmable gate arrays (FPGAs) are taking centre-stage in their design. *Introduction to Embedded System Design Using Field Programmable Gate Arrays* provides a starting point for the use of FPGAs in the design of embedded systems. The text considers a hypothetical robot controller as an embedded application and weaves around it related concepts of FPGA-based digital design. The book details:

- use of FPGA *vis-à-vis* general purpose processor and microcontroller;
- design using Verilog hardware description language;
- digital design synthesis using Verilog and Xilinx® Spartan™ 3 FPGA;
- FPGA-based embedded processors and peripherals;
- overview of serial data communications and signal conditioning using FPGA;
- FPGA-based motor drive controllers; and
- prototyping digital systems using FPGA.

The book is a good introductory text for FPGA-based design. It will be useful for both students and designers who have worked with microprocessors and microcontrollers and now wish to move to design using FPGA. Its end-of-chapter exercises and frequent use of example can be used for teaching or for self-study.



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