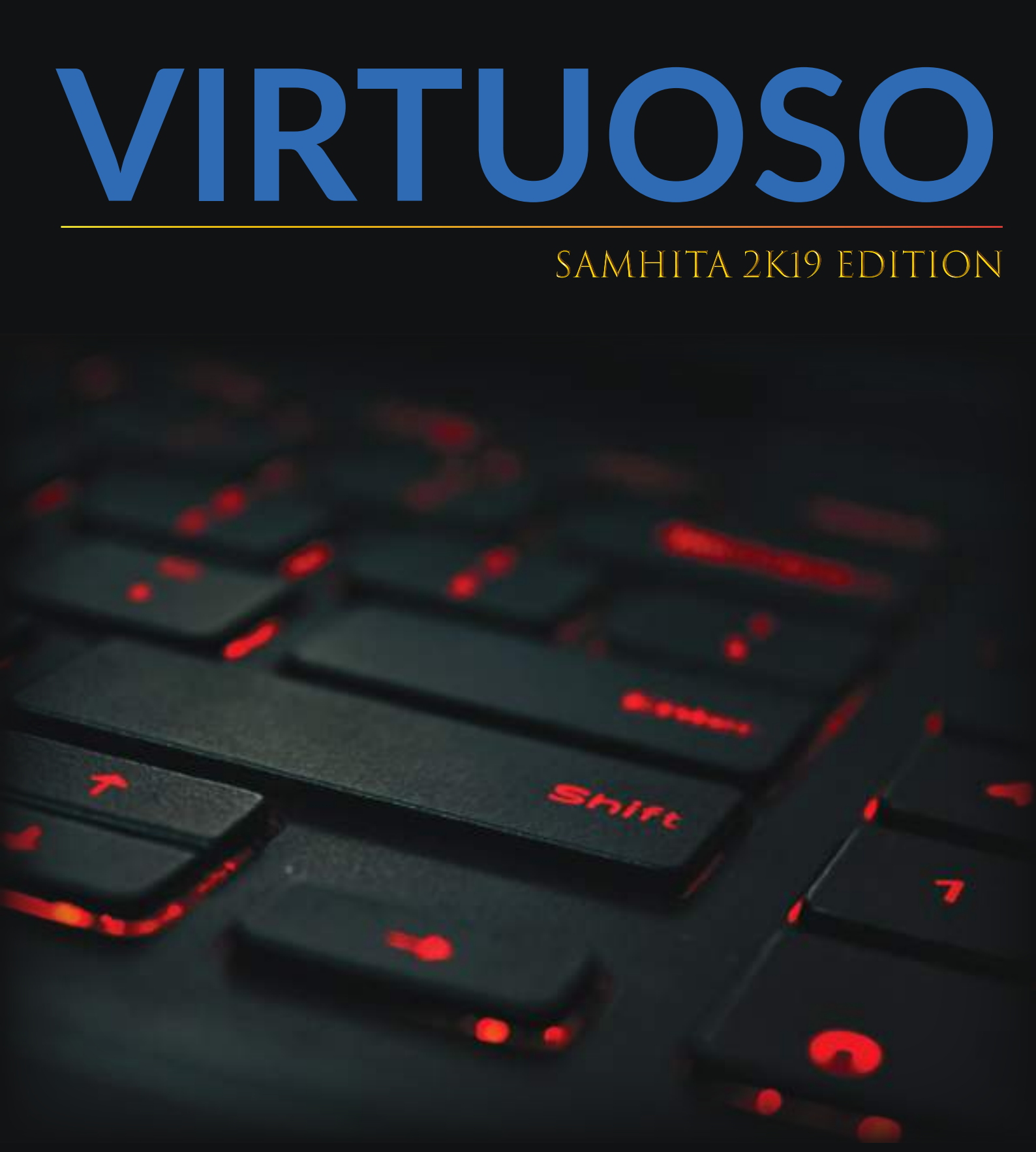
VIRTUOSO

SAMHITA 2K19 EDITION



DEPARTMENT OF INFORMATION TECHNOLOGY,
MIT CAMPUS,
ANNA UNIVERSITY.

HOD's Note

Information technology, one of the fastest growing technologies, has become a strategic function in every organization and lands its foot in every walk of our life.I'm very pleased to support Information Technolgy Association's magazine, 'Virtuoso'. I am confident that this magazine will stand as a testimony for the student's technical as well as creative insights.

Dr. Dhananjay Kumar,
Head , Department of Information Technology

Editor's Note

Dear Readers,

I, on behalf of Virtuoso Team proudly present to you the third edition of "VIRTUOSO" ITA student magazine.Our team of editors,designers and photographers have put in their heart and soul to kindle the virtuoso of IT students.I thank the contributors for throwing in with us and to you our readers,for making it all real.

Happy Reading!

DR.B.Lydia Elizabeth(Assistant Professor).
Department of Information Technology.

