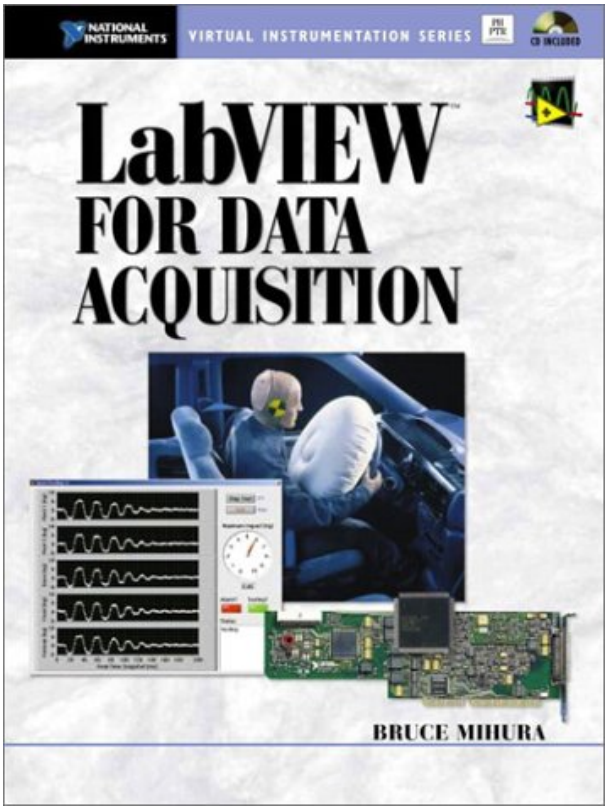
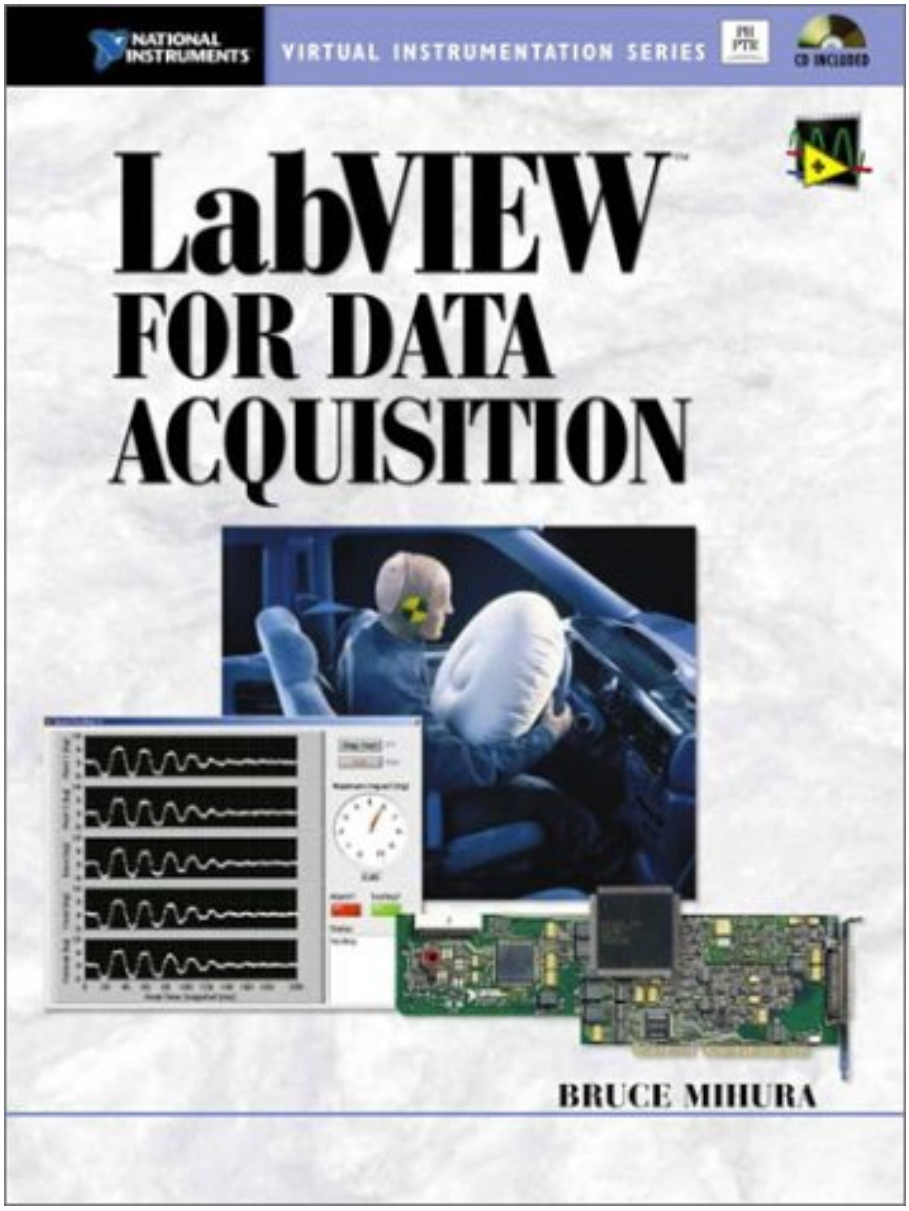
LABVIEW FOR DATA ACQUISITION BY BRUCE MIHURA





