Broadcast prologue from editor's lettering bench

Deep learning Architectures is a class of Machine Learning Algorithms

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The human brain is consisted of billions of neurons which are unified by a mixture of synapses. If "enough" synaptic inputs to the neuron fires, then the neuron will also shoot. This progression is known as "accepted wisdom". To replicate this procedure of philosophy on computers, we need to have a combination of machine learning and neural networks. This wide-ranging know-how of putting artificial brain into machine is in veracity fascinating, we humans for the reason that of our imaginative brain power has this natural instincts to go ahead of what seems not viable to craft tools and proficiency which becomes an additional room to our everyday verve, which can make decisions on our behalf and make our living tremendous well-organized. It is with this persevere on to make humans super productive the new paradigm shift have been started putting **artificial intelligence** to the computer machines and now time has come to go long mode to build machines which can practically believe like human brains.

Source: https://towardsdatascience.com/deep-learning-with-tensorflow-part-1-b19ce7803428
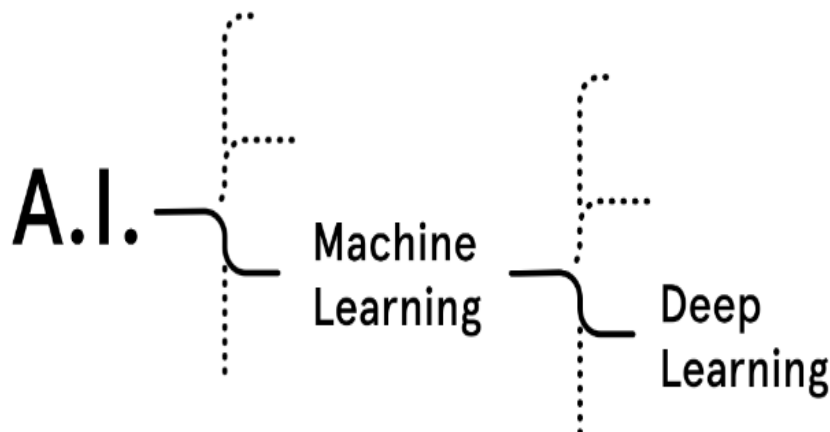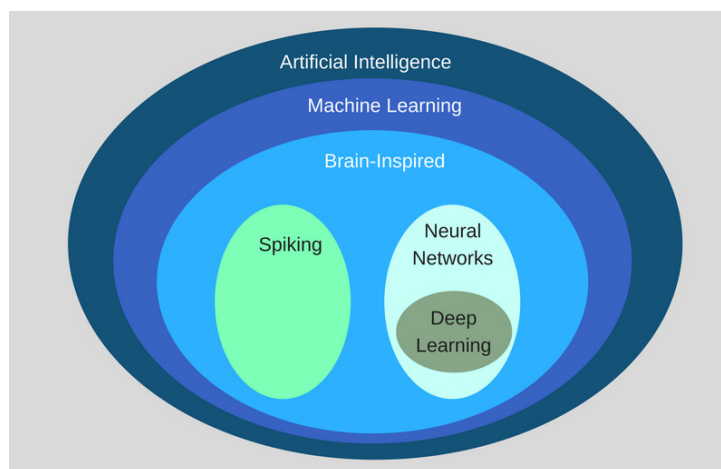

Figure: Relationship between Artificial Intelligence, Machine Learning and Deep Learning

From the above figure it can be affirmed that Artificial Intelligence is define as human intelligence that is exhibited by machines and Machine Learning (MI) is an approach to accomplish Artificial Intelligence. Machine learning is a notion in

which algorithms parse the data, learn from it, and then affect the same to make more informed decisions. Whereas, deep learning is a technique for implementing Machine Learning. The term Deep Learning was coined to the machine learning community by Rina Dechter and to artificial neural networks by Igor Aizenberg and colleagues in 2000, in the context of Boolean threshold neurons. It is a class of machine learning algorithms. The word "deep" in "deep learning" refers to the number of layers through which the data is altered. But nowadays with all the hype, deep learning is getting more attention. In other logic "Deep learning is a class of machine learning algorithms that allows computational models that are self-possessed of multiple processing layers to learn representations of data with multiple levels of abstraction". Learning can be supervised, semi-supervised or unsupervised. More specifically, deep learning systems have an extensive *credit assignment path* (CAP) depth. The CAP is the chain of transformations from input to output. CAPs describe potentially causal connections between input and output. For a feed forward neural network, the depth of the CAPs is that of the network and is the number of hidden layers plus one (as the output layer is also parameterized). For recurrent neural networks, in which a signal may proliferate through a layer more than once, the CAP depth is potentially unlimited. We will distinguish with the help of some below mentioned examples how **deep learning** in today's time is actually doing justice to all the important information without stinting revolving around in this universe and processing it more proficiently in order to help us reach to some realistic inputs in the field of speech and image appreciation, financial sector, healthcare, natural language processing (NLP) etc.

