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(DEEMED TO BE UNIVERSITY)
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DATA GEEK

by BUSINESS ANALYTICS Specialization

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**ARTIFICIAL
INTELLIGENCE &
MACHINE LEARNING**

Institute of Management,
CHRIST (Deemed to be University)



From the Editor's Desk...

“Information is the oil of the 21st century, and analytics is the combustion engine”

- Peter Sondergaard, 2011

The ability to monetize the data is the key differentiator of growth in the market today. Analytics plays a significant role in redefining the nature of competition and the way the businesses are done. According to Gartner, Business Analytics comprises of “solutions used to build analysis models and simulations to create scenarios, understand realities and predict future states”. It includes data mining, predictive analytics, applied analytics and statistics, which is delivered as an application according to the business users. DATA GEEK is our first newsletter initiative from the Business Analytics specialization, Institute of Management, CHRIST (Deemed to be University), with an objective of sharing interesting insights, trends and information related to Business Analytics.

Here's a group of young and promising students who have put their ideas together in designing this wonderful newsletter. The content ranges from glimpses of conceptual understanding of Artificial Intelligence (AI) and Machine Learning (ML) to its practical implications in today's world. It discusses specific applications of analytics in various domains such as Finance, Human Resources etc. The first article by Aleena Chacko offers a brief account of the concept of AI, the need for embracing AI, its real-life applications and the challenges for businesses to adopt it. This is followed by Ishita Kumar's article, which presents the AI revolution particularly in the domain of Finance. Ms. Rakshitha's article delineates the influence of Machine Learning on businesses. Ms. Mihika has attempted to discuss some of the interesting AI applications in Marketing. An interview with Mr. Kiran Kumar, Vice President, Moody's Analytics Knowledge Services enunciates the scope of analytics in Moody's. The crossword and the quiz are the other attractions of this issue.

I would like to congratulate the entire crew of DATA GEEK for their sincere efforts to actualize this endeavor and wish this marks a great beginning in the space of learning and sharing knowledge on Analytics.

Please reach out to us for any queries or suggestions at datageek@mba.christuniversity.in

Happy Reading!

Prof. Reena Raj



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Artificial Intelligence: Adopt or Perish

“The development of Artificial Intelligence could spell the end of the human race. It would take off on its own, and redesign itself at an ever-increasing rate.” These lines stated by Stephen Hawking proved right in every sense. Artificial Intelligence (AI) has various operating definitions though the foundation remains the same. As defined by Merriam Webster, AI is a branch of computer science dealing with the simulation of intelligent behavior in computers. It alludes to those software engineering methods and innovations that enables programming to display 'smarts', i.e., to do things that appear to be human like. At present, Artificial Intelligence has matured to an extent offering practical benefits from applications in various fields. The major areas include expert systems, neural networks, robotics, and natural language processing and fuzzy logic. According to IDC (International Data Corporation), worldwide spending on cognitive and Artificial Intelligence systems in 2018 has increased by 54.2% over 2017. It has also estimated that by 2019, 40% of digital transformation initiatives will use AI services, and by 2021, 75% of enterprise applications will use AI.



Artificial Intelligence is evolving at a high speed. From voice-controlled assistants to online ordering to self-driving cars in development, AI is the brains behind computer software. The growing immeasurability of data, high-performance hardware, and advanced software have all contributed in laying the foundation to the emergence of Artificial Intelligence. This trend has in turn given way towards various opportunities in the industry. Forrester research states that businesses that use AI and related technology will steal \$1.2 trillion per annum from their less informed peers by 2020. Thus, AI presents a unique and compelling opportunity for those businesses whose operations span the virtual and physical worlds.

Applications of AI

One of the best examples of the applications of Artificial Intelligence in use today is the Alexa. Alexa's rise to become the smart homes hub has been somewhat impressive. When Amazon first introduced Alexa, it took much of the world by storm. However, its usefulness and its strange ability to decipher speech from anywhere in the room has made it a revolutionary product that can help us scour the web for information, schedule appointments, shop, set alarms and a million other things, but also help power our smart homes and be a channel for those that might have limited mobility.



The Artificial Intelligence continues to be a major component of the digital transformation. Another remarkable example is that of Cogito, which is the use of behavioral adaptation to develop the emotional intelligence of customer support representatives that exists in the market today. The highly-esteemed luxury travel company, John Paul, helmed by its astute founder, David Amsellem, has made the best potential use of AI in the predictive algorithms. It is made use for the existing client interaction, able to understand and know their desires and needs on an acute level. Pandora's A.I. is also quite possibly one of the most revolutionary techs that exist out there today. They call it their musical DNA. Based on 400 musical characteristics, each song is first manually analyzed by a team of professional musicians based on these criteria, and the system has an implausible track record for recommending songs that would otherwise go unnoticed but that people inherently love. In this way, the implementation of AI in businesses will be driven by digital platform providers.

Similarly, businesses will begin to share their data with the software they work with instead of trying to accumulate their own data in concealment. As embedded AI becomes the norm, companies will have the choice to share data with the vendor to increase the machine learning capabilities, and have the technology learn not just

from the business data, but also from the data of the vendors' customer base. Businesses using AI-enabled software will begin to apprehend that the benefits of data sharing outweigh the risks, which essentially center on data security. These patterns will rise as a point of convergence for AI in the coming year and affect business modernization and computerized change. Private companies and endeavor organizations alike will receive and grasp these astute patterns, on the grounds that the advantages will be important to the point that they will be unavoidable.

