Machine Learning Methods for Signal, Image and Speech Processing

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Description:
The signal processing (SP) landscape has been enriched by recent advances in artificial intelligence (AI) and machine learning (ML), yielding new tools for signal estimation, classification, prediction, and manipulation. Layered signal representations, nonlinear function approximation and nonlinear signal prediction are now feasible at very large scale in both dimensionality and data size. These are leading to significant performance gains in a variety of long-standing problem domains like speech and Image analysis. As well as providing the ability to construct new classes of nonlinear functions (e.g., fusion, nonlinear filtering).

This book will help academics, researchers, developers, graduate and undergraduate students to comprehend complex SP data across a wide range of topical application areas such as social multimedia data collected from social media networks, medical imaging data, data from Covid tests etc. This book focuses on AI utilization in the speech, image, communications and yirtual reality domains.

Keywords: Signal processing, Machine learning, Deep learning, Image Processing, Speech Processing