DEPARTMENT OF INFORMATION TECHNOLOGY MISSION AND VISION

Vision of Information Technology Department

The Department of Information Technology strives to produce competent IT professionals who are technically sound and ethically strong for the industries, community and research organizations at the national and international levels through excellence in teaching, research and consultancy.

Mission of Information Technology Department

Information Technology Department shall impart to the educational, economic and social Development

1. By developing the students, strong in engineering fundamentals, proficient in technical skills, strong in ethical values and knowledgeable in applying the skills for the welfare of the society through competent faculty.
2. By providing state of the art facilities in which higher studies and research flourish amongst the students.
3. By enhancing the collaborative partnership between Industry, Fl&D organization and preparing the student to be an entrepreneur.
4. By inculcating social welfare in students, to provide service to the nation as good human being.

Program Educational Objectives

Bachelor of Technology in Information Technology curriculum is designed to prepare the graduates having attitude and knowledge to:

1.Have successful professional and technical career in Information Technology

2.Have core competence in basic engineering and mathematics to formulate, analyze, and solve hardware or software engineering problems.

3.Train student community with good knowledge in core areas of Information Technology and related engineering so as to analyze, design, and synthesize data and technical concepts to produce novel solutions for the real life problems.

4, Inculcate in students to maintain high professionalism and ethical standards, effective oral and communication skills, to work as part of teams on multidisciplinary projects and diverse professional environment.

5. Practice and inspire high ethical values and technical standards.

BLOCK CHAIN

Blockchain is an algorithm for Distributed Ledger Technology (DLT). DLT and blockchain as a concept can be used in varied applications beyond crypto-currency network like, real estate, logistics, banking and financial ector.Moderntechnology allows people to communicate directly.By using Math and Cryptography blockchain provides an open decentralised database of every transaction involving value,money,goods,property,work or even votes.

What is Blockchain used for?

A blockchain is a decentralized, distributed and public digital ledger that is used to record transactions across many computers so that any involved record cannot be altered retroactively, without the alteration of all subsequent blocks.

Blockchain as Google Docs

"The traditional way of sharing documents with collaboration is to send a Microsoft Word document to another recipient, and ask them to make revisions to it. The problem with that scenario is that you need to wait until receiving a return copy before you can make other changes.That's how banks maintain money balances and transfers; With Google Docs (or Google Sheets), both parties have access to the same document at the same time.It is like a shared ledger, but it is a shared document. The distributed part comes into play when sharing involves a number of people.You don't need a blockchain to share documents, but the shared documents analogy

There are three Popular types of Blockchains you need to know:

1)Permission less blockchain.
2)Public Permissioned Blockchain.
3)Private Permissioned Blockchain.

*https://www.btcnn.com/blockchain-news

Bitcoin Blockchain

A global network of computers uses blockchain technology to jointly manage the database that records Bitcoin transactions. That is, Bitcoin is managed by its network, and not any one central authority.

A SMART CONTRACT IN BLOCKCHAIN

A smart contract is "a computerized transaction protocol that executes the terms of a contract". A blockchain-based smart contract is visible to all users of said blockchain. However, this leads to a situation where bugs, including security holes, are visible to all yet may not be quickly fixed.

Source: https://www.youtube.com/watch?v=OuVbc6jocyM

HOW DOES BLOCKCHAIN WORK?

In order to understand the working of Blockchain let us first understand the working of Bitcoin. However, Blockchain technology is applicable to any transaction taking place online

1.An individual in the Blockchain network requests for a transaction.
2.This request for the transaction is then displayed to the other members(i.e.- Nodes).
3.The network of Nodes by verified algorithms then approves the transaction.
4.After the approval of the request by the nodes, they complete the transaction.
5.Immediately after the transaction, a new block is added to Blockchain network which is immutable.
6.That verified transaction adds with other transaction making a new block of data.

Any person who wants to add information in the Blockchain must have a public address and a unique key to log in, private key signs the transaction. Every time you buy or sell Bitcoin, Blockchain adds that record. This information is highly secure as it duplicates thousands of time and any hacker need to control more than 51% of the nodes to make any modification.

Blockchain technology is like the internet in that it has a built-in robustness. By storing blocks of information that are identical across its network, the blockchain cannot:
1Be controlled by any single entity.
2.Has no single point of failure.

-M.ABINAYA.
2016506003.

POETRY CORNER

ILLUSION

In this world full of paper ,
why are you alone true?
Why do you always make me feel high ,
even though you feel low
Why do you always hide your tears behind a lame joke,
Like why Don't you want me to know?
When did I start liking nights more than days,
when "people sleep" they say
Why can't I get more dosage of you in me,cuz I'll die?
Then I must be dead long ago...they lie
Why is the world so dark without you my little spark
How do I hear you smile, though we are separated by miles
People say everything changes because of time,
but I'm happy you are still mine
How lucky am I.