Cloud on the horizon

Even though AI is galloping because of its widespread applications in various spheres of business and customer engagement, it is fraught with umpteen challenges. These budding technologies are an expensive deal to an organization. While big names like GAFAM (Google, Apple, Facebook, Amazon, and Microsoft) have their respective budget allocations for AI implementation, it is the small and mid-size enterprises that make risky efforts to implement AI solutions to their business processes. Data acquisition and storage is another real challenge. Industrial AI systems depend on sensor data as its input. The humongous amount of sensor data collected for AI validation may present noisy datasets that are difficult to store and analyze, thus causing difficulty. It also poses out some serious ethical challenges. It is increasingly mimicking human conversations to perfection. The humanoids like Sophia, Junko Chihira, and Nadine have perfected human emotions and caricature that is bizarrely true to accept.



It is becoming increasingly difficult to make certain whether the customer service executive we are chatting with is a human or a machine. This possesses an ethical and moral challenge, which makes the AI solution a tough technology to implement.

Data privacy is another hurdle to be considered. AI-based applications can become intelligent only if enough relevant data is available to learn from. Numerous consumer products, ranging from smart home appliances to computer applications tend to have a feature that makes them vulnerable to data exploitation. To make the matter worse, people are frequently unaware how much data their software and devices generate, process, or share. And as we become more reliant on digital technology in our everyday lives, the potential for exploitation will only increase. These risks are real and need to be addressed through consideration and consensus. It is not wrong to say that AI has found its place in every industry. Regardless of whether it be for straightforward assignments, for example, recommending items or giving clients essential client benefit, or for confounded

estimates like running programming tests and completing extensive problem-solving for industries, AI has discovered its place in our reality, and it's protected to state that it's setting down deep roots.

'How much of an effect will this technology have on our future and what other ways will it seep into day-to-day lives?' still remains unanswered. Artificial Intelligence is yet to show case it is most exceptional applications in the product and service industry. AI is promising and so is the future it holds for consumers and companies alike. The day is not far away when organizations will work with mechanized help rather or added to the human workforce. Artificial Intelligence is growing and service-sector companies, as well as their industrial counterparts, will move to integrate this technology into their mechanisms. The future for companies working with AI assistance is going to be a bright one.

ALEENA CHACKO K

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Financial Services: The AI Way

Artificial Intelligence (AI) makes it feasible for machines to make changes according to the new information sources and perform tasks like human beings. Most AI examples that we hear of today – from chess-playing computers to self-driven cars – depend intensely on significant learning and natural language processing. Using these advancements, machines could be trained to accomplish specific tasks by handling a lot of information and perceiving designs in the data.

The term AI; was introduced by John McCarthy in 1956. It incorporates many key things ranging from process automation of robotics to the genuine process of robotics. Today, it has gained huge popularity among large organisations majorly due to the measure of data these organizations are handling-in. Artificial Intelligence processes are significantly more viable in recognizing the data patterns than people; which is valuable for businesses to understand their intended target audience and gain knowledge. According to a recent PWC study, it was found that AI has the potential to contribute \$15.7tn to the world economy by 2030 which projects an enormous opportunity for various businesses, specifically financial services.

Application of AI in Finance ranges between wealth and asset management, robotic process automation (RPA), insurance, customer support, compliance & fraud detection and credit scoring.

Wealth and asset management

Digital Wealth Management is a broad area, which tries to manage ones 'income, tax preference, investment on the pretext of ones 'interest in its short term or long-term needs. So, initially this field was managed by Financial Advisors but with the advent of AI, it has been changed to Robo-Advisors (RA).

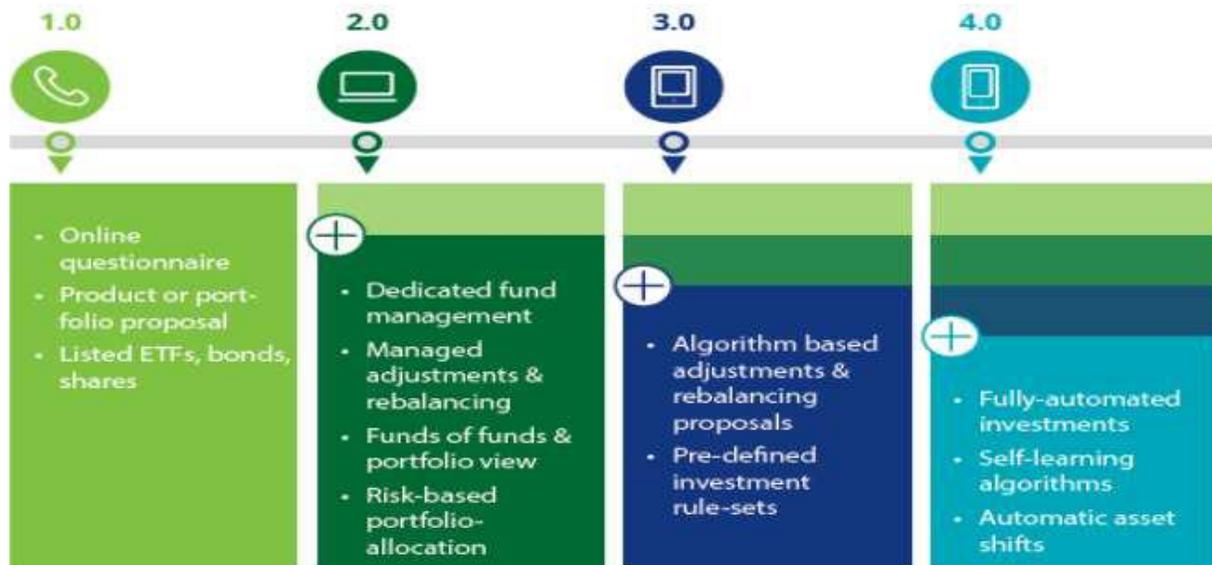
Robo-Advisors are a programme of algorithms that invest and manage money on behalf of an investor, based on the objectives and time horizon of the investor. It is a kind of technology, which crunch data and provide solutions. This is used to make the process of investing the wealth in a less expensive manner and simplify the complicated universe of investments. This service is a completely automated service, which in a way has become a complement over human advisors, and has the capability to dominate the entire market by 2022.