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About the Author

BRUCE MIHURA is the owner of LC Technology, an NI certified consultancy specializing in writing custom data acquisition, and control software using LabVIEW, LabWindows/CVI, BridgeVIEW, TestStand, Microsoft Visual C++, and Microsoft Visual Basic. He worked for seven years at National Instruments, spending five years as a LabVIEW developer and nearly two years as sole designer of NI's DAQ Designer configuration software for data acquisition systems. Bruce has taught 32 LabVIEW and/or DAQ classes to date.

Preface

I've been interested in gadgets and computers since grade school, particularly gadgets connected to computers. My first real gadget-to-computer project, at age 16, was an alarm for my car made from an Atari computer with 16 Kbytes of RAM and a photoresistor. I caught no car thieves, but I did catch a cat trying to steal a nap on my car! Six years later, I was more than a little happy to get my first job out of college at NI (National Instruments), where I worked for years as a LabVIEW developer, actually getting paid to connect gadgets to computers! I quickly learned that data acquisition is the professional term for connecting certain types of gadgets to computers, like the photoresistor in my first car alarm.

If you already have an NI data acquisition board with analog input connected to a computer with LabVIEW 6i, and you are dying to watch it work, skip right ahead to start on Chapter 3, up to and including Section 3.1.5, then come back here.

LabVIEW and Data Acquisition

This book is written for people who intend to use National Instruments' LabVIEW (Laboratory Virtual Instrument Engineering Workstation) for data acquisition. LabVIEW has become very popular as the programming language of choice in the context of industrial, scientific, academic, and laboratory

environments. LabVIEW is a graphical programming language in which you build the programs with pictures, not words. Data acquisition involves connecting computers to a wide variety of gadgets via electronic signals; the computers then control these gadgets or read data from these gadgets. The term DAQ will be used throughout the book instead of data acquisition.

In general, any place that "scientific measurements" must be taken is an appropriate place for LabVIEW. Following are a few examples of LabVIEW applications:

- Measuring pressure, temperature, and vibration in an airplane during the course of its flight
- Monitoring the pH of a chemical solution during processing
- Analyzing sound waves in an acoustics laboratory
- Monitoring and recording flow rates of liquids or gasses

To use LabVIEW for any of these four example applications, you need the following four components:

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Good place to start with NI DAQ

By Saint Michael

I am designing a system to take measurements from various transducers (force, load, displacement) through an SCB-68 I/O connector block with a PCI 6014 DAQ card, for a custom mechanical testing device for biological tissues. This book has been an excellent introduction to basic concepts of DAQ using LabVIEW software. Mihura gives a brief introduction to LabVIEW, and it should be sufficient, along with the Help menu, even if you are fairly new to the software but have some programming experience. There is, of course, differences between the device he uses and mine, and the version of LabVIEW is dated, but he still does an excellent job of describing the concepts. However, don't buy this book unless you have LabVIEW and some data acquisition hardware already - I don't believe it will help you in deciding what to buy.0 of 0 people found the following review helpful.

Good introduction

By Peter Minchin

This sure introduced me to LabVIEW but it took until the last chapter to discover issues of timing that made my job undoable. I would have liked an indepth introduction to what LabVIEW can and cannot do.0 of 0 people found the following review helpful.

Five Stars

By Sampath Asiri Bandara

excellent itemSee all 3 customer reviews...

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