-SURYA THIYAGARAJAN
2018506130

ETHICS OF LIFE

Isn't your life's like a rubber band,
But it hardly fits into your hand .
It extends upto your stretch;
But hardly finds any meaningful fetch !
Undisturbed when kept aside ;
But hindered by a very small sight !
One might feel it as tensile;
But it might tend to be in exile !
May you move it with a wish ;
But it might push you with a swish !!

-R. KISHORE KUMAR
2017506619

The poem is partially a haiku style sonnet , it basically consists of 10 lines with approximately six word length and vibrant title ETHICS OF LIFE . It's a simile as life with reference to a rubber band and then followed by metaphoric references . It is grammatically assessed with formal dictionaries accepted vocabularies , so anyone with a deep passion of reading can easily not just understand but feel my poem's flow through their lifestyle!!

techquiz

1. Compute XOR without using xor(^) operator

2. Which of the following data structure is useful in traversing a graph by bfs?
a. Stack b.List c.Queue d.None

3. Check a no IsPowerOfTwo
a. (x & (x - 1)) == 0
b. (x| (x-1))==0
c. (x != 0) && ((x & (x - 1)) == 0);
d. a and c

4.int main()
{
int a = 5, b = 6, c, d;
c = a, b;
d = (a, b);
cout << c << endl << d;
return 0;
}

5. Relation R has eight attributes ABCDEFGH. Fields of R contain only atomic values. F = {CH -> G, A -> BC, B -> CFH, E -> A, F -> EG} is a set of functional dependencies (FDs) so that F+ is exactly the set of FDs that hold for R. How many candidate keys does the relation R have?

6.How can you set a cookie visibility to a local storage?
a. /
b. %
c. &
d. all the above

Answers
1.(x|y)&(~x|~y) 2.c 3.d 4. 5 and 6
5.4 6.a

An interview with our Senior

This year, the number of seniors getting placed in companies has increased manyfold. Many seniors got placed with high salary packages. It is not an easy task to tackle all your fellow contestants and put forth your best to show the interviewer that you are the perfect man/woman for the job. Here, we had an interview with ***Ms.Roshini R,*** *a senior who got placed in* ***VISA.***

1. What was your placement strategy?

Cover up the basic stuff. Start practicing coding from websites like GFG and Hackerrank. Give importance to aptitude questions too.

2. Tell us about your Visa interview process?

Was a very relaxed and peaceful one. They concentrated mostly on java part (strings). They expected written or solved explanation for every answer.

3. How did you manage to maintain your CGPA and do you think CGPA is important for placements ?

Remain consistent in your studies. Yes, CGPA is important but its just a filter for placements. It's gonna decide whether you are in the race or not. Once you are in, its your problem solving skill that's gonna help you. 8.5 and above is a decent one. Maintain this and start developing your skills.

4. What hurdles did you face to reach your aim and how did you overcome them?

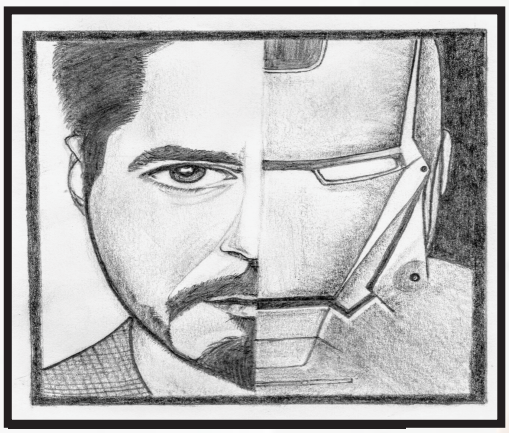
Writing solutions for the problem is not important, writing an efficient answer makes you stand unique from others. This is one hurdle which everyone needs to concentrate. Thinking efficientanswer that works for all test cases is important.

5. Tips to juniors?

*Practice is the key to success. "**Hardwork beats talent when talent doesn't work hard**". Though you are not a topper, not a good coder ,still you can ace in your placements by your hardwork and consistent effort. All the best!*

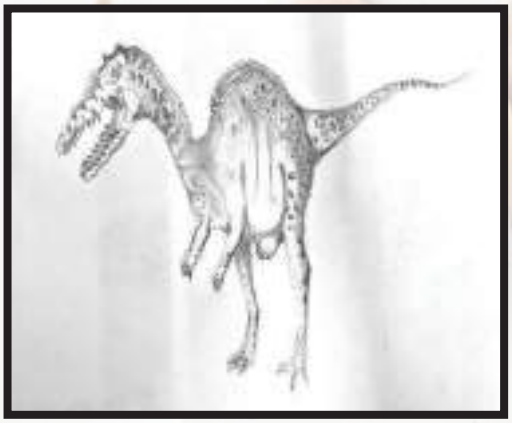
Interviewed by : **Jitta Sai Chaitanya**

ARTISTRY



SANTHOSH Y
2018506107

PONNARASI P
2018506075



BHARATH RAJ N
2018506024

SOWMYA S
2018506122

SURYA PRAKASH
2018506129

HARINI PRIYA D
2017506527

JANANI T
2018506040

SWETHA S
2018506134

SPACEX

Imagine a situation where every airplane is thrown into the ocean after dropping its passengers. It would be stupid right? And also a huge waste of resources, money and craftsmanship.

