

Core 1 Labview Slide Ni

Many of the initial developments towards the Internet of Things have focused on the combination of Auto-ID and networked infrastructures in business-to-business logistics and product lifecycle applications. However, the Internet of Things is more than a business tool for managing business processes more efficiently and more effectively – it will also enable a more convenient way of life. Since the term Internet of Things first came to attention when the Auto-ID Center launched their initial vision for the EPC network for automatically identifying and tracing the flow of goods within supply-chains, increasing numbers of researchers and practitioners have further developed this vision. The authors in this book provide a research perspective on current and future developments in the Internet of Things. The different chapters cover a broad range of topics from system design aspects and core architectural approaches to end-user participation, business perspectives and applications.

If you already have some experience with LabVIEW and want to apply your skills to control physical objects and make measurements using the Arduino sensor, this book is for you. Prior knowledge of Arduino and LabVIEW is essential to fully understand the projects detailed in this book.

This thoroughly updated and expanded second edition is an authoritative resource on industrial measurement systems and sensors, with particular attention given to temperature, stress, pressure, acceleration, and liquid flow sensors. This edition includes new and expanded chapters on wireless measuring systems and measurement control and diagnostics systems in cars. Moreover, the book introduces new, cost-effective measurement technology utilizing www servers and LAN computer networks - a topic not covered in any other resource. Coverage of updated wireless measurement systems and wireless GSM/LTE interfacing make this book unique, providing in-depth, practical knowledge. Professionals learn how to connect an instrument to a computer or tablet while reducing the time for collecting and processing measurement data. This hands-on reference presents digital temperature sensors, demonstrating how to design a monitoring system with multipoint measurements. From computer-based measuring systems, electrical thermometers and pressure sensors, to conditioners, crate measuring systems, and virtual instruments, this comprehensive title offers engineers the details they need for their work in the field.

Active touch can be described as the control of the position and movement of tactile sensing systems to facilitate information gain. In other words, it is finding out about the world by reaching out and exploring—sensing by ‘touching’ as opposed to ‘being touched’. In this Research Topic (with cross-posting in both Behavioural Neuroscience and Neurorobotics) we welcomed articles from junior researchers on any aspect of active touch. We were especially interested in articles on the behavioral, physiological and neuronal underpinnings of active touch in a range of species (including humans) for submission to Frontiers in Behavioural Neuroscience. We also welcomed articles describing robotic systems with biomimetic or bio-inspired tactile sensing systems for publication in Frontiers in Neurorobotics.

LabVIEW
LabVIEW-Based Hybrid Programming
Bioimage Data Analysis Workflows
A Developer’s Guide to Real World Integration
Xilinx Spartan-3 Version

The LabVIEW software environment from National Instruments is used by engineers and scientists worldwide for a variety of applications. This book examines many of these applications, including modeling, data acquisition, monitoring electrical networks, studying the structural response of buildings to earthquakes, and more.

The leading experts in system change and learning, with their school-based partners around the world, have created this essential companion to their runaway best-seller, Deep Learning: Engage the World Change the World. This hands-on guide provides a roadmap for building capacity in teachers, schools, districts, and systems to design deep learning, measure progress, and assess conditions needed to activate and sustain innovation. Dive Into Deep Learning: Tools for Engagement is rich with resources educators need to construct and drive meaningful deep learning experiences in order to develop the kind of mindset and know-how that is crucial to becoming a problem-solving change agent in our global society. Designed in full color, this easy-to-use guide is loaded with tools, tips, protocols, and real-world examples. It includes:
• A framework for deep learning that provides a pathway to develop the six global competencies needed to flourish in a complex world— character, citizenship, collaboration, communication, creativity, and critical thinking.
• Learning progressions to help educators analyze student work and measure progress.
• Learning design rubrics, templates and examples for incorporating the four elements of learning design: learning partnerships, pedagogical practices, learning environments, and leveraging digital.
• Conditions rubrics, teacher self-assessment tools, and planning guides to help educators build, mobilize, and sustain deep learning in schools and districts. Learn about, improve, and expand your world of learning. Put the joy back into learning for students and adults alike. Dive into deep learning to create learning experiences that give purpose, unleash student potential, and transform not only learning, but life itself.

