# Deep neural network: Recognize Data Management of Artificial Intelligence in Retail

**D.Prabha, P.Manivannan, K.Balasubramanian**

***Abstract - Deep neural networks with the artificial intelligence on Machine Learning (ML) algorithms constitute the best design specifically to deal with vast amount of data for retail business. The limited research approach is referred towards reducing memory consumption on integrating ML algorithms on data management system. This paper proposed combining data management and deep neural networks, ideas to build systems, which vast amount data can share in the database system. Therefore, ML algorithm has a pattern with multi-hidden layer that can use to synthesis different decision within a minimum processing. Finally, system precede and follow a NoSQL layers of a model employs in-memory database compression techniques and executes data management challenges with large datasets successfully.***

***Index Terms - artificial intelligence, data management system, deep neural networks, machine learning***

## I. INTRODUCTION

In today's retail business, customers already tuned into to online, systems have to ready to extract high bytes of data every day. Memory management is an important challenge to the database community that they require current generation of in-memory databases [1]. So, more organizations are spinning to database-as-a-service platforms in search of faster, more scalable and as to deployment on lower costs. This paper refers the Artificial Intelligence (AI) analysis has become a practical application for making sense of that database. However, internet purchase is constantly growing in retail which allows companies to get large unstructured data information. Unfortunately, the volume of data had required to categorize database storage that can take a step deeper. Nowadays, Deep Neural Networks (DNN's) generates relating to meaning in logic insights that lead directly to business execution, more than ever, customers expect their experience with which reads all text as one unit.

A. Why to create deep neural networks

Deep learning is a type of machine learning that uses Neural Networks (NN) for accessing the data of the process to perform human-like algorithm. They actually change the underlying algorithm as deep neural networks. It is approached to create the multilayered representation with natural language processing apply ML techniques. Apply this similar technique in a retail industry, provides the best support on result-driven data storage management.

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AI can support machine learning in the data management processes, keeps vast data gathering and to manage optimal dataset storage. However, machine learning is a subset of artificial intelligence that they created with an analytic algorithm model to adapt the data as documented type database. Mostly, the retail business uses of online system from the social media or mobile apps, the data are of unstructured or semi-structured such as images and text. This variety of are challenging capabilities to a relational database table use of Hadoop. This paper had reconciled the database type (NoSQL- documented) with an automatic conversion and to remove the store volume of data complexity.

## II. PROGRESSIVELY INTELLIGENT WORKS

This paper focused on the multi-layer dataset integration until each group such as customer data, product data, territory, etc. needs to integrate and exchange real-time data and streams of events across the business database. Herewith, ML is used as a new way to program to deal with structures as well as unstructured data. As results, this simplifies the problem of real-time data event streaming, thus enabling Deep Neural Networks (DNN) analysis into the organization database to quickly begin to recognize. Data Science is all about identifying the

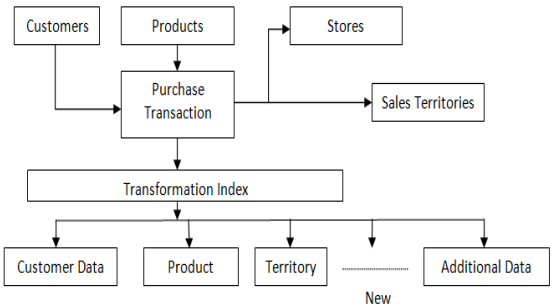


**Fig 1. Machine Learning Analytical Model Based On Data Source**

problems and exploring the data, modeling the data using different kinds of algorithms, and finally visualizing the results-driven database obtained to draw meaningful insights from that data. NoSQL documented type, it's really simpler and more familiar interfaces and paradigms rather than relational database that works to continue as long as the retail business requirements. The web-based and smart phone users, individuals find what they are needs for quicker than any time in recent era. As results, different sources of data being produced a wide variety of datasets, which made be

stored in pre-defined formats.

A. Techniques for Managing Data and Algorithm

Currently, the most effective approach for improving the training speed of deep learning models is to use [1]. Which access all types of input open source data needed deeper insights being embedded with analytical models and machine learning algorithms as shown in figure 1. It provides an open source data into the metadata that accompanies the dataset. Mostly, the output metadata will create family information group and savings on multiple levels. A formal conceptual algorithm is needed to serves as the foundation for the ML model development process.
The Gartner's report said that on a 2018 survey conducted by the consulting firm on machine learning models are embedded in business processes and experienced analytics of data science functionality applications can be achieved. So, accessing all types of input source of data needed deeper insights being embedded with analytical models and machine learning algorithms. This intelligence capability stores information as a NoSQL database that they receive the relevant information in just seconds.