This is the exact same thing that happens to all the space launch vehicles, especially the first stage rocket booster and the strap on boosters. This leads to a lot of work before every launch to remake them. Then came a revolutionary juncture in the history of space launches when Elon Musk, an Entrepreneur introduced a transition that we haven't been in since the moon landing. He invested money to start a space agency called SpaceX.

SpaceX, unlike the other space organizations funded by government, had limited fundings. They had to minimize their costs as much as they could. There came a point when the agency had just enough money for a single launch and they had to succeed to continue their journey and guess what, they did it!

SpaceX wanted to reuse their rockets after every launch. Their idea was to land the strap-on booster near the launch pad and the main booster at a drone ship about 500 Kms from the launch site as it had to travel longer distances. Their strap-on boosters had 9 Merlin Vacuum engines to launch their vehicle and three of those to reduce the velocity of the booster during the landing, re-igniting seconds before the touch down at full thrust. After numerous failures, they successfully landed their boosters, both on land and drone ship and contributed a lot of telemetric data to improve the future versions. This marked the start of a new era of space Exploration. This move to land the rocket back after launch can cut down the costs by a remarkable amount.

It is quite amazing to watch the live feed from the rockets of SpaceX. ISRO has a different approach to cut down costs, yet it is amazing to watch a rocket booster land. The amount of Engineering done to make it all possible is commendable.

Kavin V
2018506050

AI in Media and Entertainment

The Media and Entertainment industry is one of the vastly growing industries across the world. It contributes more than a trillion dollars to the economy. The M&E industry operates in various forms like films, TV shows, advertisements, marketing, digital streaming services etc. In recent years, the industry faced a slight dip in the growth rate which prompts many companies to turn to AI technologies to ramp up their sales.

Let us see the exciting applications they have in different domains one by one. There has been an increase in the amount of Science fiction movies released now-a-days.Not only do they show us about science fiction, but in fact they deploy science fiction like technologies in their production. For example, let us consider a Science fiction movie like Avatar which is heavy in visual effects and computer graphics. They need to provide us with lifelike imagery. An example of such a task would be repetitive things like the frame-by-frame changes needed to make digital characters appear more realistic. To make those changes by hand would cost them a lot of time.

Source:https://cghow.com/making-of-thanos

In the recently released "Avengers: Infinity War" movie, AI was used to map the actor's (Josh Brolin) face so accurately that they were able to map every wrinkle and render those same features onto the character images of Thanos. More specifically, they used a neural network trained on high-resolution scans of Brolin's face to track his expressions down to individual wrinkles, then used another algorithm to automatically map the resulting face renders onto Thanos' body before animators went in to make some finiing touches. With the help of artificial intelligence and motion capture technology (mapping the actor's movement and expressions onto a 3d model), what once took weeks to do can now be rendered in near real-time.

Also, when a scene involves an enormous number of people acting, it is not practically feasible to accommodate everyone to the studio to film it. So, now with the assistance of computers and algorithms, hundreds or even thousands of virtual actors can be used to fill sets. An excellent example of this was seen in the movie "Superman Returns." One scene took place in a baseball stadium that had a 50,000 person crowd.

When a movie is in the script stage, it must pass through several read-throughs before it is made into a film. An artificial intelligence called Scriptbook currently claims to have predicted that it would not have recommended the production of 22 of Sony Pictures' biggest flops in the last three years. Using these intelligent systems would allow us to predict the future possibilities for success and failure of a movie. If systems like these can be perfected, the movie industry could potentially save billions of dollars a year.

If AI continues to proceed on, actors will be able to play the roles of nearly anything that Hollywood can imagine, and there becomes little need for the actor to sit in makeup for several hours wearing prosthetics or heavy equipment.

The next time you sit down to watch a movie, the algorithm behind your streaming service might recommend a blockbuster that was written by AI, performed by robots and animated and rendered by a deep learning algorithm.

Source: https://medium.com/@jonathan_hui

The next sector AI is concentrated on is Marketing and advertising. The marketing and advertising sector includes visual design, film promotion and advertising. A machine learning algorithm trained with data such as text, stills and video segments can extract language, objects and concepts from its training resources and suggest marketing and advertising solutions to improve efficiency. Alibaba's Luban is an AI designer that can create banners thousands of time faster than a human designer. On China's online shopping festival "Singles Day" in 2016. Luban generated some 8000 different banner designs per second and 170 million banners in total. The record output would of course be impossible for human designers to process in one day.