Frameworks are object-oriented programming environments for vertical application areas. This book is the first to survey this exciting new technology, its concepts, and practical applications. Considered the next step in the evolution of OOP, framework technology is at the center stage of the software strategies of Taligent, IBM, HP, Microsoft, and Apple, among others. In spite of that, frameworks remain poorly understood, and are rarely covered in the literature. This book condenses practical experience and research ideas; explains exotic terminology so that a novice computer professional can quickly absorb it; is easy to read and conceptually crisp; and will be useful to many types of readers, from programmers to technical managers.

The essential introduction to the principles and applications of feedback systems—now fully revised and expanded This textbook covers the mathematics needed to model, analyze, and design feedback systems. Now more user-friendly than ever, this revised and expanded edition of Feedback Systems is a one-volume resource for students and researchers in mathematics and engineering. It has applications across a range of disciplines that utilize feedback in physical, biological, information, and economic systems. Karl Åström and Richard Murray use techniques from physics, computer science, and operations research to introduce control-oriented modeling. They begin with state space tools for analysis and design, including stability of solutions, Lyapunov functions, reachability, state feedback observability, and estimators. The matrix exponential plays a central role in the analysis of linear control systems, allowing a concise development of many of the key concepts for this class of models. Åström and Murray then develop and explain tools in the frequency domain, including transfer functions, Nyquist analysis, PID control, frequency domain design, and robustness. Features a new chapter on design principles and tools, illustrating the types of problems that can be solved using feedback Includes a new chapter on fundamental limits and new material on the Routh-Hurwitz criterion and root locus plots Provides exercises at the end of every chapter Comes with an electronic solutions manual An ideal textbook for undergraduate and graduate students Indispensable for researchers seeking a self-contained resource on control theory

Anion Exchange Membrane Fuel Cells
FPGAs for Software Programmers

The Collective Advancement of Education Through Open Technology, Open Content, and Open Knowledge

Measurement Systems and Sensors, Second Edition

Cancer Research

Painting Islam As the New Enemy

This e-book offers an insightful look into the way today's students think about and use technology in their academic and social lives. It will help institutional leaders help their students to become more successful and satisfied.

This is the eBook version of the print title. The illustrations are in color for this eBook version. Drawing on the experiences of a world-class LabVIEW development organization, The LabVIEW Style Book is the definitive guide to best practices in LabVIEW development. Leading LabVIEW development manager Peter A. Blume presents practical guidelines or “rules” for optimizing every facet of your applications: ease of use, efficiency, readability, simplicity, performance, maintainability, and robustness. Blume explains each style rule thoroughly, presenting realistic examples and illustrations. He even presents “nonconforming” examples that show what not to do—and why not. While the illustrations in the print book are in black and white, you can download full-color versions from the publisher web site for free.

This book provides a practical and accessible understanding of the fundamental principles of virtual instrumentation. It explains how to acquire, analyze and present data using LabVIEW (Laboratory Virtual Instrument Engineering Workbench) as the application development environment. The book introduces the students to the graphical system design model and its different phases of functionality such as design, prototyping and deployment. It explains the basic concepts of graphical programming and highlights the features and techniques used in LabVIEW to create Virtual Instruments (VIs). Using the technique of modular programming, the book teaches how to make a VI as a subVI. Arrays, clusters, structures and strings in LabVIEW are covered in detail. The book also includes coverage of emerging graphical system design technologies for real-world applications. In addition, extensive discussions on data acquisition, image acquisition, motion control and LabVIEW tools are presented. This book is designed for undergraduate and postgraduate students of instrumentation and control engineering, electronics and instrumentation engineering, electrical and electronics engineering, electronics and communication engineering, and computer science and engineering. It will be also useful to engineering students of other disciplines where courses in virtual instrumentation are offered. Key Features : Builds the concept of virtual instrumentation by using clear-cut programming elements. Includes a summary that outlines important learning points and skills taught in the chapter. Offers a number of solved problems to help students gain hands-on experience of problem solving. Provides several chapter-end questions and problems to assist students in reinforcing their knowledge.

