

Chapter 68

Machine Learning Techniques Application: Social Media, Agriculture, and Scheduling in Distributed Systems

Karthikeyan P.

Presidency University Bangalore, India

Karunakaran Velswamy

*Karunya Institute of Technology and Sciences,
India*

Pon Harshavardhanan

VIT Bhopal, India

Rajagopal R.

*Vel Tech Multi Tech Dr. Rangarajan Dr.
Sakunthala Engineering College, India*

JeyaKrishnan V.

Saintgits College of Engineering, India

Velliangiri S.

CMR Institute of Technology, India

ABSTRACT

Machine learning is the part of artificial intelligence that makes machines learn without being expressly programmed. Machine learning application built the modern world. Machine learning techniques are mainly classified into three techniques: supervised, unsupervised, and semi-supervised. Machine learning is an interdisciplinary field, which can be joined in different areas including science, business, and research. Supervised techniques are applied in agriculture, email spam, malware filtering, online fraud detection, optical character recognition, natural language processing, and face detection. Unsupervised techniques are applied in market segmentation and sentiment analysis and anomaly detection. Deep learning is being utilized in sound, image, video, time series, and text. This chapter covers applications of various machine learning techniques, social media, agriculture, and task scheduling in a distributed system.

DOI: 10.4018/978-1-7998-5339-8.ch068

INTRODUCTION

Machine learning (ML) is a discipline of information technology that gives machines the ability to “learn” with data, without being expressly programmed, this means in other words that these programs change their behavior by learning from data. Machine learning is the future of computing. From home automation to landing a rover on a comet, everything is digitalized, and these are made possible only because of intelligent systems that use Machine learning and their associated applications (Wernick, Yang, Brankov, Yourganov, & Strother, 2010). With advances in ML, probabilistic standards and deep neural network machine can now promptly convert spoken conversation and written, identify and precisely caption photos, recognize faces and be a personal assistant for the consumers. The latest inventions in Artificial Intelligence (AI) are the result of core advances in AI, including improvements in ML, and perception, on a stage set by improvements in multiple fields of computer science. Processing power has raised and has compared to cloud computing. For the meantime, the extension of the web has produced chances to collect, store and share massive volumes of data (Hatcher & Yu, 2018). There also have been prominent strides in probabilistic modeling, in which processing system examine probabilities and make the best solution or suggestion, and ML in which a computer gets better at something based on the data that it collects. This process proves that the future of machine learning is heading in many ways making the lives of millions of people more comfortable, productive, and effective. Figure 1 depicts the Application of various Machine Learning Techniques.

Supervised Learning

Supervised learning algorithm train the model based on labeled training data. Supervised learning algorithms can be categorized as two primary classes: regression algorithms forecast the continuous value or classification algorithms forecast the discrete value. Regression: Regression learning algorithm try to obtain the best fit function for the training data. Classification: In contrast with regression machine learning algorithm that attempts to locate the best fit capacity for the training information Classification algorithms are divided into four types such as logistic regression, artificial neural networks(ANN), support vector machines(SVM), and decision trees. Logistic Regression: It is used as a binary classifier where the output belongs to true or false.

Decision Trees: This can categorize an input data, decision trees sort the input data down the tree from the root node to a particular leaf node. Support Vector Machines: Support Vector Machine (SVM) is principally a more tasteful strategy that performs arrangement assignments by building hyperplanes in a multidimensional space. Artificial Neural Networks: Artificial neural networks (ANN) used whenever we have rich labeled training data with numerous. ANN tries to impersonator the way our brain mechanism as it has been confirmed that the brain uses one “learning algorithm” for all its different purposes (Garcia-Ceja et al., 2018) . The real world application of supervised machine learning is listed below.

Spam Detection: Incoming Electronic mail (E-mail) in an inbox, recognize those E-mail messages that are spam and those that are most certainly not. Possessing a system of this issue will enable software to transmit non-spam messages in the inbox and leave spam messages to a spam envelope (Cohen, Nissim, & Elovici, 2018).

20 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/machine-learning-techniques-application/275345

Related Content

From Cloud Computing to Fog Computing: Platforms for the Internet of Things (IoT)

Sanjay P. Ahuja and Niharika Deval (2021). *Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing* (pp. 999-1010).

www.irma-international.org/chapter/from-cloud-computing-to-fog-computing/275324

Personalized Recommendation Mechanism Based on Collaborative Filtering in Cloud Computing Environment

Xinling Tang, Hongyan Xu, Yonghong Tan and Yanjun Gong (2021). *Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing* (pp. 751-769).

www.irma-international.org/chapter/personalized-recommendation-mechanism-based-on-collaborative-filtering-in-cloud-computing-environment/275312

The Optimal Checkpoint Interval for the Long-Running Application

Yongning Zhai and Weiwei Li (2021). *Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing* (pp. 2590-2599).

www.irma-international.org/chapter/the-optimal-checkpoint-interval-for-the-long-running-application/275406

Resource Management in Sensor Cloud

Prashant Sangulagi and Ashok V. Sutagundar (2021). *Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing* (pp. 1112-1129).

www.irma-international.org/chapter/resource-management-in-sensor-cloud/275329

Investigation Into Cloud Computing Adoption Within the Hedge Fund Industry

Thomas Cole, Amit Kumar Bhardwaj, Lalit Garg and Divya Prakash Shrivastava (2021). *Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing* (pp. 1615-1641).

www.irma-international.org/chapter/investigation-into-cloud-computing-adoption-within-the-hedge-fund-industry/275357