

# Machine Learning

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**Abstract**—This paper demonstrates the capabilities of machine learning. It also defines a new machine learning problems to which the algorithms cannot be applied on machine. It is the technology where a machine can learn on its own. In our future, machine learning plays a vital role in the field of robotics and it helps in taking optimized decisions and it increases the efficiency of machine. Machine learning explores the study and construction of algorithm that can learn from and make predictions on data. There are some tasks of machine learning is supervised, unsupervised and reinforcement learning. In our science life, scientists research the technology, first came is deep learning after this, the machine learning came and now artificial intelligence developed.

As a new breed of software that is able to learn without being explicitly programmed, machine learning and deep learning can access, analyze and find patterns in the big data in a way that is beyond human capabilities.

Machine learning has recently gained fresh momentum because processing power and storage are now more affordable than ever, and the detonation of big data from various sources such as text, images and Internet of things (IOT) devices is making it easier for machine to train and learn.

## 1. INTRODUCTION

These Allowing computers to model our world well enough to exhibit what we call intelligence. To achieve this, a large quantity of data or information about our world should be stored in the computer. When user ask the computer about the world or any info, the computer can search or give instant answer to the user. What computer do is, it interprets the data and it gives output to the user.

If I take example of image recognition, we will able to train models with take pixel of an image and from those pixels learn high level features. This try to learn if you see a cake and you see a kid it's may be a birthday party and if you see a cake and lots of kids it's very like a birthday party that essentially teaching the machine to do the perception that we humans are so natural and good at.

Instead of working manually, we are providing the different algorithm for different machine to adapt the environment and based on their understanding the machine will take particular decision. This will decrease the number of programming concepts and also machine will become independent. It will save the time of humans and energy.

This research paper accentuates on different types of machine learning algorithm and their most efficient use to complete task in more upsurge form.

In a nutshell, AI is the broader concept of machine that can act intelligently. We gave data to hardware, from that the machine learns itself.

The deep learning is known as cognitive computing, is a form of advanced machine learning. It uses multilayered neural networks to stimulate human thought processes.

The real world is actually messy, for logical world is not the way to solve real world problem. So, Machine Learning is the way to solve the problems on time and it is much faster and wiser than human.

## 2. APPLICATIONS

**Animal Prevention-** Animals sometimes get damage our house, our lawn and make mess. Wild animals can also do major damage to our lawn by eating up our fruits and vegetables, digging holes that can interface with our utility lines or even stripping all the bark off of our trees. Many animals are just looking for their next meal which is unfortunately going to come from your home which is going to create a big mess. They will get into our garbage bins, eat our entire pet's food and where animal eat they will also go to the bathroom there. So, with the help to this technology, we can train our model.

If somebody used to have a cat going around our house on the time so, our train model is to identify whenever the cat was there and it will turn on the sprinkler on to get the cat away.

**Fridge Cam -** The camera employs custom food recognition software that can reportedly track what's in your fridge, suggest recipes, and save you from wasting food. You just have to scan the food's barcode on the Fridge Cam's app, which connects over Wi-Fi, whenever you put something inside. The fridge then will either already know how long that food item can last before going bad, or will automatically identify the expiry date. For foods without barcodes, like fruit and vegetables, the train model will identify by scanning the image of the fruit or vegetable and it will show on the screen

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that the material is expiry or not. The app will let you know when that food is getting close to expiring and notify you.

### **3. ACKNOWLEDGEMENTS**

This research was supported by Mr Anirudh Sharma (Head of Research and Development). We thank our Mentor who provided insight that greatly assisted the research. We thank Mr Zeeshan for assistance with Technically for comments that greatly improved the manuscript. We are grateful to our family who provided us through moral and emotional support in our life. A special gratitude to our other family members and friends who have supported us along the way.

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