Big Data Analytics and Artificial Intelligence in the Healthcare Industry

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Chapter 2
A Review on Artificial Intelligence for Electrocardiogram Signal Analysis

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ABSTRACT

Cardiovascular disease (CVD) is a broad term encompassing a group of heart and blood vessel abnormalities that is the leading cause of death worldwide. The most popular and low-cost diagnostic tool for assessing the heart electrical impulses is an electrocardiogram (ECG). Automation is required to reduce errors and human burden while interpreting ECG signals. In recent years, deep learning shows better performance in ECG classification and has also shown that automated classification of ECG signals can improve accuracy and efficiency. In this chapter, the authors review the research work on ECG signals using deep learning methods like deep belief network (DBNK), convolutional neural network (CNNK), long short-term memory (LSTMY), recurrent neural network (RNNK), and gated recurrent unit (GRUT). In the research articles published between 2017 and 2021, CNNK was found to be the most appropriate technique for feature extraction.