**Example 1 – Shape Detection**

Let's start with the simplest case in point of shape detection which helps in recognizing a square from other shapes through explaining how things happen at a conceptual level.
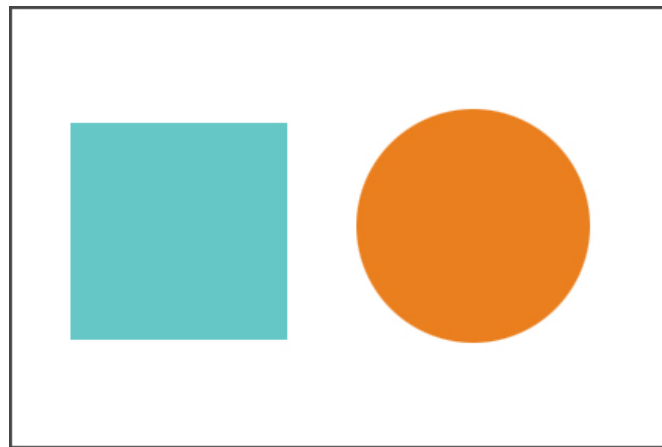

The simpler perception to check whether the shape is a square or not that our eyes do is to check whether there are four lines associated with the figure or not. After this to move to the nested hierarchy of concept we check whether the given lines are connected, equal, closed and perpendicular to each other. So, in the whole process we performed a complex task that is to identify square and we broke it into few simpler and less abstract tasks. Similarly, deep learning does the same process on a much larger scale.

Example 2 – Animal Recognize

Let's take an another example where the system has to recognize that the given image is of a cat or a dog.
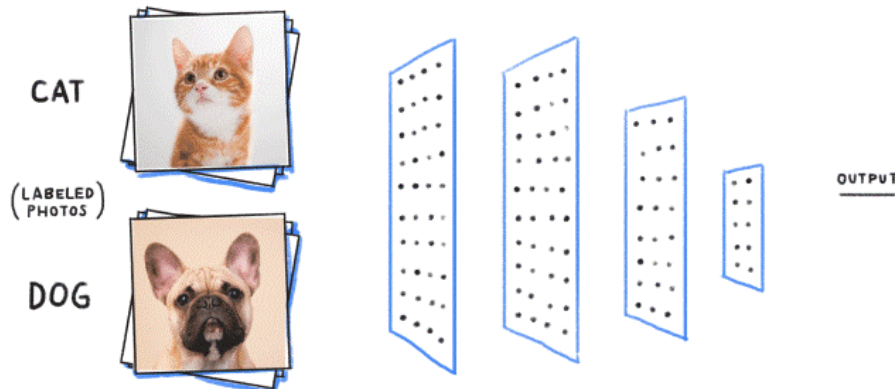
Machine leaning will solve the problem by identifying the defined features of a particular animal. Let's articulate moreover by their whiskers, eyes, teethes, ears etc. now deep learning will take a step ahead to it. In ML we defined the features in advance, now DL will automatically decide the important features itself and then it will conclude its decision.
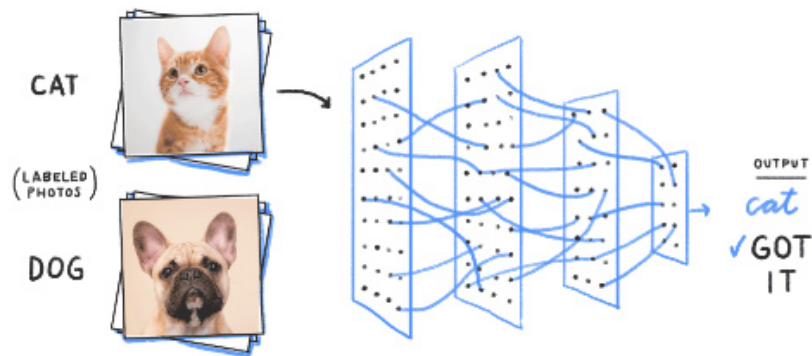
Deep learning works as follows:

• It first identifies the most relevant edges to find out a Cat or a Dog

• It then builds on this hierarchically to find what combination of shapes and edges we can find. For example, whether whiskers are present, or the shape of eyes etc.