Measurement and Instrumentation: Theory and Application, Second Edition, introduces undergraduate engineering students to measurement principles and the range of sensors and instruments used for measuring physical variables. This updated edition provides new coverage of the latest developments in measurement technologies, including smart sensors, intelligent instruments, microsensors, digital recorders, displays, and interfaces, also featuring chapters on data acquisition and signal processing with LabVIEW from Dr. Reza Langari. Written clearly and comprehensively, this text provides students and recently graduated engineers with the knowledge and tools to design and build measurement systems for virtually any engineering application. Provides early coverage of measurement system design to facilitate a better framework for understanding the importance of studying measurement and instrumentation Covers the latest developments in measurement technologies, including smart sensors, intelligent instruments, microsensors, digital recorders, displays, and interfaces Includes significant material on data acquisition and signal processing with LabVIEW Extensive coverage of measurement uncertainty aids students' ability to determine the accuracy of instruments and measurement systems

Sensor Technologies
Healthcare, Wellness and Environmental Applications
Advanced Programming Techniques, Second Edition
Flow Cytometry Protocols
Definitions, Criteria, and Explanatory Notes
100 Power Tips for FPGA Designers

FPGA Prototyping Using Verilog Examples will provide you with a hands-on introduction to Verilog synthesis and FPGA programming through a “learn by doing” approach. By following the clear, easy-to-understand templates for code development and the numerous practical examples, you can quickly develop and simulate a sophisticated digital circuit, realize it on a prototyping device, and verify the operation of its physical implementation. This introductory text that will provide you with a solid foundation, instill confidence with rigorous examples for complex systems and prepare you for future development tasks.

This is a real-time digital signal processing textbook using the latest embedded Blackfin processor Analog Devices, Inc (ADI). 20% of the text is dedicated to general real-time signal processing principles. The remaining text provides an overview of the Blackfin processor, its programming, applications, and hands-on exercises for users. With all the practical examples given to expedite the learning development of Blackfin processors, the textbook doubles as a ready-to-use user’s guide. The book is based on a step-by-step approach in which readers are first introduced to the DSP systems and concepts. Although, basic DSP concepts are introduced to allow easy referencing, readers are recommended to complete a basic course on "Signals and Systems" before attempting to use this book. This is also the first textbook that illustrates graphical programming for embedded processor using the latest LabVIEW Embedded Module for the ADI Blackfin Processors. A solutions manual is available for adopters of the book from the Wiley editorial department.

Sensor Technologies: Healthcare, Wellness and Environmental Applications explores the key aspects of sensor technologies, covering wired, wireless, and discrete sensors for the specific application domains of healthcare, wellness and environmental sensing. It discusses the social, regulatory, and design considerations specific to these domains. The book provides an application-based approach using real-world examples to illustrate the application of sensor technologies in a practical and experiential manner. The book guides the reader from the formulation of the research question, through the design and validation process, to the deployment and management phase of sensor applications. The processes and examples used in the book are primarily based on research carried out by Intel or joint academic research programs. “Sensor Technologies: Healthcare, Wellness and Environmental Applications provides an extensive overview of sensing technologies and their applications in healthcare, wellness, and environmental monitoring. From sensor hardware to system applications and case studies, this book gives readers an in-depth understanding of the technologies and how they can be applied. I would highly recommend it to students or researchers who are interested in wireless sensing technologies and the associated applications.” Dr. Benny Lo Lecturer, The Hamlyn Centre, Imperial College of London “This timely addition to the literature on sensors covers the broad complexity of sensing, sensor types, and the vast range of existing and emerging applications in a very clearly written and accessible manner. It is particularly good at capturing the exciting possibilities that will occur as sensor networks merge with cloud-based ‘big data’ analytics to provide a host of new applications that will impact directly on the individual in ways we cannot fully predict at present. It really brings this home through the use of carefully chosen case studies that bring the overwhelming concept of 'big data' down to the personal level of individual life and health.” Dermot Diamond Director, National Centre for Sensor Research, Principal Investigator, CLARITY Centre for Sensor Web Technologies, Dublin City University "Sensor Technologies: Healthcare, Wellness and Environmental Applications takes the reader on an end-to-end journey of sensor technologies, covering the fundamentals from an engineering perspective, introducing how the data gleaned can be both processed and visualized, in addition to offering exemplar case studies in a number of application domains. It is a must-read for those studying any undergraduate course that involves sensor technologies. It also provides a thorough foundation for those involved in the research and development of applied sensor systems. I highly recommend it to any engineer who wishes to broaden their knowledge in this area!" Chris Nugent Professor of Biomedical Engineering, University of Ulster

