



Vidya Vikas Education Trust's

Universal College of Engineering

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An Initiative By



Department of Information Technology

#SATYAVACHAN

Start where
you are, with
what you have

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ARTICLES

**EACH ONE
TEACH ONE**

ACHIEVEMENTS

**UP COMING
EVENTS**

Designed by Mrs. Mudra Doshi & Mrs. Sanketi Raut

Blockchain Technology: What Is It Good for?

In 2008, an author using the pseudonym Satoshi Nakamoto wrote a white paper describing Bitcoin, a new decentralized cryptocurrency.⁸ Unlike past attempts at forming a cryptocurrency— attempts that relied on reestablished trusted entities for the system to operate correctly—Bitcoin's design runs on the open Internet, with no one in charge, while maintaining tight security. Goal of this article is to answer these questions thoroughly, provide a holistic overview of blockchain technology that separates hype from reality, and propose a useful lexicon for discussing the specifics of blockchain technology in the future.

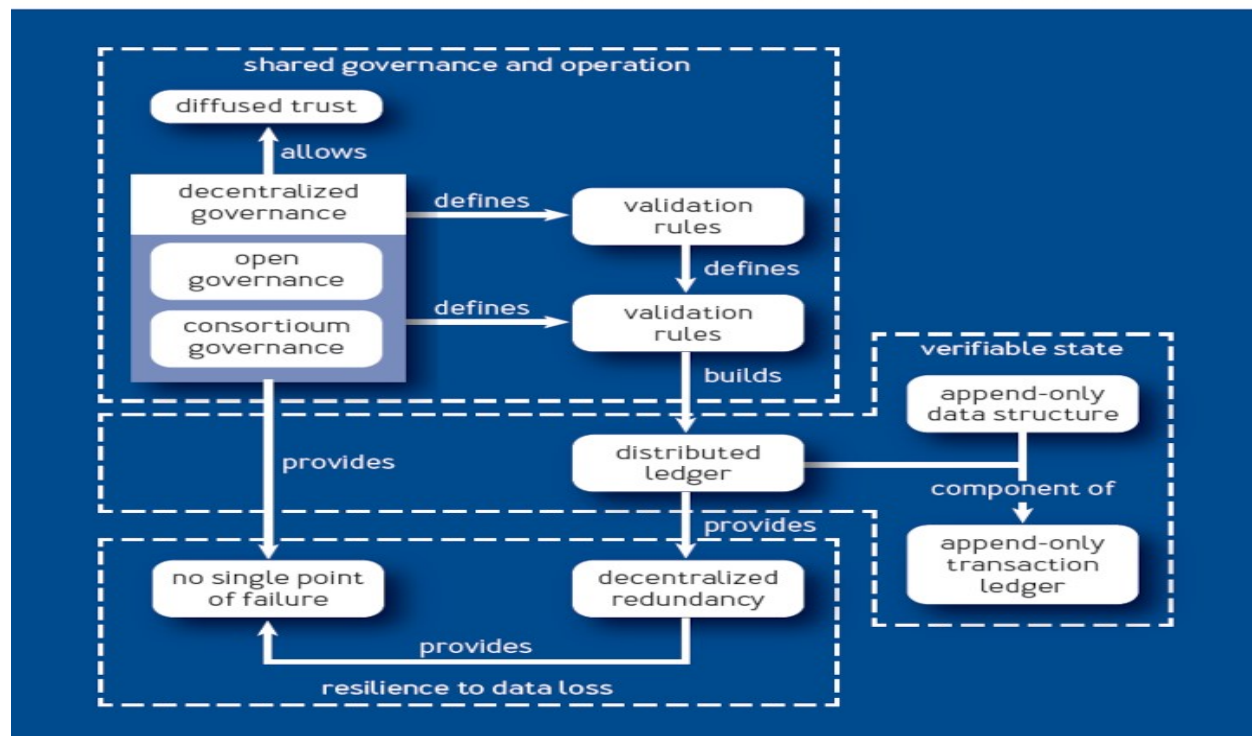
Methodology

While there is valuable information to be learned from industry, analyzing these sources also brings challenges, including (1) imprecise terminology and errors in knowledge; (2) inclusion of hype; and (3) researcher bias.

