

English Proficiency Exam

Universidade Federal de Alfenas

Programa de Pós-graduação em Estatística Aplicada e Biometria

* Indica uma pergunta obrigatória

Instructions

Read the text carefully and answer the questions. Don't forget, you must answer only in Portuguese! Answers in English will not be considered.

1. Full name *

2. E-mail *

A review of machine learning and deep learning applications

Shinde, Pramila P., and Seema Shah. "A review of machine learning and deep learning applications." 2018 Fourth international conference on computing communication control and automation (ICCUBE). IEEE, 2018.

Abstract—Machine learning is one of the fields in the modern computing world. A plenty of research has been undertaken to make machines intelligent. Learning is a natural human behavior which has been made an essential aspect of the machines as well. There are various techniques devised for the same. Traditional machine learning algorithms have been applied in many application areas. Researchers have put many efforts to improve the accuracy of that machine learning algorithms. Another dimension was given thought which leads to deep learning concept. Deep learning is a subset of machine learning. So far few applications of deep learning have been explored. This is definitely going to cater to solving issues in several new application domains, sub-domains using deep learning. A review of these past and future application domains, sub-domains, and applications of machine learning and deep learning are illustrated in this paper.

Keywords—Machine Learning, Deep Learning, Frameworks.

3. 1. From the abstract, what you say that means *machine learning*?

4. 2. From the abstract, what you say that means *deep learning*?

5. 3. One keyword of this paper is *frameworks*. In the context of this paper, how would you translate *frameworks*?

I. INTRODUCTION

Artificial Intelligence (AI) refers to making machines as intelligent as the human brain. In Computer Science, AI means the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its likelihood of with success achieving its goals. Informally, the term "artificial intelligence" is applied when a machine is able to perform functions that humans associate with other human minds, such as "learning" and "problem solving". Learning is a vital aspect of machines. Therefore, machine learning is a subfield of AI. Computer Scientists have taken efforts since the 1950s in the domain of machine learning. Since the last few decades tremendous efforts are made in the advancements of machine learning. This leads to higher expectations from machines. Deep learning is an attempt in this direction. It is a subset of machine learning. As the work in learning is put forward in many new areas and applicability of newer areas is always an undergoing task in the research community.

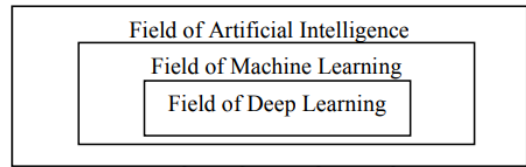


Fig.1. depicts the earlier research from where deep learning has originated. Deep learning refers to deep artificial neural networks. Deep is the term which refers to a number of layers in a neural network. The deep network has more than one hidden layer whereas a shallow network has only one.

This paper presents a review of applications of machine learning and deep learning. Section II gives Overview of Machine Learning, Section III describes Machine Learning Applications, Section IV highlights Overview of Deep Learning, Section V briefs Deep Learning Applications and Section VI gives Inferences from the review of Applications of Machine Learning and Deep Learning which is followed by Conclusion.

6. 4. From the introduction, define Artificial Intelligence.

7. 5. From the introduction, define Machine Learning.

8. 6. What are the two aspects of human mind, mentioned in the Introduction as referred to machine learning?

9. 7. What does Figure 1 describe?

10. 8. What does this paper present?

II. OVERVIEW OF MACHINE LEARNING

An overview of how machine learning is evolved is highlighted in this section. Intelligent Machinery was the term authored in the 1950s which acquainted the world with another area wherein machines were attempting to become intelligent as we human beings are. This was the initial move towards wandering into new era. In 1948, Turing and Champernowne found 'paper and pencil' chess. It was the world's first chess playing computer program. The program was formulated with pencil and paper, the estimations being performed physically by Turing and Champernowne themselves – each move would take them thirty minutes or more to ascertain. Dietrich Prinz composed program mate-in-two moves chess machine in 1951. The program presented a piece-list in conjunction with an installed post box board portrayal, yet 10*10, since a knight move was made out of two single step moves. By having a ply-indexed array of piece-list-index, direction- and step-counter move generation was done. Christopher Strachey programs first Draughts (Checkers) algorithm in 1952. The program could play an entire session of Draughts at a reasonable speed [1].

11. 9. When did intelligent machinery start being created?

12. 10. What was the game used by the first algorithms of machine learning?