• After the identification of complex concepts, it then decides which of these features are responsible for finding the answer.

Applications of Machine Learning And Deep Learning:

Both the concepts have their own advantages. There are various areas where these can be applied. These include;

Machine Learning:

1. For computer vision in applications like vehicle number plate identification and facial recognition etc.
2. For information retrieval in applications like search engines, text search, and image search etc.
3. In marketing for applications like automated email marketing, target identification etc.
4. In medical diagnosis for applications like cancer identification, anomaly detection etc.
5. In case of natural language processing for applications like photo tagging and sentiment analysis etc.

Deep Learning:

1. To detect pedestrians, which helps decrease accidents?
2. In aerospace and defense to identify objects from satellites that locate areas of interest, and identify safe or unsafe zones for troops.

Difference Between machine Learning & Deep learning

Artificial intelligence comes down to two major concepts known as machine learning and deep learning both of these are not new-fangled terms to us now and are often used interchangeably but still they have some major differentiations as stated below in tables:

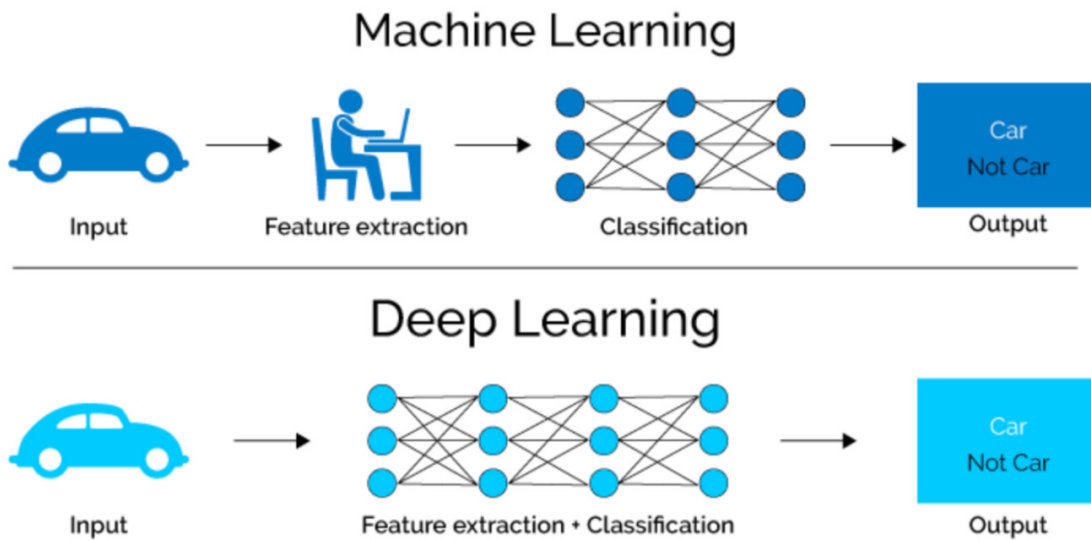| Basis	Machine learning	Deep learning
Meaning	ML commonly used alongside AI but they are not same. ML is just a subset of AI. It gives instructions to the computers on how to learn to do something.	DL is a ML which is applied to a large data set. It involves the use of neural networks. It is more similar to a human being identifying something, thinking about it and then making some conclusions about it.
How does it work?	Uses less of automated algorithms that need to be given more inputs and information to predict future decisions and model functions using the data fed to it.	The algorithm is more advanced and is able to Interpret data features and its relationships using its own data processing and neural networks which pass the relevant information through several stages of data processing.
Management	The various algorithms are directed by the analysts to examines the different variables in the datasets.	Once they are implemented, the algorithms are usually self- directed for the relevant data analysis
Number of data points	Usually, there are a few thousand data points used for the analysis.	There are a few million data points used for the analysis.
Output	The output is usually a numerical value, like a score or a classification	The output can be anything from a score, an element, free text or sound etc.

