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Deep Machine Learning and Neural Networks: An Overview

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ABSTRACT

Deep learning is a technique of machine learning in artificial intelligence area. Deep learning in a refined "machine learning" algorithm that far surpasses a considerable lot of its forerunners in its capacities to perceive syllables and picture. Deep learning is as of now a greatly dynamic examination territory in machine learning and example acknowledgment society. It has increased colossal triumphs in an expansive zone of utilizations, for example, speech recognition, computer vision and natural language processing and numerous industry item. Neural network is used to implement the machine learning or to design intelligent machines. In this paper brief introduction to all machine learning paradigm and application area of deep machine learning and different types of neural networks with applications is discussed.

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1. INTRODUCTION

1.1. Machine Learning

Learning is a process in which association of events with consequences is done. Thus basically learning is a way to substantiate the cause and effect principle. The science of designing the intelligent machine is referred to as machine learning and the tool used to design such intelligent machine is neural networks. Neural network may considered as black-box which gives some desired output for the given input. It is achieved through process called training.

In contrast to most conventional learning methods, which are considered using shallow-structured learning architectures, deep learning refers to machine learning techniques that use supervised and/or unsupervised strategies to automatically learn hierarchical representations in deep architectures for classification. Inspired by biological observations on human brain mechanisms for processing of natural signals, deep learning has attracted much attention from the academic community in recent years due to its state-of-the-art performance in many research domains such as speech recognition, collaborative filtering, and computer vision. Deep learning has additionally been effectively connected in industry items that exploit the expansive volume of advanced information. Companies like Google, Apple, and Facebook, who collect and analyse massive amounts of data on a daily basis, have been aggressively pushing forward deep learning related projects. For example, Apple's Siri, the virtual personal assistant in iPhones, offers a wide variety of services including weather reports, sport news, answers to user's questions, and reminders etc. by utilizing deep learning and more and more data collected by Apple services. Google applies deep learning algorithms to massive chunks of messy data obtained from the Internet for Google's translator.