IBM used their AI system Watson to help 20th Century Fox edit a trailer for the horror movie "Morgan." The research group trained the AI system to analyse and classify input "moments" from visual, audio, and other composition elements in 100 horror movies to learn what kind of "moments" should appear in a standard horror movie trailer. Watson needed just 24 hours to create a six-minute movie trailer based on the horror elements, visuals, sound, story and the suspense which may have taken a human professionals weeks to produce.

Generative adversarial Neural networks (GANs) is a special type of network used recently for generating artworks. For example look at the image of faces given. It's harder to believe that they are not real people and in fact GAN generated images after training the network from a High quality face dataset. Not only does AI stop there. NVIDIA has pubished research papers on how to convert a 2d image of a face to a 3d model.

Recent publications suggest that we could also control the motion of the 3d model from a source and transferring the motion to the model. We could even train the network to provide lip movements to the model matching an audio without acting it out. Deep reinforcement techniques are applied to train the 3d model to move in a virtual environment without being explicitly taught.

AI also finds its place in music production. We could synthesize a complete music score using just neural networks. But these sounds can easily be distinguished from human created music. It hasn't grown to a larger extent but still has huge scope for development. So, as seen from cases above AI is ready to produce a full movie without human intervention in the coming years. Although it now seems like Science fiction, it will become possible with technological advancements in the future like Quantum computing, which could exponentially increase the compute power of traditional systems if fully realized.

As an effort towards achieving enormous compute power NVIDIA has released new family of graphic cards called RTX where applications built on the RTX platform bring the power of real-time photorealistic rendering and AI-enhanced graphics, video and image processing, to enable millions of designers and artists to create amazing content in a completely new way.

As the saying goes "With great power comes great responsibility", we also should be aware of the potential threats AI causes to the people not only in M&E industry but in every other industry possible. It is in our hands to make best use of AI such that it only eases the job of the professionals without causing any harm to their jobs. So, what more? Get ready for an exciting future!!!

Ajay Kumar S
2015506003

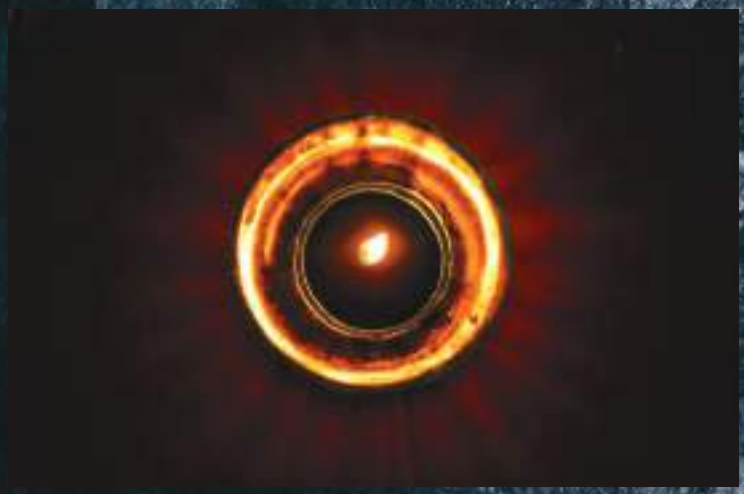
PHOTOGRAPHY

S. SIVASANKAR
2018506119

GOPI ASHOKH
2018506033

KANNAN BS
2018506047

PHOTOGRAPHY



SARAN RTS
2016506075

PONNARASI
2018506075

Source: https://www.forbes.com/sites/allbusiness/2018/10/20/machine-learning

MACHINE LEARNING

-

-Sowbagya(2017506598)

Machine Learning is the idea of learning from examples and experience, without being explicitly programmed. Instead of writing code, you feed data to the generic algorithm, and it builds a logic based on the data given.ML enables computers to find insightful information by using algorithms that iteratively learn from data.

The core objective of a learner is to generalize from its experience. Generalization is the ability of a learning machine to perform accurately on new, unseen examples/tasks after having experienced a learning data set.

For eg, one kind of algorithm is a classification algorithm. It can put data into different groups. The classification algorithm used to detect handwritten alphabets could also be used to classify emails into spam and not-spam.

Why, Machine Learning?

Machine Learning is a field raised out of Artificial Intelligence (AI). Using AI, we wanted to build better and intelligent machines. But except for mere tasks like finding the shortest path between point A and B, we were unable to program more complex and constantly evolving challenges. There was a realisation that the only way to be able to achieve this task was to let machine learn from itself. This is similar to a child learning from itself. Hence, ML was developed as a new capability for computers. And now ML is present in so many segments of technology, that we don't even realise while using it.

Types of Machine Learning

There are three kinds of Machine Learning Algorithms.

a. Supervised Learning

b. Unsupervised Learning

c. Reinforcement Learning

Supervised Learning

Supervised learning algorithms build a mathematical model of a set of data that contains both the inputs and the desired outputs. The data is known as training data, and consists of a set of training examples. Each training example has one or more inputs and a desired output, also known as a supervisory signal.