The current capabilities of the RA is to understand the client needs which is assessed through the questionnaire, propose solutions based on the inbuilt algorithm programmes, implement solutions and also monitor results and adjust strategy as per the investor needs. So, in terms of value addition Robo-Advisors also

give predominant financial services effortlessly in terms of reducing the tax loss, coordinate ordering single stock diversification and dynamic portfolio rebalancing.

Over the years the advisory services have evolved from phone based to tech based which can be shown by this timeline below-

Robo-Advisory evolution: Digital Wealth Management from 1.0 to 4.0



Robotic Process Automation (RPA)

The global RPA market anticipated to reach USD 8.75 Billion by 2024. RPA robots utilize the user interface to capture information and control applications simply like humans do. They interpret, trigger reactions and communicate with different frameworks to perform a huge variety of mundane tasks. The middle and front office operations in financial services, for example, underwriting support, store handling and billing-show the advantages for firms to utilize this technology. From increased profitability to better time-management and enormous cost savings, the benefits are many.

Romanian Unicorn UiPath is a leader in the field of RPA, which allows the organizations to build an agile digital workforce by giving an ultra-modern platform for software robots orchestration. Their products mechanize over all the internal or web-based applications and databases and have unparalleled remedies for Citrix, SAP and BPO mechanization.



Advantages of RPA

Insurance

In the insurance industry, AI powered chatbots are supplanting human service providers to deliver constantly accessible, quick and proficient client services. AI simulations enable better modelling and improvements in Internet of Things (IOT) have prompted the explosion of accessible data points, which has empowered the insurers to serve the clients better.

MetroMile, for example, is a US start-up, which is utilizing AI to build up an absolutely; new plan of action in which the insurance premium is determined based on utilization by installing an IOT device on vehicles to extract the necessary information on the user.

Another US based start-up, Lemonade, has enrolled a bot called Jim, who takes less than 3 seconds to settle an insurance claim by implementing various back-end operations simultaneously. On the front-end, it's additionally a case of a huge advancements in customer service and product improvement.

Pay a low base rate

Your car is covered and fully insured even when it's parked.

Low rates start at \$29.

Then just pennies per mile

With pay-per-mile, your bill is based on how far you drive.

example

\$29 + (450 × 6¢) = \$56

monthly rate miles cost

How MetroMile Model Works

Customer support

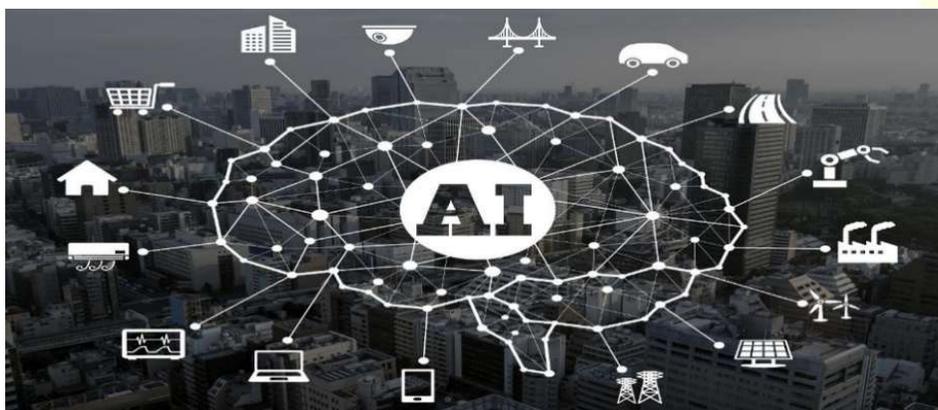
In the field of accounting, AI chatbots are used to productively address the basic queries or questions from clients including the latest account balances, the status on accounts or when certain bills become due, etc.

AI technologies such as, Natural Language Processing (NLP) provides instant service. It eliminates the need of the customer to go through multiple loops to speak to the authorized person as the Banking app of Revult provides support services by utilizing the smart chat, which directly enquires to the relevant support staff. Machines alone can address to the customer's grievances, for example; Royal Bank of Scotland installed an AI bot Called Luvo in 2016 that enables clients to deal with their queries and hands over the query to an actual human in case machine fails to provide a solution. The rise of these alleged robo-advisors is expected to re-define the client experience and give incumbents a device to bring up their game.

