DESCRIPTION

An important working resource for engineers and researchers involved in the design, development, and implementation of signal processing systems

The last decade has seen a rapid expansion of the use of field programmable gate arrays (FPGAs) for a wide range of applications beyond traditional digital signal processing (DSP) systems. Written by a team of experts working at the leading edge of FPGA research and development, this second edition of *FPGA-based Implementation of Signal Processing Systems* has been extensively updated and revised to reflect the latest iterations of FPGA theory, applications, and technology. Written from a system-level perspective, it features expert discussions of contemporary methods and tools used in the design, optimization and implementation of DSP systems using programmable FPGA hardware. And it provides a wealth of practical insights—along with illustrative case studies and timely real-world examples—of critical concern to engineers working in the design and development of DSP systems for radio, telecommunications, audio-visual, and security applications, as well as bioinformatics, Big Data applications, and more. Inside you will find up-to-date coverage of:

- FPGA solutions for Big Data Applications, especially as they apply to huge data sets
- The use of ARM processors in FPGAs and the transfer of FPGAs towards heterogeneous computing platforms
- The evolution of High Level Synthesis tools—including new sections on Xilinx's HLS Vivado tool flow and Altera's OpenCL approach
- Developments in Graphical Processing Units (GPUs), which are rapidly replacing more traditional DSP systems
FPGA-based Implementation of Signal Processing Systems, 2nd Edition is an indispensable guide for engineers and researchers involved in the design and development of both traditional and cutting-edge data and signal processing systems. Senior-level electrical and computer engineering graduates studying signal processing or digital signal processing also will find this volume of great interest.

ABOUT THE AUTHOR

Roger Woods is a full professor and Research Director for the Electronics and Computer Engineering Cluster at Queen's University Belfast, Northern Ireland, UK.

John McAllister is an academic at Queen's University Belfast, Northern Ireland, UK.

Gaye Lightbody is a Lecturer within the School of Computing and Mathematics at Ulster University, Northern Ireland, UK.

Ying Yi is currently a Senior Software Engineer at SN Systems, a wholly owned subsidiary of Sony Interactive Entertainment Inc, England, UK.

For additional product details, please visit https://www.wiley.com/en-us