In a clear and readable style, Bill Bolton addresses the basic principles of modern instrumentation and control systems, including examples of the latest devices, techniques and applications. Unlike the majority of books in this field, only a minimal prior knowledge of mathematical methods is assumed. The book focuses on providing a comprehensive introduction to the subject, with Laplace presented in a simple and easily accessible form, complimented by an outline of the mathematics that would be required to progress to more advanced levels of study. Taking a highly practical approach, Bill Bolton combines underpinning theory with numerous case studies and applications throughout, to enable the reader to apply the content directly to real-world engineering contexts. Coverage includes smart instrumentation, DAQ, crucial health and safety considerations, and practical issues such as noise reduction, maintenance and testing. An introduction to PLCs and ladder programming is incorporated in the text, as well as new information introducing the various software programmes used for simulation. Problems with a full answer section are also included, to aid the reader's self-assessment and learning, and a companion website (for lecturers only) at http://textbooks.elsevier.com features an Instructor's Manual including multiple choice questions, further assignments with detailed solutions, as well as additional teaching resources. The overall approach of this book makes it an ideal text for all introductory level undergraduate courses in control engineering and instrumentation. It is fully in line with latest syllabus requirements, and also covers, in full, the requirements of the Instrumentation & Control Principles and Control Systems & Automation units of the new Higher National Engineering syllabus from Edexcel. * Assumes minimal prior mathematical knowledge, creating a highly accessible student-centred text * Problems, case studies and applications included throughout, with a full set of answers at the back of the book, to aid student learning, and place theory in real-world engineering contexts * Free online lecturer resources featuring supporting notes, multiple-choice tests, lecturer handouts and further assignments and solutions

Essentials of Paleomagnetism

Programming Arduino with LabVIEW

VIRTUAL INSTRUMENTATION USING LABVIEW

FPGA Prototyping by Verilog Examples

Architecting the Internet of Things

Molecular Biology of the Cell

"This book by Lisa Tauxe and others is a marvelous tool for education and research in Paleomagnetism. Many students in the U.S. and around the world will welcome this publication, which was previously only available via the Internet. Professor Tauxe has performed a service for teaching and research that is utterly unique."—Neil D. Opdyke, University of Florida

This user’s guide does far more than simply outline the ARM Cortex-M3 CPU features; it explains step-by-step how to program and implement the processor in real-world designs. It teaches readers how to utilize the complete and thumb instruction sets in order to obtain the best functionality, efficiency, and reuseability. The author, an ARM engineer who helped develop the core, provides many examples and diagrams that aid understanding. Quick reference appendices make locating specific details a snap! Whole chapters are dedicated to: Debugging using the new CoreSight technology Migrating effectively from the ARM7 The Memory Protection Unit Interfaces, Exceptions,Interrupts ...and much more! The only available guide to programming and using the groundbreaking ARM Cortex-M3 processor Easy-to-understand examples, diagrams, quick reference appendices, full instruction and Thumb-2 instruction sets are included T teaches end users how to start from the ground up with the M3, and how to migrate from the ARM7

Experts discuss the potential for open education tools, resources, and knowledge to transform the economics and ecology of education.

The founding fathers vision of democracy was transformed into a one dollar, one vote democracy. Wall Street and corporations own all the money and thus all the votes. A clash of civilizations is promoted as a scapegoat for capitalisms systemic failure

Learning with LabVIEW

Digital Signal Processing System-Level Design Using LabVIEW

Instrumentation and Control Systems

Educating the Net Generation

Digital Design of Signal Processing Systems

Measurement and Control in Food Processing

Based on the popular Artech House classic, Digital Communication Systems Engineering with Software-Defined Radio, this book provides a practical approach to quickly learning the software-defined radio (SDR) concepts needed for work in the field. This up-to-date volume guides readers on how to quickly prototype wireless designs using SDR for real-world testing and experimentation. This book covers LTE, WLA, and hardware targeting. Readers will gain an understanding of the core concepts behind wireless hardware, such as the radio frequency front-end, analog-to-digital and digital-to-analog converters, as well as various processing technologies. Moreover, this volume includes chapters on timing estimation, matched filtering, frame synchronization message decoding, and source coding. The book also includes HDL code generation and deployment are provided. The book concludes with coverage of the WLAN toolbox with OFDM beacon reception and the LTE toolbox with downlink reception. Multiple case studies are provided throughout the book. Both MATLAB and Simulink source code are included to assist readers with their projects in the field.

