Editorial Review

From the Back Cover

This book is a comprehensive introduction to LabVIEW FPGA™, a package allowing the programming of intelligent digital controllers in field programmable gate arrays (FPGAs) using graphical code. It shows how both potential difficulties with understanding and programming in VHDL and the consequent difficulty and slowness of implementation can be sidestepped.

The text includes a clear theoretical explanation of fuzzy logic (type 1 and type 2) with case studies that implement the theory and systematically demonstrate the implementation process. It goes on to describe basic and advanced levels of programming LabVIEW FPGA and show how implementation of fuzzy-logic control in FPGAs improves system responses.

A complete toolkit for implementing fuzzy controllers in LabVIEW FPGA has been developed with the book so that readers can generate new fuzzy controllers and deploy them immediately. Problems and their solutions allow readers to practice the techniques and to absorb the theoretical ideas as they arise.

Fuzzy Logic Type 1 and Type 2 Based on LabVIEW FPGA™, helps students studying embedded control systems to design and program those controllers more efficiently and to understand the benefits of using fuzzy logic in doing so. Researchers working with FPGAs find the text useful as an introduction to LabVIEW and as a tool helping them design embedded systems.

About the Author

Professor Pedro Ponce studied automation and control engineering. Later, he studied for Master of science and Doctor of science, both degrees with specialization in electrical engineering automatic control option. Professor Pedro Ponce served as a field and design engineer in the Department of Speed Control, as well as projects of industrial development level II engineer. He has specialized in the areas of: automation industrial systems, industrial design, alternative energy, electric and hybrid vehicle systems, electronic power, electrical machines, electrical drives, electronics of power, conventional and digital control, intelligent, expert systems and artificial neural networks. He has been certified in several areas of engineering by companies and universities such as: Siemens, ABB, Rockwell, MIT among others. He has more than 60 publications in journals and conferences of academic reputation, 5 book chapters and 4 books. He was a member of the National System of Researchers and has received numerous national and international awards. He had research stays in Europe and the United States of North America. He has 16 engineering-related patents with two products in the process of technology transfer for the international market.

Dr. Arturo Molina is researcher and titular Professor and Vice-Rector of research and innovation of the Tecnológico de Monterrey. He is a member of the National Research System of Mexico (level II), of the Mexican Academy of Sciences, the Academy of Engineering and of the Advisory Board of IFAC (the International Federation of Automation and Control). He is a consultant for the World Bank and Inter-American Development Bank. He has published 4 books, 43 articles in journals with arbitration, 58 book chapters and more than 60 articles in proceedings of refereed conferences. He holds 12 patents. He has been involved with three technology-based business start-ups: IECOS - Integration Engineering and Construction Systems, SMES - Solutions for Manufacturing Enterprise Systems and ALBIOMAR. Currently, he

participates in a European 7 framework related to the creation of sustainable products and customizable manufacturing (sustainable mass customization) and transfer to Peru of the project creative small- and medium-size enterprises (SMEs) (creation of technologies of information for value-added networks) to support the development of SMEs manufacturing based on information technology funded by the Inter-American Development Bank. He is a member of the editorial board of the journals: Annals Review of Control and International Journal of Computer Integrated Manufacturing. He is a graduate career computer systems engineering and the master of science with specialization in computer science from the Tecnológico de Monterrey, campus Monterrey. He received the degree of Doctor in mechanics of the Budapest University of Technology and Economics, Hungary, and subsequently obtained his PhD in systems of manufacturing from the Department of Mechanical and Manufacturing Engineering of Loughborough University of Technology, England. He did his sabbatical of teaching and research at the Department of Mechanical Engineering of the University of California at Berkeley.

Brian MacCleery helps small to medium businesses bring innovative clean energy products to market. He guides National Instruments strategic R&D and product development for embedded control and measurement with a focus on customer-oriented design tools for advanced control. In his 15-year tenure at NI, MacCleery led market research, product definition, launch and growth of the successful NI CompactRIO platform and product strategy for the popular LabVIEW FPGA tool chain. MacCleery holds bachelor’s and master’s degrees in electrical and computer engineering from Virginia Tech where he now serves on the Industry Advisory Board. He completed his graduate research in power electronics and linear switched reluctance motor drives under the direction of Dr. Krishnan Ramu and led multidisciplinary teams in the development of novel magnetic levitation and propulsion vehicle systems.

Users Review

From reader reviews:

Robert Glass:

Exactly why? Because this Fuzzy Logic Type 1 and Type 2 Based on LabVIEW™ FPGA (Studies in Fuzziness and Soft Computing) is an unordinary book that the inside of the publication waiting for you to snap the idea but latter it will zap you with the secret the item inside. Reading this book adjacent to it was fantastic author who write the book in such wonderful way makes the content interior easier to understand, entertaining way but still convey the meaning thoroughly. So , it is good for you because of not hesitating having this anymore or you going to regret it. This amazing book will give you a lot of gains than the other book have such as help improving your ability and your critical thinking approach. So , still want to delay having that book? If I ended up you I will go to the book store hurriedly.

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Carlos Lauzon:

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