

**DIGITAL SIGNAL PROCESSING**  
**Principles, Algorithms, and Applications**  
**Third Edition**

**John G. PROAKIS and Dimitris G. MANOLAKIS**  
**1996, PRENTICE HALL, New Jersey, USA.**

This book presents the fundamentals of discrete-time signals, systems, algorithms and applications for students in electrical engineering or computer science. It covers both time-domain and frequency-domain methods for the analysis of linear, discrete-time systems.

The book offers coverage of classical topics in DSP:

- Discrete-Time Signals and Systems .
- The Z-Transform and Its Application to the Analysis of LTI Systems.
- The Discrete Fourier Transform: Its Properties and Applications
- Efficient Computation of the DFT: Fast Fourier Transform Algorithms

But it also covers such topics as:

- Digital Filter Design.
- Filter Realizations.
- Deconvolution.
- State-Space Methods.
- Spectrum Analysis.

It prepares students with numerous examples, exercises, and experiments emphasizing software implementation of digital signal processing through the use of MATLAB®.

A textbook suitable for advanced undergraduate and graduate courses in discrete systems and digital signal processing.