This Open Access textbook provides students and researchers in the life sciences with essential practical information on how to quantitatively analyze data images. It refrains from focusing on theory, and instead uses practical examples and step-by step protocols to familiarize readers with the most commonly used image processing and analysis platforms such as ImageJ, MatLab and Python. By using an analysis pipeline by scripting language; these skills are important in order to document reproducible image analysis workflows. The textbook is chiefly intended for advanced undergraduates in the life sciences and biomedicine without a theoretical background in data analysis, as well as for postdocs, staff scientists and faculty members who need to perform regular quantitative analyses of microscopy images pursuant to a Creative Commons license permitting commercial use. All rights not granted by the work’s license are retained by the author or authors.

This thoroughly revised and updated edition of a widely used practical guide to flow cytometry describes in step-by-step detail an array of time proven and cutting-edge techniques much needed in today’s advanced laboratories. These readily reproducible methods deploy emerging flow cytometry technologies in many new applications, especially in the field of stem cells, functional genomics and drug discovery. The book also describes methods for the characterization of stem/progenitor cells by monitoring the efflux of fluorescent dyes and the elucidation of signal transduction pathways using phospho-specific antibodies. There are also techniques for monitoring gene transfer and expression using fluorescent protein technology, high throughput screening for discovery of novel protein interactions, phenotypic and functional genomics, and to highlight but some of the many useful procedures.

Digital Signal Processing System Design combines textual and graphical programming to form a hybrid programming approach, enabling a more effective means of building and analyzing DSP systems. The hybrid programming approach allows the use of previously developed textual programming solutions to be integrated into LabVIEW’s highly interactive and visual environment, providing an easier and more effective way to design and analyze DSP systems.

introduction for engineers and students seeking to develop DSP systems in quick time. Features: The only DSP laboratory book that combines textual and graphical programming 12 lab experiments that incorporate C/MATLAB code blocks into the LabVIEW graphical programming environment via the MathScripting feature Lab experiments covering basic DSP implementation topics including sampling processing Interesting applications using the hybrid programming approach, such as a software-defined radio system, a 4-QAM Modem, and a cochlear implant simulator The only DSP project book that combines textual and graphical programming 12 Lab projects that incorporate MATLAB code blocks into the LabVIEW graphical programming environment via the MathScripting feature Interesting software-defined radio system Theory and Application Transmission Electron Microscopy Measurement and Instrumentation Principles, Materials and Systems Tools for Engagement A Guide for the Penetration Tester

LabVIEW has become one of the preeminent platforms for the development of data acquisition and data analysis programs. LabVIEW : A Developer's Guide to Real World Integration explains how to integrate LabVIEW into real-life applications.Written by experienced LabVIEW developers and engineers, the book describes how LabVIEW has been pivotal in solving This book makes powerful Field Programmable Gate Array (FPGA) and reconfigurable technology accessible to software engineers by covering different state-of-the-art high-level synthesis approaches (e.g., OpenCL and several C-to-gates compilers). It introduces FPGA technology, its programming model, and how various applications can be implemented on FPGAs without going through low-level hardware design phases. Readers will get a realistic sense for problems that are suited for FPGAs and how to implement them from a software designer’s point of view. The authors demonstrate that FPGAs and their programming model reflect the needs of stream processing problems much better than traditional CPU or GPU architectures, making them well-suited for a wide variety of systems, from embedded systems performing sensor processing to large setups for Big Data number crunching. This book serves as an invaluable tool for software designers and FPGA design engineers who are interested in high design productivity through behavioural synthesis, domain-specific compilation, and FPGA overlays. Introduces FPGA technology to software developers by giving an overview of FPGA programming models and design tools, as well as various application examples; Provides a holistic analysis of the topic and enables developers to tackle the architectural needs for Big Data processing with FPGAs; Explains the reasons for the energy efficiency and performance benefits of FPGA processing; Provides a user-oriented approach and a sense for where and how to apply FPGA technology.

This book provides a review of the latest advances in anion exchange membrane fuel cells. Starting with an introduction to the field, it then examines the chemistry and catalysis involved in this energy technology. It also includes an introduction to the mathematical modelling of these fuel cells before discussing the system design and performance of real-world systems. Anion exchange membrane fuel cells are an emerging energy technology that has the potential to overcome many of the obstacles of proton exchange membrane fuel cells in terms of the cost, stability, and durability of materials. The book is an essential reference resource for professionals, researchers, and policymakers around the globe working in academia, industry, and government.

This book presents a selection of papers representing current research on using field programmable gate arrays (FPGAs) for realising image processing algorithms. These papers are reprints of papers selected for a Special Issue of the Journal of Imaging on image processing using FPGAs. A diverse range of topics is covered, including parallel soft processors, memory management, image filters, segmentation, clustering, image analysis, and image compression. Applications include traffic sign recognition for autonomous driving, cell detection for histopathology, and video compression. Collectively, they represent the current state-of-the-art on image processing using FPGAs.