Figure 1: Machine Learning VS Deep Learning

Source: https://towardsdatascience.com/parallel-and-distributed-deep-learning-a-survey-97137ff94e4c

As from the above figure it can be concluded that deep learning is a subset of machine learning that is more similar to machine learning itself that its functions is also similar to it but it has some different capabilities. The major difference between both is the way of data presentation to the system. Machine learning (ML) uses the structured data whereas; deep learning requires the layers of the artificial neural networks (ANN).

After understanding the differences between the two it is important to know how in industry the future for these two popular concepts is poised. Some of the key future trends of the both are listed below:

1. By looking at the continuous growth and popularities in these two areas they have almost become must for the organizations to survive in this competitive environment.

2. Academia as well as industries will get a greater exposure to flourish research in these areas as number of funds are being invested is more than ever in these areas.

3. Both have been astounding us each day with their capabilities, and this trend will surely be continued in the future as well by providing with the best techniques and high-quality performance in the industry.

SOME IMPLEMENTATION AND EXECUTION BY THE CORPORATE HOUSES

Deep learning is closely related to the early 1990s theories of cognitive neuroscientists like on brain development and neocortical development. Some of its uses and implementation by the various corporate houses are listed below:

1. AtomNet a system for structure-based rational drug design is being used to predict novel candidate biomolecules for disease targets such as the Ebola virus and multiple sclerosis. In 2019 generative neural networks were used to produce molecules that were validated experimentally all the way into mice.

2. Cape Analytics buys geospatial and satellite image data and applies neural networks to create curated data sets that identify specific objects. Rather than pitching the service as a general-purpose tool for anyone who might want it, the team started by pinpointing outdoor pool enclosures on single-family properties in Florida and selling the data set to insurers.

3. Covariant.ai is launched, with a motive to integrate deep learning into factories.

4. In the area of CRM it is being used to approximate the value of possible direct marketing actions, defined in terms of RFM variables that helps in interpreting the customer lifetime value.

5. DeepMind Technologies of google have developed a system of learning how to play Atari video games using only pixels as data input only.

6. Drug discovery and toxicology: In case toxicology DL is used to predict the biomolecular targets, off-targets, and toxic effects of environmental chemicals in nutrients, household products and drugs.

7. Facebook automatically tags the uploaded pictures with the name of people in them.

8. Financial fraud detection: It is favorably being applied in case of anti-money laundering and fraud detection. With the help of DL system can spot the relationship between the data that can predict specific events by detecting anomalies.

9. Google Translate (GT) uses a large end-to-end long short-term memory network.

10. Google Translate uses an LSTM to translate what its inputs between more than 100 languages.

11. Image restoration: for image restoration DL is successfully being applied to the problems such as denoising, super-resolution, inpainting, and film colorization etc.

12. Blippar came with a mobile augmented reality application that uses deep learning to recognize the objects in real time.

13. In healthcare an auto encoder ANN is being used in bioinformatics, to predict gene ontology annotations and gene-function relationships.

14. Medical Image Analysis: In medical application it is being used in areas such as cancer cell classification, lesion detection, organ segmentation and image enhancement.

15. Military: The United States Department of Defense applied DL to train robots in new tasks through observation.

16. Mobile advertising: DL is popularly being used to interpret large and multi-dimensional advertising datasets. Customer data can be collected during the request/serve/click internet advertising cycle. This helps in forming the basis of machine learning to improve the selection of advertisement.

17. Neural networks have helped to improve machine translation and language modeling in NLP significantly.

18. Recommendation systems: Multiple deep learning is being applied to learn users' preferences over multiple domains. This helps in enhancing the recommendations for the users in multiple tasks.

19. TensorFlow is a framework that is created by Google for creating Deep Learning models.

20. Visual art processing: In visual art processing DNNs have proven themselves capable, for example, of a) identifying the style period of a given painting, b) Neural Style Transfer - capturing the style of a given artwork and applying it in a visually pleasing manner to an arbitrary photograph or video, and c) generating striking imagery based on random visual input fields.

Conclusion:

Both the machine learning and deep learning has their applicability and implication in almost every area ranging from medical to the marketing. Machine has its own advantageous whereas; Deep learning is one step ahead to it. Due to their exceptional features both of them have resulted in a greatest innovation of these days.