Compliance and fraud detection

Since the advent of 2000 financial crisis, firms working in the financial services are under massive strain to be compliant with complex administrative structures intended to protect the framework against undue hazard and fraudulent conduct. The procedure of compliance in itself is lengthy and challenging with piles of paperwork and legal documents mostly involved. A key example of AI in reality to help streamline the procedures is JP Morgan's execution of COIN, a machine learning system that accomplished 360,000 hours of compliance work in just few seconds!

Apart from helping in analysing documents, AI additionally helps to redefine Know Your Customer (KYC) and Anti-Money Laundering (AML) procedures to help decrease the chances of fraud. Utilizing advanced predictive analytics, banks can break down huge informational indexes that get on suspicious activities. HSBC is the Europe's biggest bank that intends to integrate the AI software – Quantexa, which is a UK-based start-up, to identify any fraudulent happenings at a remarkable cost reduction.



Credit scoring

In India, Artificial Intelligence and machine learning are serving approximately 80% of the population with no credit score gain access to credit as new Fintech organisations for instance, Upstarts is utilizing AI to gather alternate information to demonstrate financial soundness. This alternate information may take different structures that analyses a customer's digital impression to collect information that helps in making credit choices. In the case of Upstart, the company investigates the business history, educational background and different sources of information like social networking sites to make lending decisions.



In this brave new world, AI-driven programmes are deranging the credit business to empower a large number of underserved clients to access the financing options earlier distant.

Without a speck of doubt, AI is the future for the finance industry. Since the speed at which it is progressing towards making the financial processes easier for the customers, it is very soon going to replace human beings and provide faster and much more efficient solutions. Bots are gradually evolving as innovations are being in the AI sector. The firms who are seeing this as a long-term cost-cutting investment are making massive investments. It helps the companies in saving money on recruitment process and avoiding human errors in the process.

Despite the services available, India continues to have one of the lowest usages of digital payment systems globally. The biggest challenge of rolling out of vigorous and user-friendly digital payments solutions to the areas not equipped with electricity and without broadcast communications network coverage remains.

ISHITA KUMAR

1728041

INDUSTRY INSIGHTS

Mr. Kiran Kumar, Vice President, Moody's Analytics



Mr. Kiran Kumar is a post-graduate in finance and a renowned financial risk manager (FRM) from Global Association of Risk Professionals (GARP). He started his career as an Assistant Manager at iGATE Global Solutions, and is currently in position as the Vice President at Moody's Analytics Knowledge Services (MAKS). Mr. Kiran has a vast experience across investment banking analytics, equity research, M&A and LBO modeling, thematic research, valuation and financial modeling.

Holding a key role in developing and executing automation initiatives across Investment Banking and Invest Research processes in MAKS, he is a prominent figure involved in generation, assessment and exploring automation possibilities across varied service lines. Acting as an active member of the knowledge management department at his current organization, he has conducted an array of trainings for over 250 freshers', onboarding them onto a variety of relevant platforms.

Moody's:

Moody's Analytics Knowledge Services, a division of Moody's Analytics, is a leading provider of high-value research, analytics and business intelligence to the financial services sector. Moody's Analytics Knowledge Services was formerly named, Copal Amba, which later rebranded to Moody's Analytics Knowledge Services in 2016.

The company supports over 200 financial institutions and consulting companies through a team of over 2,700 employees. Their clients include leading financial institutions, asset managers, Fortune 100 corporations, mid-tier companies and boutique investment banks. Moody's Analytics Knowledge Services offers knowledge-based services to global asset managers, private wealth managers, brokerages and trading firms, commercial banks, investment banks, corporate and consulting firms, insurance firms, market research firms, private equity, venture capital firms, and specialist advisory firms.

What do you think are the skill sets required by an aspiring analytics professional?

One must be in a position to understand what is to be done with a tool. The tool will only facilitate quick analysis. An example is that of correlation. One must be aware of the input data and also must have the knowledge of what one is trying to arrive at. One must be strong with the concepts. The tool will only facilitate quick analysis.

Data is considered to be the most powerful weapon in today's world. But, don't you think data is insecure in the hands of the companies?

It totally depends on the ethics of a company. If sharing information doesn't benefit the client, the person will not share it with the company. And, the companies have to live with this challenge. A client when asked to provide data will surely ask "what is in it for me?" If someone asks a straight forward question, it is purely a transaction. Somebody is trying to achieve something. Companies have to make them understand what the client can benefit. If the client denies, the companies are helpless. Companies have to give a boarder picture. Ultimately, it is about the trust between a client and the company.

What according to you can be the next cutting-edge development in the field of analytics? And, how is Moody's preparing for it?

Right now, AI and ML are in their infancy stage. So, this itself will take next two to three decades in order to reach its maturity stage.

Can you tell us any situation which you encountered, where you had to face some major challenges related to your profession? How did you overcome such challenges?

We need to give the clients a bigger picture. If the companies tell them that this is what you are doing, and we are trying to automate it, the clients feel scared. Unless they are convinced about the automation and its adoption, they are not going to be supportive. Let's focus on an example on how automation acts as a catalyst by speeding the process of growth. Instead of growing in long three years, business will be able to grow in just one and a half years by the sole use of automation. But this will happen only if there is an appropriate communication between the company and the customer. One of the cases where automation is an underused weapon is that of government organizations. To eradicate lack of knowledge, we to communicate and make them clear what was up for them. Technology is and never will be a threat to anyone. It will only help augment the growth.