In the mathematical model, each training example is represented by an array or vector, and the training data by a matrix. Through iterative optimization of an objective function, supervised learning algorithms learn a function that can be used to predict the output associated with new inputs.

Supervised learning algorithms include classification and regression.

Unsupervised Learning

Unsupervised learning algorithms take a set of data that contains only inputs, and find structure in the data, like grouping or clustering of data points. The algorithms therefore learn from test data that has not been labelled, classified or categorized. Instead of responding to feedback, unsupervised learning algorithms identify commonalities in the data and react based on the presence or absence of such commonalities in each new piece of data.

Reinforcement Learning

A computer program will interact wih a dynamic environment in which it must perform a particular goal (such as playing a game with an opponent or driving a car). The program is provided feedback in terms of rewards and punishments as it navigates its problem space. Using this algorithm, the machine is trained to make specific decisions. It works this way: the machine is exposed to an environment where it continuously trains itself using trial and error method.

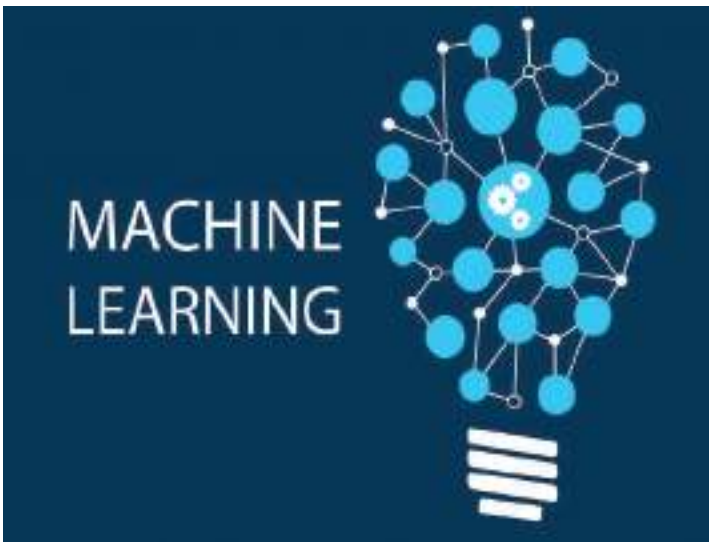
What level of Math do we need?

The answer to this question is multidimensional and depends on the level and interest of the individual.

Here is the minimum level of mathematics that is needed for Machine Learning Engineers / Data Scientists.

1. **Linear Algebra** (Matrix Operations, Projections, Factorisation, Symmetric Matrices, Orthogonalization)
2. **Probability Theory and Statistics** (Probability Rules & Axioms, Bayes' Theorem, Random Variables, Variance and Expectation, Conditional and Joint Distributions, Standard Distributions.)
3. **Calculus** (Differential and Integral Calculus, Partial Derivatives)
4. **Algorithms and Complex Optimisations** (Binary Trees, Hashing, Heap, Stack)

There are several big pushes in ML. Every company wants to do machine learning on a bigger scale and for less cost. Cloud service providers will continue to compete to drive down the costs and increase the capacity of machine learning systems. We've seen Google's cloud services grow from storage to include a suite of machine learning tools across language, speech and images. Amazon's AWS and Azure have similar offerings. The end result is a democratization of large scale machine learning tools and infrastructure.



Source:https://cdn-images-1.medium.com/max

தனிப்பெருந்துணையே

தனிப்பெருந்துணையே..

இன்பத்தில் முழ்கினேன்,
மனிதன் கைகொடுத்தான்.
இன்னலில் வாடினேன்,
அப்போது கைவிட்டான்.
நிரந்தரம் தேடினேன்,
நட்பை வேண்டினேன்.
கிட்டியது அனைத்தும்!
நெறிகள் அறிந்தேன்!
அறிவை வளர்த்தேன்-அதை
மற்றவர்களுக்கும் அளித்தேன்
வாழ்வின் காரணம் தெரிந்தேன்
கடமை புரிந்தேன்!
விண்ணை முட்டும் புகழை
எட்டிப் பறித்தேன்
தொடுவானமும் தொட்டு விடும்
தூரமென்று உணர்ந்தேன்.
தனிப்பெருந்துணையாய் புத்தகமே
நீ அறவணைத்து எனைஏற்றதால்!!

- திருமகள் திவ்யா
2017506613

நடுநிலையான் எண்ணங்கள்

நடுநிலையான் எண்ணங்கள்

விளைவுகள் எனக்கு நன்மை தருமா?
வெற்றி நிச்சயம் கிட்டுமா?
காண்போர்கள் கண் திகைத்துப்போய்
வாயடைத்து பார்ப்பார்களா?
இந்த கேள்விக்கும் உங்கள் உழைப்பிற்கும் ஏதேனும்
உறவு உண்டோ?

வெற்றிக்கு முன் பயிற்சி தான் முக்கியம்
முடிவுகள் அல்ல .
எதிர்பாராமல் முழு மனதுடன் பயிற்சியை தொடங்கு
உன் வெற்றி அந்த கேள்விகளுக்கு பதிலளிக்கும்!!

