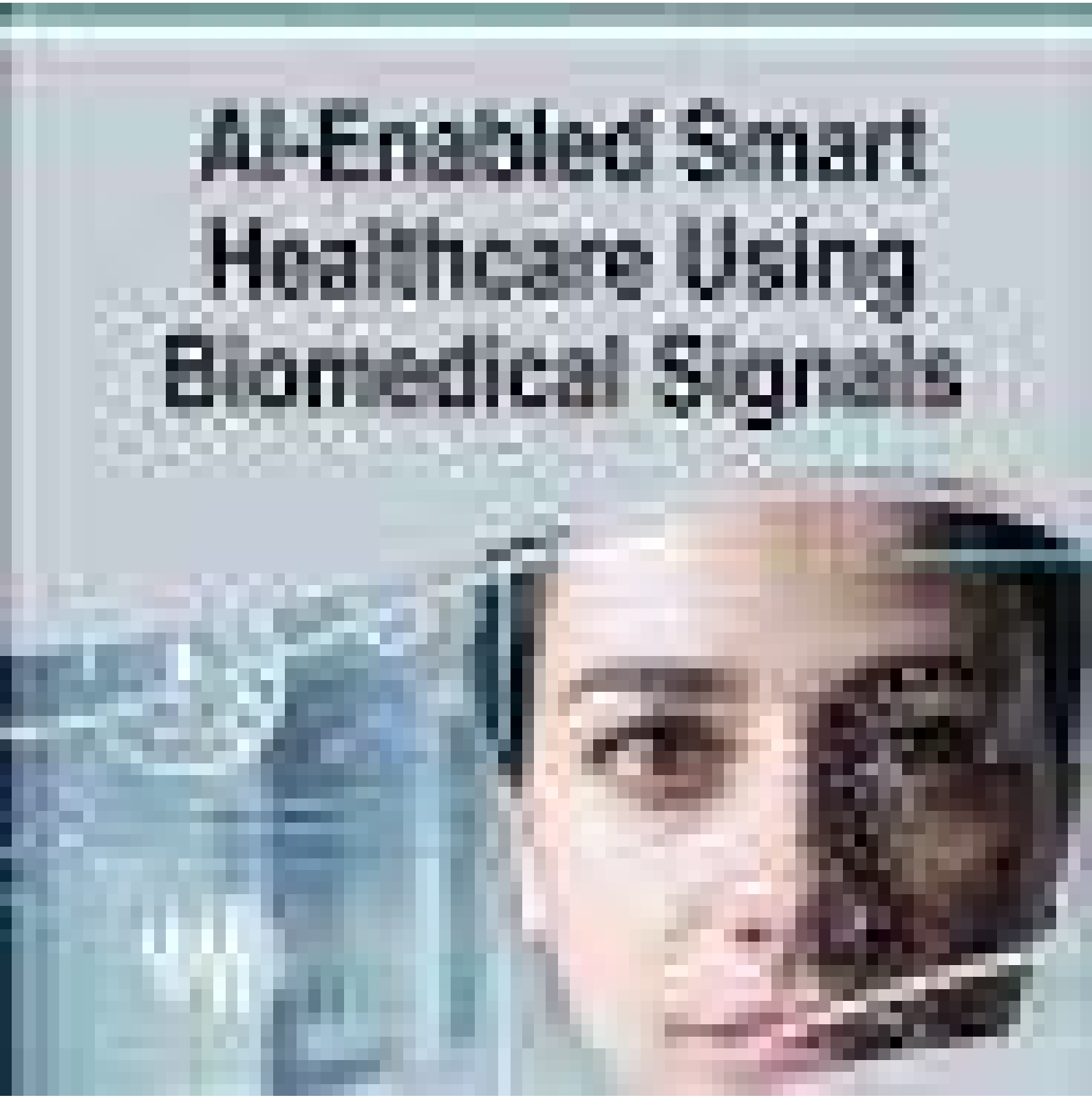
AI-Enabled Smart
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Biomedical Signals

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Chapter 14
Deep Learning–Based Approach to Detect Leukemia, Lymphoma, and Multiple Myeloma in Bone Marrow

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ABSTRACT

Bone marrow cancer is one of the life-threatening diseases which may cause death to many individuals. Leukemia, lymphoma, multiple myeloma, and other cancers that form in the blood-forming stem cells of the bone marrow constitute bone marrow cancer. Early detection can increase the chance for remission. Accurate and rapid segmentation techniques can assist physicians to identify diseases and provide better treatment at the right time. CAD systems can be useful for the early discovery of bone marrow cancer. It features the latest updated algorithm that combines deep learning with MATLAB for health assessment. This can assist in the early detection of leukemia, lymphoma, and multiple myeloma. For denoising histopathological images, new K-SVD and fast non-local mean filter algorithms are employed. For pre-processing, algorithms like multilayer perceptron and novel hybrid histogram-based soft covering rough k-means clustering techniques are employed. Three classifiers, namely R-CNN, ResNet 50, and LSTM, are used to classify, and the performance is compared based on the accuracy.

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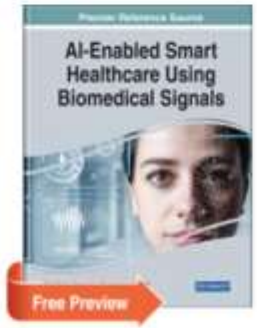

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