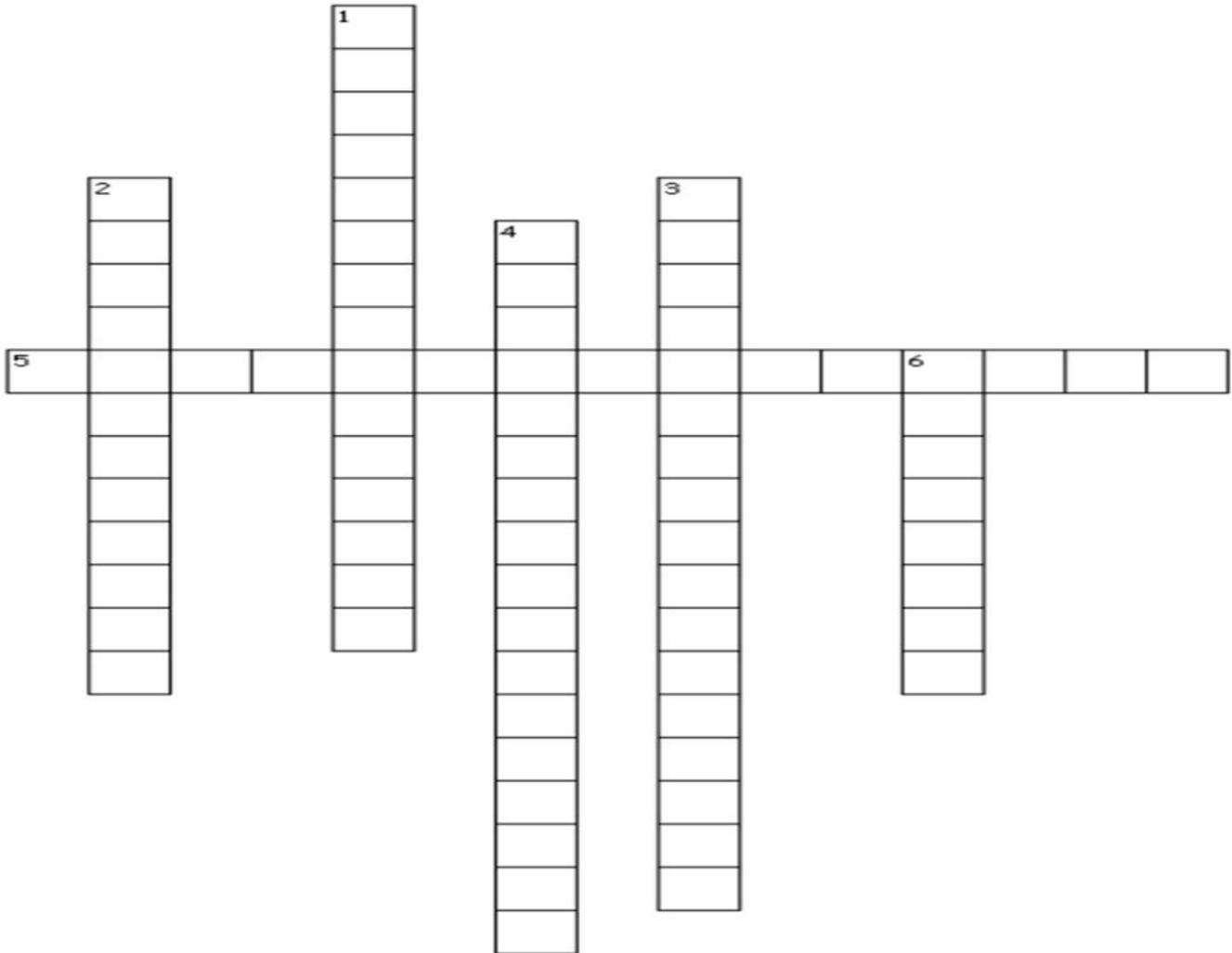
Could you give some suggestions to students like us who are willing to take up analytics as a career option?

The business analysis and analytics are vast topics. Students need to interact with the people from the corporate. This in turn will provide them with an insight into their experiences and the advancements in the field. One must also have knowledge about the concepts and its applications.