A Practical Approach

A Flexible Environment for Modeling and Daily Laboratory Use

Globalization and Capitalism in Crisis

LabView

Diffraction, Imaging, and Spectrometry

Embedded Signal Processing with the Micro Signal Architecture

The LabVIEW Style BookPearson Education

Foreword. A transformed scientific method. Earth and environment. Health and wellbeing. Scientific infrastructure. Scholarly communication.

The goal of this book is to help students learn to use LabVIEW™ on their own. Learning with LabVIEW is the textbook that accompanies the LabVIEW Student Edition from National Instruments, Inc. This textbook, as well as the LabVIEW software (LabVIEW software is not included with this book), has undergone a significant revision from the previous edition. Learning with LabVIEW teaches basic programming concepts in a graphical environment and relates them to real-world applications in academia and industry. Understanding and using the intuitive and powerful LabVIEW software is easier than ever before. As you read through the book and work through the examples, we hope you will agree that this book is more of a personal tour guide than a software manual.

Digital Design of Signal Processing Systems discusses a spectrum of architectures and methods for effective implementation of algorithms in hardware (HW). Encompassing all facets of the subject this book includes conversion of algorithms from floating-point to fixed-point format, parallel architectures for basic computational blocks, Verilog Hardware Description Language (HDL), SystemVerilog and coding guidelines for synthesis. The book also covers system level design of Multi Processor System on Chip (MPSoC); a consideration of different design methodologies including Network on Chip (NoC) and Kahn Process Network (KPN) based connectivity among processing elements. A special emphasis is placed on implementing streaming applications like a digital communication system in HW. Several novel architectures for implementing commonly used algorithms in signal processing are also revealed. With a comprehensive coverage of topics the book provides an appropriate mix of examples to illustrate the design methodology. Key Features: A practical guide to designing efficient digital systems, covering the complete spectrum of digital design from a digital signal processing perspective Provides a full account of HW building blocks and their architectures, while also elaborating effective use of embedded computational resources such as multipliers, adders and memories in FPGAs Covers a system level architecture using NoC and KPN for streaming applications, giving examples of structuring MATLAB code and its easy mapping in HW for these applications Explains state machine based and Micro-Program architectures with comprehensive case studies for mapping complex applications The techniques and examples discussed in this book are used in the award winning products from the Center for Advanced Research in Engineering (CARE). Software Defined Radio, 10 Gigabit VoIP monitoring system and Digital Surveillance equipment has respectively won APICTA (Asia Pacific Information and Communication Alliance) awards in 2010 for their unique and effective designs.

The Definitive Guide to the ARM Cortex-M3

Image Processing Using FPGAs

Software-Defined Radio for Engineers

Dive Into Deep Learning

Feedback Systems

Digital Signal Processing System Design

Whether seeking deeper knowledge of LabVIEW®’s capabilities or striving to build enhanced VIs, professionals know they will find everything they need in LabVIEW: Advanced Programming Techniques. Now accompanied by LabVIEW 2011, this classic second edition, focusing on LabVIEW 8.0, delves deeply into the classic features that continue to make LabVIEW one of the most popular and widely used graphical programming environments across the engineering community. The authors review the front panel controls, the Standard State Machine template, drivers, the instrument I/O assistant, error handling functions, hyperthreading, and Express VIs. It covers the introduction of the Shared Variables function in LabVIEW 8.0 and explores the LabVIEW project view. The chapter on ActiveX includes discussion of the Microsoft™ .NET® framework and new examples of programming in LabVIEW using .NET. Numerous illustrations and step-by-step explanations provide hands-on guidance. Reviewing LabVIEW 8.0 and accompanied by the latest software, LabVIEW: Advanced Programming Techniques, Second Edition remains an indispensable resource to help programmers take their LabVIEW knowledge to the next level. Visit the CRC website to download accompanying software.