11 Year Plus Journey about GJEIS: From 2009-2019

GJEIS which was originated in the year 2009 is one of the peer review referred journal which has been persistent in serving the researchers. We want to launch an out of the ordinary festivity: thefirst11yearsof GJEiS with your support and that of many other colleagues from different areas of expertise, without whom this sparkle would not have ignited. This volume is a signpost in overflowing ways. First, it scripts the establishment of our10thyearofpublication, in which we have put forth how GJEiS has emerged. Second, we are about to embark on a new decade, under the banner of our new publisher, Scholastic Seed Inc. (www.scholasticseed.in). Scholastic Seed Inc. originated as a think-tank and an Out-of-Box service contributor of periodicals online platform apparatus and had urbanized digital state-of-art periodicals software exclusively for the magazines, scholarly journals, newspapers, annual reports and newsletters. In the present state of affairs these publications are available at regular intervals and require lots of digitization and contemporary thought to burgeon online

I would like to thank KARAM society in particular for having the vision to back our young periodical and see it through to teenage years. I've been fortunate to work alongside some splendid people, who helped an inexperienced editor, as we urbanized a bulletin with a very divergent point of view. As we go into the next segment of our escalation, I'm looking forward to working with Scholastic Seed Inc. that originated as E-publishing Aggregator & Periodical Mentor, a pioneer in library management and innovative corporation, which is rapidly expanding in the area of periodicals. The vertebral column of any journal is its editorial board as it not only sanctions the journal but reinforces it. Perhaps the most extensive and important task of the board is to bequeath with high quality reviews for articles where you may find tangential reviewers. Board members can also carry out as a third, or trusted "tie- breaker" reviewer on articles where there are split opinions. We have fashioned a new pedagogy from 2019 to reinforce and bring lucidity. The below box provides the understanding of the review process the journal follows across all the article published in particular issue volume after volume, the take out of the reviewer's and editorial comments are enclosed just for the information of the reader. From forth coming issue we have made our mind to add a blind reviewer's comment at the end of an article without disclosing the identity, so that more curious debate in academia would reach to unreached which by and large facilitates a grass root researcher about the reviewer process.

The editorial board (also known as an advisory board) ordinarily comprises of a gathering of noticeable individuals in the journal's field. Having an article board is exceptionally critical as they go about as diplomats for journals. More often, the quality of a journal is measured by the individual and academic accreditations of its editorial board. Besides giving recognition, the job of the editorial board is to prompt and bolster the proofreader. Capacities may include:

- Identifying new themes for commissions, special issues and prompting on course for the journal—giving in put on past issues and making recommendations for both topics and potential creators

- Provide content by composing periodic publications and other short articles

- Approaching potential patrons

- Peer audit; additionally help to distinguish peer analysts and give second conclusions on papers (for example where there is a contention between commentators)

- Identify fitting meetings for editors to visit

- Endorse the journal to writers, peruses and supporters and urge partners to present their best work.

In review of the exactitude it has begun its production by mulling over on issues concerning science, management, engineering and innovation in different areas of research, improvement and its meaning. Since GJEIS is an academic journal; it is economically sustained by KARAM Society, a Research and Academic Management conglomerate. GJEIS with a scholastic authorization is run by business distributers who don't make a benefit by charging memberships to individuals and libraries and tender free articles from their portal www.gjeis.com.

The GJEIS as an educational journal encourages dignity with its examination activities and fastidious blind and peer review process. The journal is as of now at present recorded in very nearly fifty registries throughout the globe, outfitted with Digital Object Identifier (DOI) from Cross-ref USA http://www.crossref.org . It also has an average impact factor of 2.31 from the different impact factor rating organizations. As of late according to the Google scholar, h-index is 94 and i-10 list is 921 from 2009-2019. From 2019 onwards as per the instruction given by the international listing agencies which provide ratings to the journal, we have started putting a similarity index at the end of an article to give more transparency and creditability to journals. Hope that these kinds of initiatives can definitely give journal an edge and create a niche. The journal with its present Volume- 11 Issue-III July-Sep 2019 had a mandate to advance the idea of Enterprise, Information and

System in business. It is intended to create network of harmonization between these three words. It is essential to know what the scholars and the academics are going to contribute about Scientifics how ground in making a break. We have created an across-the-board cluster to make GJEIS genuine.