Results

- Technical properties—the components that make up blockchain technology. Examples include decentralized governance, a consensus protocol, and an append-only transaction ledger.
- Capabilities—the high-level features provided by the technical properties. Examples include automatic executions of code (i.e., smart contracts), internal auditability, and access control.
- Technical primitives—the building blocks used to construct the technical properties and capabilities of blockchain technology. Examples include timestamps, hash chains, and peer-to-peer communication.

FIGURE 1: TECHNICAL PROPERTIES FOR BLOCKCHAIN TECHNOLOGY



Ref: <https://queue.acm.org/detail.cfm?id=3376896>

- MRS. MUDRA DOSHI

(ASSISTANT PROFESSOR)

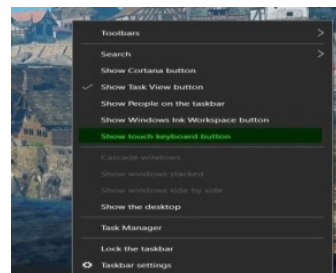
[How to enable and use virtual input devices in Windows 10](#)

For many of us, working from home during the COVID-19 pandemic means working with the reality of children and pet interactions and interruptions to our workflow. Obviously, it can be difficult to type with a squirming (or purring) creature on our lap, which is where an alternative virtual interface can save the day.

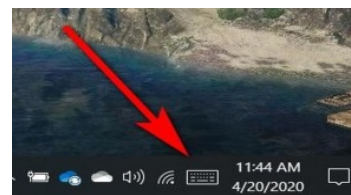


Enable and use virtual input devices in Windows 10

Enabling access to the built-in Windows 10 virtual interface is about as simple as it gets for this operating system. Right-click on any open area of your Taskbar and select the "Show touch keyboard button" item from the context menu.



Showing the touch keyboard button means that you should now have a keyboard icon located in the taskbar tray on your Windows 10 desktop, as shown in figure.



Clicking that icon in your taskbar will bring up a virtual keyboard, as shown in Figure. You can click the virtual keys with your mouse or, if you have a touch display, you can tap the keys with your finger. Click the X in the upper right corner to hide the virtual keyboard again.



By choosing one of the icons located in the upper left-hand corner of your virtual keyboard, you can change the default settings. There are three different styles of virtual keyboards, including a full QWERTY keyboard. You can also opt to enable the microphone to open the dictation interface or one of the touchpad options to move to an interface that supports touch displays.

Beyond the type of interface and style of keyboard, there is also an option to choose a different language for your virtual keyboard.

Ref: <https://www.techrepublic.com/article/how-to-enable-and-use-virtual-input-devices-in-windows-10/>

MRS. SANKETI RAUT
(ASSISTANT PROFESSOR)

A Short Introduction To Data Visualization

- In the field of data science, data visualization is undoubtedly the top word today

What is data visualization? : Data visualization is the graphical representation of information and data. By using visual elements like charts, graphs, and maps data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data. In the world of Big Data, data visualization tools and technologies are essential to analyze massive amounts of information and make data-driven decisions.

Why do we need data visualization? : We need data visualization because a visual summary of information makes it easier to identify patterns and trends than looking through thousands of rows on a spreadsheet. Charts and graphs make communicating data findings easier even if you can identify the patterns without them.

The impacts of Data Visualization are as follows:

The impacts of Data Visualization are as follows:

Display of critical data in visually interactive forms.

Can display trends over any period of time.

Can grasp large chunks of complex data in an easy visual form.

Prevents chances of errors in decision-making.

Helps in identifying key features that impact business results.