- ஜெ.ரம்யா
2016506065

இராணுவ வீரனின் மரணம்

குடும்பத்தை மறந்து ,தன் உயிரை துறந்து
நாட்டிற்காக உன் உயிரை அற்பணித்தாயே !!

வீரரே
நான் உன் துணிச்சலுக்கு தலைவணங்குறேன்!!
காட்டுத்தீ போல் உன் கண்ணில்
எரியும் தேசத்தீ
என்றுமே அணையாமல் போராடிக்கொண்டுகிறாயே!!
வீரரே
நான் உன் நாட்டுப்பற்றை கண்டு
வியக்கிறேன்!
நீ இந்த மண்ணிற்கென சிந்தும்
ஒவ்வொரு துளி இரத்தமும்
நூறாயிரம் ஆண்டுகளுக்கு முரசரையும் !!
வீரரே
நீ கொல்லப்படவில்லையடா
வீர மரணம் அடைந்தாய்!!

எத்துனை இரவுகள் நீ கண்விழித்து காத்தாய் எம்மை
இனிவரும் நாட்களில் நீ கண்மூடி தூங்கடா!!

- நித்யஸ்ரீ
2018506074

பெண்

காலத்தை வெல்பவளாய்
பாசமான அம்மாவாய்
அன்பான மனைவியாய்
ஒழுக்கமான மாணவியாய்
பாராட்டும் அக்காவாய்
மகிழ்வுட்டும் தங்கையாய்
அரவணைக்கும் மகளாய்
அனைவரையும் அம்மாவாக
கருதும் மருமகளாய்
கலந்துரையாட தோழியாய்
இரக்ககுணத்தின் வெளிச்சமாய்
அழகின் உச்சகட்டமாய்
திகழ்பவளே பெண்.

- அபிநயா மா.நா
2018506004

INDUSTRY 4.0

- Parthiban Suresh (2017506571)

"The day has come where digital technology wakes me up, replacing my mother". Today we are opening our eyes for the day by glimpsing at phone notifications. Today's situation is far more different than the past. The day the homo sapiens stepped into this world, the hunt for necessities started. In this journey, mankind has encountered a wide range of failures and discovered many things by trial and error method. It all started with the 'INDUSTRIAL REVOLUTION' which played a vital role in the development of such technologies and facilitated the completion of jobs in a shorter time span.

The First Industrial Revolution (1760-1840) was initiated by Thomas Newcomen in England, when he invented the steam engine in 1712.Transportation became much easier. The Second Industrial Revolution (1860-1914) witnessed the expansion of electricity, petroleum and steel. The second half of the twentieth century made the way to progress by giving rise to the Third Industrial Revolution. In this phase, man developed new communication methods, technically enhanced the computers and the Internet started blooming.

Presently, the Fourth Industrial Revolution is trending as its agenda is to progress in the fields of IoT, AI, Machine learning, Robotics, Big Data, Cloud Computing, Bit Coins, Block Chains, 5G, Edge Computing, Smart Factories, Cyber Physical Systems, Augmented Reality, Simulation, Horizontal and Vertical System Integration, Singularity Network etc. Hence, the desired output is said to be a Digitalized world. AI has already vastly transformed how business operates. IoT is the method of connecting everything around us to the internet, to be controlled by Cloud based servers. Block Chains have the power to facilitate the seamless sharing of information between governmental agencies, reduce corruption, and increase trust & confidence.5G is expected to handle 1000 times more traffic than 4G and could be up to 10 times faster. Edge Computing has the processing power to support the mounting number of IoT connected devices. Governments all over the world are calling for a capital investment in this revolution. But technological development also comes with its biggest baggage- Data Security. Innovative solutions are being designed everyday to overcome security issues.

Where are we, at present?

Source : https://www.google.com/search?tbm=isch&q=s phia+robot&chips=q:sophia+robot,g_1:

She is Sophia, the Humanoid Robot created by Hanson Robotics. Her advanced design enables her to interpret any question along with facial expressions. This, my friends, is the magnitude of development that we have seen until today and there is a lot more innovation ahead of us.

LITTLE RIDDLES

1.A one-seeded fruit I may be, but all of your calendars are full of me. What am I?

Answer: Dates.

2.What is the first thing you see in an emergency but you only see it **twice in a lifetime?**

Answer: The letter 'e'.

3.A pizza weighs ten pounds plus half its own weight. How much does the pizza weigh?

Answer: 20 pounds. 10 pounds plus half of 20 pounds equals 20 pounds.

4.If you throw me out of a window, you'll leave a grieving wife. If you leave me in the middle of the door, you might just save a life. What am I?

Answer: The letter "N".

5.How many bricks does it take to complete a 2,000 square foot **building made entirely of brick?**

Answer: Only one, the last brick completes the building.

