

Machine learning: tasks, modern day applications and challenges

ABSTRACT

During the last decade, we have witnessed significant development in artificial intelligence (AI) capabilities and its application areas such as healthcare, self-driving cars, eLearning, military, smart cities, industry, etc. Machine learning algorithms learned from available data. Further, this learning laid the foundation to develop AI for the various systems around us. These machine learning algorithms are a collection of complex mathematical models and human intuitions. Over the last decade, we are able to develop algorithms which can produce better accuracies so better decision making can be achieved. Particularly in today's scenarios, deep learning algorithms are breaking all records. These algorithms mimic the neural system of humans and successfully breaking several barriers in image classification, NLP, and robotics, etc. The contributions of this paper are in three folds. Firstly, we reviewed current state-of-the-art research and development work in the area of machine learning. Secondly, we identified a machine learning task and reviewed them. Thirdly, we related these developments with how they are affecting human societies with respect to their applications such as image classification, autonomous driving, and data fusion. This paper provides reader with the direction of what has been done and what can be done in machine learning to exploit open problems in this area.

Keyword: Artificial intelligence; Machine learning; Deep learning; Data fusion; Smart cities