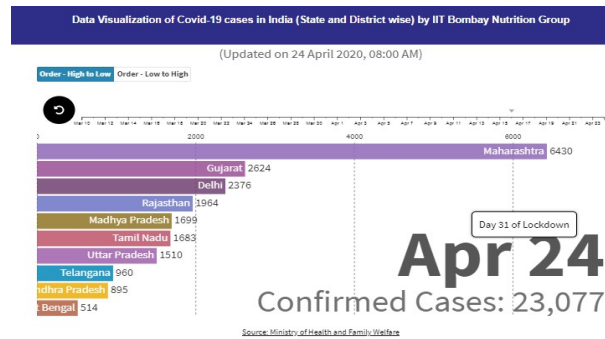
Helps in developing a forecast for future steps to be taken.

Importance Of Visualization Amid Massive Data:

As cases of Covid-19 proliferate across the globe, so has data associated with it. This includes information on the number of affected patients, the number of people they are likely to infect, equipment that is available for healthcare workers, as well as the death and recovery rates, among others. This data needs to be efficiently conveyed to people, since in the event of a pandemic like this, intuition cannot substitute for facts to understand how the spread is advancing. The approach that is needed should involve analyzing, sharing and leveraging data.

Here, visualizing the data can help explain the developing events in a clear and succinct way for people to interpret data well, tease out patterns, and pick up on trends.

“Data visualization is a huge field with many disciplines. It is precisely because of this interdisciplinary nature that the visualization field is full of vitality and opportunities.”



Ref: <https://www.tableau.com/learn/articles/data-visualization>

Ref: <http://www.arkadesignstudio.in/dataviz/covid19/Covid19-India-District-DataVizualization.html>

-MR. ANIRBAN RUDRA (SE - IT)

7 Ways to Teach Digital Literacy

Digital literacy is a hot topic these days, and we’ve previously written about the importance of it for today’s students and what teachers need to know about helping them use technology effectively to enhance modern communication.

“Even if your students don’t go into the technology industries, being able to use it and continue their own self-directed learning can benefit them in ways we cannot presently foresee,” With this in mind, we’ve rounded up some examples of what digital literacy in education looks like.

1. Emphasize the importance of critical thinking
2. Use social media for learning and collaborating
3. Provide guidance on how to avoid plagiarism
4. Teach students to manage their online identity
5. Help students manage digital distractions
6. Provide authentic contexts for practice
7. Guide students out of their comfort zone

Whatever the case may be, giving students more freedom of choice and encouraging them to use technology in new and creative ways is one of the best ways to help them hit the ground running once they enter the workforce.

Ref: <https://www.opencolleges.edu.au/informed/edtech-integration/7-ways-teach-digital-literacy/>

**-MRS. ADITI MALKAR
(ASSISTANT PROFESSOR)**

How Twitter ditched Hadoop and migrated to Google Cloud

Twitter made the big move of migrating to Google Cloud in May 2018. Migrating Twitter's Hadoop file system hosted across tens and thousands of servers was a critical task. Here's how the migration took place.

The engineering team first left pipelines such as the data aggregation legacy scalding pipelines, unchanged. These pipelines were designed to run on their own data centres. However, the batch layer's output was switched to separate storage on Google Cloud. The company used Google's serverless, highly scalable data warehouse, BigQuery store the transcoded output aggregations from the Scalding pipelines.

Dataflow pipeline read the data from BigQuery and then applied simple light transformations. This Cloud Bigtable for low-latency, fully managed NoSQL database served as a backend for online dashboards and consumer APIs.

The team started to redesign the rest of the data analytics pipeline using Google Cloud after the successful installation of the first iteration. Twitter chose Apache Beam due to its deep integration with other Google Cloud products.

A BigQuery slot is defined as a unit of computational capacity used to execute SQL queries. The platform re-implemented the batch layers. It first staged the data from on-prem HDFS to Cloud. A Dataflow job batch then regularly loaded the data from Cloud Storage and processes the aggregation. The results are then written to BigQuery.

The primary motivation behind migration to GCP was the democratisation of data analysis. Visualisation and secure machine learning were the top priorities for Twitter back then. Google's BigQuery and Data Studio came in handy to facilitate the same.