ALEENA CHACKO K

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CROSSWORD



Across

5. AI enabled cars

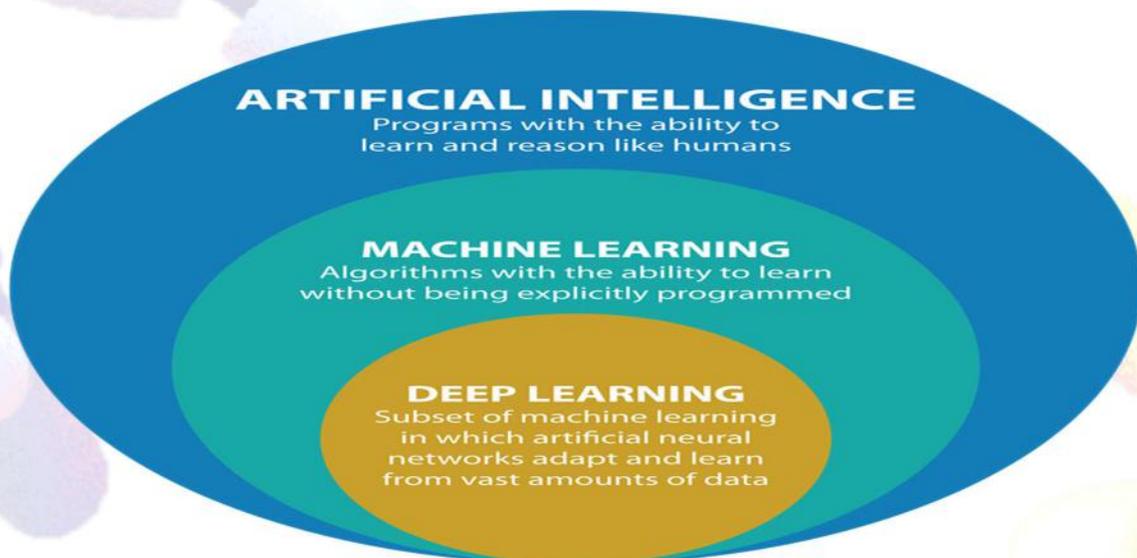
Down

- 1. Forecasting sales
- 2. Identifies images and tag people
- 3. Identifies writer attitude
- 4. Identifies faces
- 6. Automated response pop-ups

Machine Learning Applications

“Humans can typically create one or two good models a week; Machine learning can create thousands of models a week.” Thomas H Davenport

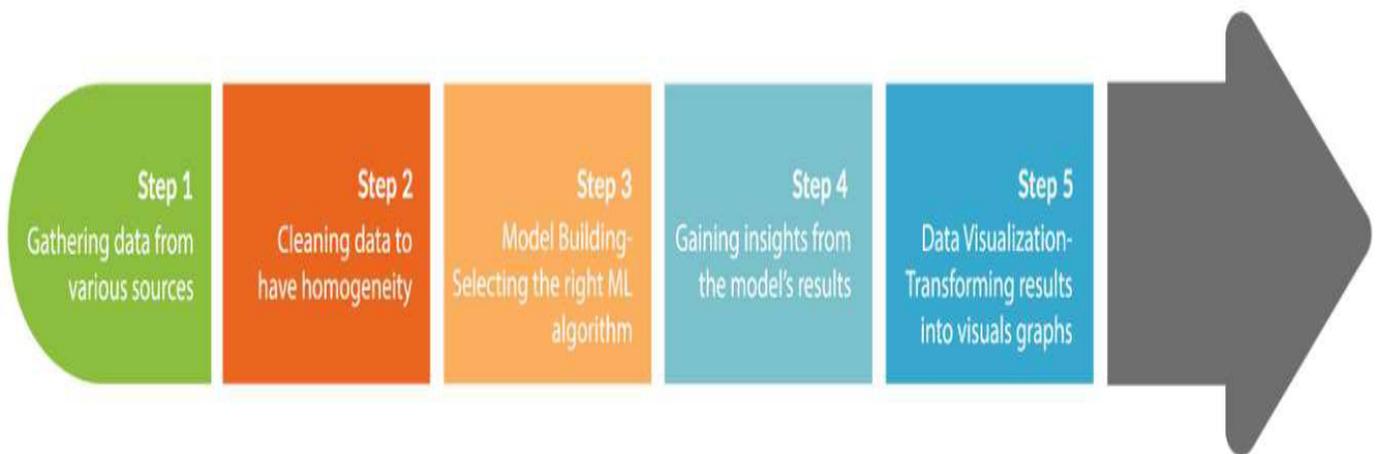
Machine learning is a subset of Artificial Intelligence. A computer is able to learn from experience without being specifically programmed. It focuses primarily on the designing of systems, thereby allowing them to learn and make predictions based on some experience which is data in case of machines.



Arthur Samuel in 1959 coined the word Machine Learning (ML) and defined it as “A field of the study that gives computers the ability to learn without being explicitly programmed” and Tom Mitchell defined ML as “The field of machine learning is concerned with the question of how to construct computer programs that automatically improve with experience.” These programs or algorithms are designed to learn and improve over time when exposed to new data. The techniques used for data mining have been around for many years, but they were not efficient as they did not have the competitive power to run the algorithms. If you run deep learning with access to better data, the output obtained will lead to dramatic breakthroughs, which is termed as machine learning.

Machine Learning is a game changer in this digital era and it is undoubtedly going to redesign the landscape of how organizations & nations will function. With an increase in the volume and the scale at which the data is being generated, it becomes crucial that ML, a branch of Artificial Intelligence takes the accountability to predict where we, as humans who are the most powerful creation of this earth are heading to. Our computers are no more used for only simple calculations; they are now capable of processing peta bytes of data in seconds. So Machine Learning algorithm when supplemented with the right set of data can be a dominant factor for sectors like manufacturing, healthcare, auto industry, Banking, finance and Science.

Understanding Machine Learning



The above figure depicts the process of Machine Learning. Machine Learning is wholly integrated in our daily lives, so much so that we might not be consciously aware of how frequently it is being used. For example, Google's Self-Drive Car, is a widely sought-after product of Machine Learning. Spam emails being attentively dumped away, regular recommendations while shopping online, offers from particular brands based on a person's interest are all straight outcomes of Machine Learning. Besides the basic applications, more current complex uses of ML such as early fraud detection and emotional and sentimental analysis are also possible by using a variety of data mining techniques. These are also considered to be direct products of Machine Learning.



