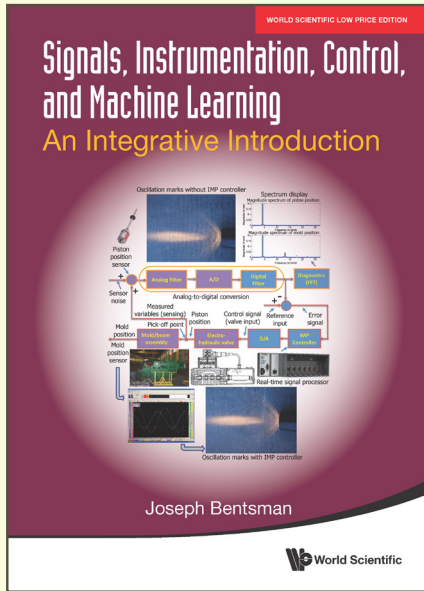


Signals, Instrumentation, Control, and Machine Learning

An Integrative Introduction



By **Joseph Bentsman**
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ABOUT THE BOOK

This book stems from a unique and a highly effective approach to introducing signal processing, instrumentation, diagnostics, filtering, control, system integration, and machine learning.

It presents the interactive industrial grade software testbed of mold oscillator that captures the distortion induced by beam resonance and uses this testbed as a virtual lab to generate input-output data records that permit unravelling complex system behavior, enhancing signal processing, modeling, and simulation background, and testing controller designs.

All topics are presented in a visually rich and mathematically well supported, but not analytically overburdened format. By incorporating software testbed into homework and project assignments, the narrative guides a reader in an easily followed step-by-step fashion towards finding the mold oscillator disturbance removal solution currently used in the actual steel production, while covering the key signal processing, control, system integration, and machine learning concepts.

The presentation is extensively class-tested and refined through the six-year usage of the book material in a required engineering course at the University of Illinois at Urbana-Champaign.

READERSHIP

Researchers, professionals, academics, undergraduate and graduate students in mechanical engineering, electrical & electronic engineering, systems engineering and industrial engineering.

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