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Advanced Technologies and Societal Change

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Impact of Artificial Intelligence

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Contents

Chapter 1
An Artificial Intelligence-Based Model for the Detection of Heart Disease Using Machine Learning

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Introduction

Today the reason for a vast number of deaths is cardiovascular disease CVDs. Due to strokes and cardiac attacks, there are four out of five deaths, and people below the age of 70 die prematurely because of it, which is one-third of these deaths [1]. There are several reasons for CVD: unbalanced diet, smoking, stress, alcohol, fast foods, and inactive lifestyles. Our present work is based on the concept of artificial intelligence where the outer layer is artificial intelligence the subset if artificial intelligence is machine learning and the subset of machine learning is deep learning. The major focus of artificial intelligence lies in the fact that the task which humans do better can be done with full perfection by machines. A study surveyed in 2016 that over 17 million individuals' deaths are because of cardiovascular disease by the world health organization, which accounts for over 30% of deaths worldwide. The same survey found that the number of mortalities in underprivileged and medium-income countries is more than 70%. The good news is that heart diseases can be prevented by avoiding some critical factors, such as poor diet habits and insufficient physical exercise. Machine learning is a sub-field of artificial intelligence which helps in making accurate predictions that earlier only humans could take with their experience and expertise. The present work is based on a prediction of heart disease using certain parameters. To control their general state of health and avoid sudden cardiac failure, prompt detection and predictive mechanisms are needed for people who are at risk of high cardiovascular disease. Speaking about predicting heart disease, one of the well-known predictions is machine learning. AI showed promising outcomes in healthcare. In the Journal of Clinical Analysis [2] in a 2012 study, ML plays a vital role in automatically detecting intricate patterns in radiology applications, and it helped radiologists make smart decisions. Moreover, in 2015 [3], the researchers

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