We had also at the present made the Open access Journal with the goal that colossal number of individuals gets to use and appreciate perusing content. Furthermore, the committed page on Face book has also been made to create a network or scholars and academics alike https://www.Facebook.com/GJEiS.The GJEIS site has been moving to another contemporary Google-facilitated JavaScript administration which marks the length of populace and curates online catalog thereby helping in ordered and smooth access to peer-reviewed articles. It is additionally outfitted with site design improvement and web investigation for measurable examination and reference. GJEIS has also been put forth for UGC Approved List of Journals at S. No. 27981 till June 2019 https://www.ugc.ac.in/journallist and is also going to get a space in a care list designed for journals due to its rigorous review process

To commemorate this we want to publish a Issue that collects your impressions in the form of review, original article, letter to the editor, opinion or perspective article, etc.,which includes a paragraph of congratulation to GJEIS on its 11th anniversary. It may also take account of a personal reflection on how has GJEiS influenced your work as a researcher, why do you like to publish in GJEiS or what do you think GJEiS has contributed to the field?

I, on behalf of GJEiS want to express thanks and appreciation to the whole workforce of KARAM Society and group of people from Scholastic Seed Inc. for their enthusiasm and relish in bringing out this current volume/issue.To make the journal a benchmark from 2019 we are creating a new squad with more modern thought and strengthening the peer review process. I would in compute be appreciative of your dependable assenting feedback to our society and staff at the review office.

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Subodh Kesharwani is an academician with a bronze medal in his Post graduate and Doctorate in ERP System in 2002 from Allahabad Central University. He is one of the researchers who had concentrated his research on Total Cost of Ownership [TCO] & critically evaluate ERP vendors including SAP. Dr. Kesharwani is presently an Associate Professor, School of Management Studies with a total 20 years of hardcore teaching and research in Information System and its linkages with various domains of management at Indira Gandhi National Open University, New Delhi. He is presently an expert in various burgeoning areas and had delivered a talk as a trainer on MOOCs, Team Building, E-commerce, Technology Enabled Learning, E-resource, Technology Uses in research, Block chain, Internet of Thing, Enterprise Information System, Free & Open Source Software, etc. Dr. Subodh had developed and coordinated a program in Entrepreneurship & Business Skills in collaboration with Rajiv Gandhi Foundation (RGF), India and Commonwealth of Learning, Vancouver, Canada which provides training to the trainers at IGNOU. He is presently a program coordinator of IGNOU-ICWAI alliance. He is also a founder Editor-in-chief of a peer reviewed refereed journal entitled "Global Journal of Enterprise Information System [GJEIS] from 2009 onwards, http://www.informaticsjournals.com/index.php/gjeis which has completed its 10 years term and published 40 issues till date both in printable and virtual format. The Journal GJEIS is equipped with DOI from Crossref USA and listed in almost 50 directories in the world with an impact factor of 2.68 of 2017-18. Dr. Kesharwani had participated as a debater in diverse TV show and participates in Interactive Radio Counseling including Gyanvani and Gyandasrshan. He had written a Book entitled "ENTERPRISE INFORMATION SYSTEMS-Contemporary Trends and Issues" in a co-authorship with Professor David L Olson (University of Nebraska, USA. which was published by WORLD SCIENTIFIC, USA. http://www.worldscibooks.com/business/7287.html He had another text book on ERP system which caters a B.Tech VI Semester CS and IT Students. He had developed educational contents for various academic Institutions such as ICAI, IGNOU and contributed articles for various journals/ Magazines, etc. He had chaired a good number of technical sessions at various conferences & seminars nationally and globally. He is presently running a "Blockchain Federation for Indian Researcher" which he thinks can bring paradigm shift holistically. Dr. Kesharwani had been awarded "IT Innovation & Excellence Award 2012" in the field of ERP solutions, by KRDWG's Selection Committee at IIT Delhi. He is in the panel of the Steering Committee of the International Journal of Computing and e-Systems, TIGERA-USA. He was in the key panel of round-table workshop conducted by Ministry of Corporate Affairs in Association with Indian Institute of Corporate Affairs to streamline "Corporate Data Management and Governance". He was one of the resource person who shared the experience with the 12 different ITEC countries participants who had attended International MDP.