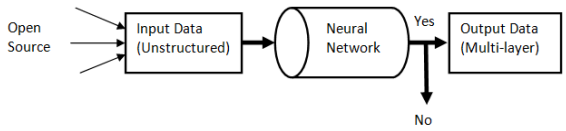


**Fig 2. Overview of DNN model**

## III. DEEP NEURAL NETWORKS

It is ease to develop of ML algorithms, especially for deep neural networks [2] for collecting the massive amount of data and feed in obtaining of a complete document or paragraph output. ML algorithms allow of unstructured text data and can storage in the real-time database with an efficient and cost-effective system. Using a DNN analysis in the company's system may reduce errors and improve data consistency where Convolution Neural Networks (CNN) does not solve the same task. The DNN improve its performance on the training kept in any way. Now, it can learn features that help it do well on the training and validation data. In addition, it uses a back propagation in order to adjust errors. Which are extracting the hidden pattern (streaming) within data from data scientist, data mining and data analysis?

A. DNN with Data Training Approaches

The DNN analysis is usually modeled on machine learning algorithms where input are fed with a text (like social media) and returns the corresponding output category in document type. The multi-layer neural network functions and activating the complexity level output, which has several linear mappings of the input vector. The paper proposed ML algorithm to train deep networks, doing away with error propagation with the really small part of things like data collection, model extraction, data verification, analysis for an AI storage system. However, this requires a common shifting from a ML model with extract, transform and load (ETL) that they can identify and resolve any issues of a network data performance. Also, it collects a massive amount of data and analyzes them for its retail business needs. However, deep networks go through its input and uses what it ML algorithm to create a pre-defined model at an acceptable level of output as shown in figure 2. However, the number of customer datasets multi-layers through which data must pass is what inspired into documentation deep.

B. Training Deep Neural Model

Training DNN use back-propagation error which sets a limitation that can be effectively fit into the training data. Actually, many retail enterprises are using big data which have large amounts of unstructured data. However, input data (unstructured or semi-structured) use ML algorithms (training) first and then starting to use back-propagation getting near the output layers. Normally, the data are part of the process, the data sets that are used for training, generally, are larger than the data sets that are actually run the model. However, training process and machine learning algorithm has associated with the input (text format) to the corresponding dataset output referred as NoSQL database (similar documented type). This is actually looking at a volume of data, have multi-layer data structures, customer with an ID in a one snapshot on the same system. The training data snapshot and the learning need to include for data management is able to track that has builds on machine learning systems.

C. The perfect data processing

Machine learning heavily on data management system requires collecting the customer information, to make a decision on to identify sales. The output of the machine learning has been processed of analyzed generally the data science that had evaluated to access the volume of data. Mainly, the data depends to build the data set on the efficient way while data management and data storage system are explored ML platform with highly flexible and scalable. The information data in a DNN model are mapped with the different dataset categories on a pre-defined dictionary. Means, a retail business have a number of different customers who fit this same pattern. The category based on which region they fall into "yes" or "no" as shown in figure 2. The building of the dataset will be classified for a diversity of data in increasing the column and the process is repeated multiple times. The set of data being cross-verified to prevent and can be fitted in the same dataset, failures may into different set. Inputs were predicted correctly as belonging to a given category. This paper proposed that most of the data from unstructured are structured in a pre-defined manner. Most had come as open source data, from social media and smart phone. However, the Machine learning applications and analysis are made with "yes" or "no" obtained with NoSQL documented level analysis

## IV. DISCUSSION

Further, training large neural networks, the underlying algorithms are applicable to any gradient-based machine learning algorithm [5]. Data is an increasing concern, and machine learning techniques enable by making popular use of Python for DNN training [5] which will be provided a compatible in large datasets

[12]. Therefore, our primary design constraint by minimizing data code [15]. The biggest impact of DNN has provided for real-time data streaming success, it is initiated with multi-layered dataset that is the ultimate determining factor to have result-driven and successful result database. The retail enterprise software is intended to consider an active pipeline that moves the data to quicker ingest data into database systems to process and analyze in real-time - such as DNN has designed to support. The new learning and AI techniques uncover bottlenecks in the exciting database storage are being updated with additional data streams. The idea of the paper is to have the term of data management to create complex NoSQL documented database is often in machine learning, actually built into the system.

## V. CONCLUSION

In this paper, we have discussed data management and deep learning or deep neural networks. DNN are powerful techniques for optimizing data management that are being used for retailer. We bring this idea to AI in retail database construction for general deep neural networks. Moreover, the main advantage of AI and ML is in easy implementation and low cost of the introduction in the existing database management. We have discussed some ideas of the DNN requires expertise and contributions of machine learning, and AI along with data scientists, data mining and data analytical confirm a proof of retail business concept. We also showed that the input data collected from open source like social media and smart phone is the computation of memory, a simple recommendation is that the model are modified by continual exposure the training data in before to the storage database system.

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