The industrial world consumes millions of kilos of processed food per day. Consistency of taste and texture, standards of raw materials, adherence to health codes, and uniform weights, are established industry specifications. Failure to meet any one of these can result in tons of food destroyed and billions of dollars lost. By the end of the 20th c

This text is a companion volume to Transmission Electron Microscopy: A Textbook for Materials Science by Williams and Carter. The aim is to extend the discussion of certain topics that are either rapidly changing at this time or that would benefit from more detailed discussion than space allowed in the primary text. World-renowned researchers have contributed chapters in their area of expertise, and the editors have carefully prepared these chapters to provide a uniform tone and treatment for this exciting material. The book features an unparalleled collection of color figures showcasing the quality and variety of chemical data that can be obtained from today’s instruments, as well as key pitfalls to avoid. As with the previous TEM text, each chapter contains two sets of questions, one for self assessment and a second more suitable for homework assignments. Throughout the book, the style follows that of Williams & Carter even when the subject matter becomes challenging—the aim is always to make the topic understandable by first-year graduate students and others who are working in the field of Materials Science Topics covered include sources, in-situ experiments, electron diffraction, Digital Micrograph, waves and holography, focal-series reconstruction and direct methods, STEM and tomography, energy-filtered TEM (EFTEM) imaging, and spectrum imaging. The range and depth of material makes this companion volume essential reading for the budding microscopist and a key reference for practicing researchers using these and related techniques.

LabVIEW (Laboratory Virtual Instrumentation Engineering Workbench) developed by National Instruments is a graphical programming environment. Its ease of use allows engineers and students to streamline the creation of code visually, leaving time traditionally spent on debugging for true comprehension of DSP. This book is perfect for practicing engineers, as well as hardware and software technical managers who are familiar with DSP and are involved in system-level design. With this text, authors Khearnavaz and Kim have also provided a valuable resource for students in conventional engineering courses. The integrated lab exercises create an interactive experience which supports development of the hands-on skills essential for learning to navigate the LabVIEW program. Digital Signal Processing System-Level Design Using LabVIEW is a comprehensive tool that will greatly accelerate the DSP learning process. Its thorough examination of LabVIEW leaves no question unanswered. LabVIEW is the program that will demystify DSP and this is the book that will show you how to master it. * A graphical programming approach (LabVIEW) to DSP system-level design * DSP implementation of appropriate components of a LabVIEW designed system * Providing system-level, hands-on experiments for DSP lab or project courses

The Bethesda System for Reporting Cervical Cytology

Data-intensive Scientific Discovery

Active Touch Sensing

The Fourth Paradigm

The LabVIEW Style Book

Object-oriented Application Frameworks

Modern cars are more computerized than ever. Infotainment and navigation systems, Wi-Fi, automatic software updates, and other innovations aim to make driving more convenient. But vehicle technologies haven ’t kept pace with today ’s more hostile security environment, leaving millions vulnerable to attack. The Car Hacker ’s Handbook will give you a deeper understanding of the computer systems and embedded software in modern vehicles. It begins by examining vulnerabilities and providing detailed explanations of communications over the CAN bus and between devices and systems. Then, once you have an understanding of a vehicle ’s communication network, you ’ll learn how to intercept data and perform specific hacks to track vehicles, unlock doors, glitch engines, flood communication, and more. With a focus on low-cost, open source hacking tools such as Metasploit, Wireshark, Kayak, can-utils, and ChipWhisperer, The Car Hacker ’s Handbook will show you how to: -Build an accurate threat model for your vehicle -Reverse engineer the CAN bus to fake engine signals -Exploit vulnerabilities in diagnostic and data-logging systems -Hack the ECU and other firmware and embedded systems -Feed exploits through infotainment and vehicle-to-vehicle communication systems -Override factory settings with performance-tuning techniques -Build physical and virtual test benches to try out exploits safely If you ’re curious about automotive security and have the urge to hack a two-ton computer, make The Car Hacker ’s Handbook your first stop.

This book offers clear, up-to-date guidance on how to report cytologic findings in cervical, vaginal and anal samples in accordance with the 2014 Bethesda System Update. The new edition has been expanded and revised to take into account the advances and experience of the past decade. A new chapter has been added, the terminology and text have been updated, and various terminological and morphologic questions have been clarified. In addition, new images are included that reflect the experience gained with liquid-based cytology since the publication of the last edition in 2004. Among more than 300 images, some represent classic examples of an entity while others illustrate interpretative dilemmas, borderline cytomorphologic features or mimics of epithelial abnormalities. The Bethesda System for Reporting Cervical Cytology, with its user-friendly format, is a “must have” for pathologists, cytopathologists, pathology residents, cytotechnologists, and clinicians.

Opening Up Education

The Car Hacker’s Handbook