AIR TRAFFIC CONTROL

We all would have probably heard about this term atleast once in our lives, but we're very much familiar only with someone known as "pilots" ie the drivers but not aware of who is the CPU of these 'pilots' ! Here we're going to have a small overview of who is that CPU mentioned above. Yeah , it's none other than an Air Traffic Controller, any flight -be it on ground or air , it's running because of an ATC and not only because of a pilot , this is the only career at the present decade that fails to be satisfied by robots and can be met success only by a man . Well , if you people are really interested in coding just try to give a programme for a robot to satisfy the needs of an ATC , haha trust me guys it's not gonna work out cause it's already tried and tested severally around the world and failed to accomplish its duty.

Let's talk about the duties of an ATC now , basically his/her job is to keep a personal interaction with all the pilots and quite a lot with ground staffs and airport bus drivers as well , so in a modern airport any flight that decents 1500ft will automatically get connected to ATC tower and till then it's handled by APPROACH CONTROL DEPARTMENT which is a closed room with large screens showing all the that airport above 1500ft who guides the flights of this altitude to maintain a particular speed and altitude And also requests for "go arounds " in case of heavy traffic or queues for landing .

To prevent collisions, ATC enforces traffic separation rules, which ensure each aircraft maintains a minimum amount of empty space around it at all times. Many aircraft also have collision avoidance systems, which provide additional safety by warning pilots when other aircraft get too close.

In many countries, ATC provides services to all private, military, and commercial aircraft operating within its airspace. Depending on the type of flight and the class of airspace, ATC may issue instructions that pilots are required to obey, or advisories (known as flight information in some countries) that pilots may, at their discretion, disregard. The pilot in command is the final authority for the safe operation of the aircraft and may, in an emergency, deviate from ATC instructions to the extent required to maintain safe operation of their aircraft.

In 1920, Croydon Airport, London was the first airport in the world to introduce air traffic control.

In the United States, air traffic control developed three divisions. The first of air mail radio stations (AMRS) was created in 1922 after World War I when the U.S. Post Office began using techniques developed by the Army to direct and track the movements of reconnaissance aircraft. Over time, the AMRS morphed into flight service stations. Today's flight service stations do not issue control instructions, but provide pilots with many other flight related informational services. They do relay control instructions froSm ATC in areas where flight service is the only facility with radio or phone coverage. The first airport traffic control tower, regulating arrivals, departures and surface movement of aircraft at a specific airport, opened in Cleveland in 1930. Approach/departure control facilities were created after adoption of radar in the 1950s to monitor and control the busy airspace around larger airports. The first air route traffic control center, which directs the movement of aircraft between departure and destination was opened in Newark, NJ in 1935, followed in 1936 by Chicago and Cleveland.

The day-to-day problems faced by the air traffic control system are primarily related to the volume of air traffic demand placed on the system and weather. Several factors dictate the amount of traffic that can land at an airport in a given amount of time. Each landing aircraft must touch down, slow, and exit the runway before the next crosses the approach end of the runway. This process requires at least one and up to four minutes for each aircraft. Allowing for departures between arrivals, each runway can thus handle about 30 arrivals per hour. A large airport with two arrival runways can handle about 60 arrivals per hour in good weather. Problems begin when airlines schedule more arrivals into an airport than can be physically handled, or when delays elsewhere cause groups of aircraft – that would otherwise be separated in time – to arrive simultaneously. Aircraft must then be delayed in the air by holding over specified locations until they may be safely sequenced to the runway.

ATC controllers are responsible for runway clearance, ground taxi way clearance and queue clearance and all the instructions are given step by step with effective and intense communication with pilots.

“ FLIGHT 6e 2394 RUNWAY CLEAR FOR TAKEOFF ”

R Kishore Kumar
2017506619

Achievements

Kamalnath

- Won Gold in National School Beach Volleyball Tournament
- Won Bronze in International School Beach Volleyball Tournament

Thirumagal Divya

- Won 1st prize in “Thooval” Tamil poetry competition held by Tamil Sangam IIT Madras

Kalaivani

- Won 1st prize in Doodle War at Inksanity conducted by MIT Quill

MUTEX '18

Mutex, an intra-college symposium hosted by the Department of Information Technology is comprised of workshops and a mixture of technical and non-technical events.The vision of Mutex is to showcase the intellect and talent of budding engineers of Madras Institute of Technology through technical events and to provide them industry standard workshops and internship opportunities.
Mutex'18 was held between September 29 and October 5 , 2018. Around 800 students actively participated and won many cash prizes.

List of events:
Online Programming Contest
Coffee with Java
Onsite Programming Contest
Debugging Contest
Reverse Coding
Pursuit of Prodigies
Street Coding Contest
Hack it
Photography
Online Treasure Hunt
Math-O-Mania
Quiz
Gaming

Workshops:
MachineLearning
Placement Training

MUTEX

DEPARTMENT OF INFORMATION TECHNOLOGY

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