Machine learning is used all along the span of Amazon consumer services, starting with its online store to Kindle and Echo devices. Machine learning is used to find out user preferences for items like product purchases, as well as for the Alexa Engine, Alexa Smart Home Devices, Amazon JHIM, Amazon Music, and other features. In addition, it also offers machine learning services through the Amazon Web Services which is built on experiences gained from consumer products.

Uber uses machine learning-as-a-service platform that allows the in-house teams to effortlessly build, organize, and operate machine learning solutions at Uber's scale. It covers end-to-end ML workflow, such as managing data, training; evaluating, deploying models, making predictions, and monitoring predictions such as how long will it take before a ride will arrive. Uber plans to eventually offer this ML-as-a-service to the public.



There are tools introduced by companies which enable the integration of Machine Learning. IBM's Watson is one such tool which allows data scientists to transform data and apply machine learning algorithms to train predictive models and construct intelligent applications that leverage the predictions generated by machine learning models. Developers can also apply an algorithm to learn from the data sets to then generate models that can make predictions based on the given data set. It also offers data model building for customers, who can choose from algorithms IBM provides or let IBM decide which one is best for them.

The changing face of managing Human Resources

Like all dimensions of modern business, technology is changing the way we manage and function. This applies to all departments in the company and Human Resource (HR) is no exception. HR collects huge amounts of data on all aspects of employee movement but without some form of machine learning to process and analyze this information and present usable reports; it will be next to impossible to identify significant trends, threats and opportunities.



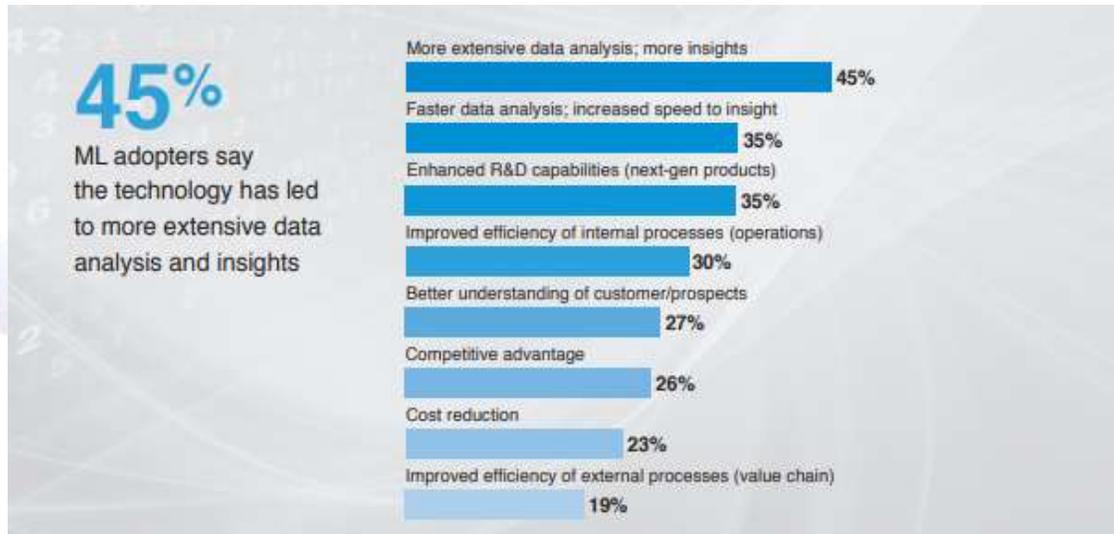
The data needs to offer meaningful practical insights and machine learning can do this. Workflows can be enhanced, training outcomes will be well understood and hiring trends, sick days and vacation requests can all be optimized through machine learning. A range of machine learning applications are currently being used by many companies to develop their chances of attracting suitable recruits. Companies such as Glassdoor and LinkedIn have successfully used machine learning to narrow searches and seek out suitable candidates based on advanced intelligent algorithms. Machine learning is able to process the data in order to measure and understand this far better than a team of humans would. These insights can prove valuable in increasing productivity and reducing staff turnover rates.

The human component of HR will never disappear but machine learning can direct and assist to guarantee the functions of these departments are streamlined and faster while strategic and day to day decisions will increase in their accuracy.

ML and future of business

Businesses have always been at the forefront as early adopters of new technologies. Advancements in computing like Machine Learning have already made a notable impact on the business world. In fact, 61% of organizations most frequently picked Machine Learning/Artificial Intelligence as their company's most significant data initiative for the coming years. We have big data and business analytics initiatives coming in at 58% holding the second place. Overall, 45% Machine Learning adopters say that this technology has led to more widespread data analysis and strong insights and provide a number of other benefits as shown above. The significance of machine learning technology has been acknowledged by companies across several industries that deal with enormous volumes of data. By gathering hidden insights from this data, businesses can work more efficiently and gain competitive edge in the market. Apart from enabling enterprises to identify trends and patterns

from varied data sets, Machine Learning also enables businesses to automate analysis, which was previously done traditionally by humans. Using Machine Learning organizations can deliver custom-made services and differentiated products that precisely cater to varying needs of the customers.



Source: amazonaws.com

With business operations and processes spread across varying levels, the inclusion of a Machine Learning framework can be proven worthwhile in increasing efficiency, productivity, and speed. Machine learning allows companies to surface the untapped value in their data. The possibilities of Machine Learning are infinite. It can be a competitive advantage to any company, be it a top MNC or a startup that is currently being managed manually. In the future, the same monotonous task will be done by machines. The Machine Learning revolution will continue to expand and will be an integral part of our future.

