

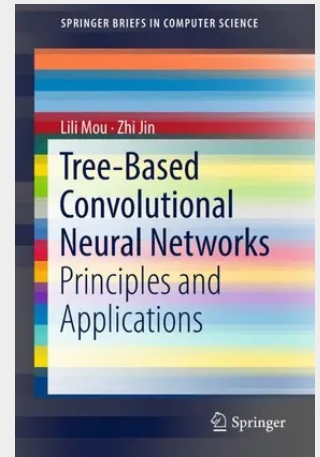
Tree-Based Convolutional Neural Networks

Principles and Applications

This book proposes a novel neural architecture, tree-based convolutional neural networks (TBCNNs), for processing tree-structured data. TBCNNs are related to existing convolutional neural networks (CNNs) and recursive neural networks (RNNs), but they combine the merits of both: thanks to their short propagation path, they are as efficient in learning as CNNs; yet they are also as structure-sensitive as RNNs.

In this book, readers will also find a comprehensive literature review of related work, detailed descriptions of TBCNNs and their variants, and experiments applied to program analysis and natural language processing tasks. It is also an enjoyable read for all those with a general interest in deep learning.

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