MN RAKSHITHA

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AI: Redefining Customer Relationship

In the past, Customer Relationship Management (CRM) heavily relied on people to collect and analyze data in order to serve their clients in best manner. This involved keeping files on index cards noting frequent customer's style preferences and any other relevant details. Today AI can quickly sift through countless data and accurately predict which customers are more likely to make a purchase. This requires a database, which the owner needs to manage and update on a regular basis.

Why not to make these requirements automatically fulfilled? Here comes Artificial Intelligence to rescue. AI is the only way so far that can make a database less static and update them as and when required. Now let us travel a year or two back, in order to get hold of some facts regarding the impact of CRM; on a certain business, and how it affects the revenue generated.

- Usage of CRM software has grown annually by approximately 15% in the period 2012 – 2017.
- CRM, according to sales teams, can help in increasing revenue by around 41%.
- 49 – 51 is the % ratio of companies having and not having a CRM system.
- Customers are not aware of the features in the CRM software; hence, the future interactions get affected.

In today's competitive world, businesses in order to stay ahead of others, have to look after customer care, loyalty, and satisfaction. Eventually, the CRM software has to complement human efforts and provide better and faster solutions.

Now let us have a look into a few ways in which AI will help optimize business operations by complementing CRM software.

Routine tasks automation

AI, as we all know, readily helps in automating mundane tasks, which are time consuming. AI thus can handle tasks like data entry, update, retrieval, and preparing call lists. CRM systems learn more about customers' habits; AI will help in analyzing them and suggest new processes and activities based on their tastes. The sales representatives can easily gather the information and market the products accordingly.

Virtual assistant

The smart systems have access to client data like web behavior, demographics etc. and by incorporating an advanced degree of intelligence into them, they can learn and conduct sales conversations. Sales representatives and service agents will become smarter and more productive as they will be able to analyze data instantly, have quick access to policies, inventory, service history, and customer account profile information to

help them decide on the next best action to better meet a customer's need. The best example is Olay's skin advisor. Olay's Skin Advisor is an online consultation platform that can tell the true age of a user's skin from a selfie. It also provides personalized skincare routines and reports using AI.

Improved segmentation and customization

Intelligent algorithms will help segment customers by gender, location, purchase history, etc. AI-assisted CRM will be able to learn from past decisions, actions taken and historical patterns available in the data to qualify leads. From this information, the CRM systems will be able to send personalized messages to the target audiences. For example, we keep on getting suggestions on online e-commerce sites based on our search history and order details.

Customer retention

AI not only helps in gathering information but also helps in building comprehensive target profiles. With customer profiles on the tips of their fingers, sales representatives can customize interactions hence improving their efficiency. This will lead to higher customer satisfaction and in turn retention. For example, creating personalized messages for each customer to make them feel they are treated; as unique individuals, not a batch-and-blast group. Sending greetings on birthdays to help customers feel better which increases their loyalty.

Train the team

Smart CRMs will be able to perform situational analytics by analyzing data, policies, customer account, and profile information. It can thus coach the team to decide on content, answers and sales play that can drive better results against a situation.

Presently, the CRM systems embedded with AI has Predictive lead scoring, Forecasting, Recommendations and Natural language search. In future, we can expect faster and modified ways in which a customer can be assisted. Automatic user recognition can be one of them. Cookies are usually the fundamental method of recognizing users, and how they browse the internet, CRM systems could do a little more in terms of adding automatic recognition for both users and customers.

MIHIKA CHATTOPADHYAY

1827040

QUIZ CORNER

1. One of the following does not fall under the category of Natural Language Processing: Identify the same.
 - a. Machine Translation
 - b. Speech tagging
 - c. Emotion recognition
 - d. Paraphrasing
2. The process of providing an algorithm with records in which an output variable of interest is known and the algorithm learns how to predict this value with new records where the output is unknown is called as _____.
3. _____ allows computers to interpret human speech and provide relevant solutions. It converts spoken words into text and navigational commands
4. The technique to determine which products are purchased together in a single transaction and how frequently is known as _____
5. AI platform of various companies; Map them accordingly.

Company	Platform
1. CapGemini	a. Cora
2. Genpact	b. DryIce
3. Tata Consultancy Sevices	c. instream
4. HCL	d. Ignio

6. Artificial Intelligence is the ability of a machine to perform _____ functions we associate with human minds, such as perceiving, reasoning, learning, and problem solving.
7. _____ is a type of learning that can process a wider range of data resources, requires less data pre-processing by humans, and can often produce more accurate results than traditional approaches.
8. As a budding manager, you would like to _____ better to arrive at better decision-making using AI technologies.

9. One of the following is not a reason for the years of AI winter: Identify the same.

- a. Hype around AI
- b. Funding cuts from investors
- c. Lack of computing power
- d. Lack of R & D in AI technologies

10. _____ is a machine learning system used by JP Morgan that helps in fraud detection.

✉ Mail your answers at: datageek@mba.christuniversity.in

Answers to Crossword

- 1. Sales Prediction
- 2. Image Tagging
- 3. Sentiment Analysis
- 4. Facial Recognition
- 5. Self-Driving Cars
- 6. Chatbots

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