[Ref:https://content.techgig.com/how-twitter-ditched-hadoop-and-migrated-to-google-cloud/articleshow/74931099.cms](https://content.techgig.com/how-twitter-ditched-hadoop-and-migrated-to-google-cloud/articleshow/74931099.cms)

**- MR. AKSHAY AGRAWAL
(ASSISTANT PROFESSOR)**

5 essential Data Science job interview questions



Data Science is the fastest growing IT skill right now. If you are an aspiring data scientist, here are some of the most challenging questions that will be asked in a job interview.

1. What machine learning model will you choose to perform predictions on a [given] use case?

You are supposed to demonstrate the mathematical understanding of the ML model you recommend. The interviewers often ask this question to dig deeper and test your knowledge. The question can be posed as part of a large coding exercise.

2. What is bias, variance trade-off?

Bias is an error introduced in the model due to oversimplification of ML algorithms. It can lead to under fitting while training your model. Variance is an error introduced due to complex ML algorithms.

3. Explain regularisation and why it is useful

Regularisation is a process of adding tuning parameters to a model. It is done to induce smoothness and prevent overfitting. Regularisation is usually done by adding a constant multiple to an existing weight factor.

4. What is root cause analysis?

Root cause analysis (RCA) is a problem-solving method used for identifying the causes of faults or problems. A factor is considered a root cause if removal from the problem-fault-sequence prevents the final undesirable event from recurring.

5. What is selection bias, and how can you avoid it?

In this situation, an error is introduced due to a non-random population sample. You can avoid selection bias by avoiding non-random samples.

Ref: <https://content.techgig.com/5-essential-data-science-job-interview-questions/articleshow/74931271.cms>

-MR. AKSHAY AGRAWAL
(ASSISTANT PROFESSOR)

Deep learning takes on tumours

Artificial-intelligence methods are moving into cancer research.

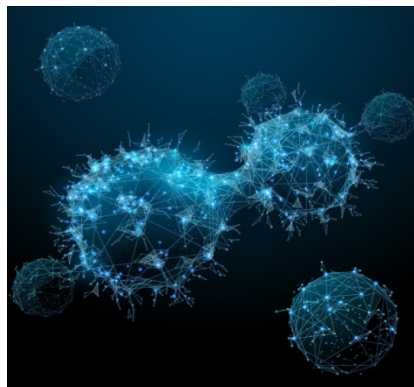
As cancer cells spread in a culture dish, Guillaume Jacquemet is watching. The cell movements hold clues to how drugs or gene variants might affect the spread of tumours in the body, and he is tracking the nucleus of each cell in frame after frame of time-lapse microscopy films.

But because he has generated about 500 films, each with 120 frames and 200–300 cells per frame, that analysis is challenging to say the least. “If I had to do the tracking manually, it would be impossible,” says Jacquemet, a cell biologist at Åbo Akademi University in Turku, Finland.

So he has trained a machine to spot the nuclei instead. Jacquemet uses methods available on a platform called ZeroCostDL4Mic, part of a growing collection of resources aimed at making artificial intelligence (AI) technology accessible to bench scientists who have minimal coding experience.

AI technologies encompass several methods. One, called machine learning, uses data that have been manually preprocessed and makes predictions according to what the AI learns.

Deep learning, by contrast, can identify complex patterns in raw data. It is used in self-driving cars, speech-recognition software, game-playing computers — and to spot cell nuclei in massive microscopy data sets.



[Ref:https://www.nature.com/articles/d41586-020-01128-8](https://www.nature.com/articles/d41586-020-01128-8)

- MR. JASKIRAT SOOD (TE - IT)

The Do's and Don'ts of Writing Research Papers

Following are some do's and don'ts that one should follow while writing a research paper:

The Do's:

- Use language such that the ideas are presented clearly without any ambiguity. Do not write stories.
- Present your ideas and methods used in the research. Use to the point observations to justify your research.
- Make sure the data, figures, formula etc you are using is correct. Check the sources from where you might have taken the data.
- Try to write in a sequence so that the readers can understand the flow of the research carried out.
- Ensure you have carried out your tests with sufficient number of test cases.
- Maintain all the sources and carefully, mention all of them. Cite the references properly.
- Check for nay spelling, punctuation and grammatical error

The Don'ts:

- Do not make use of words like “in my opinion” or “I believe” or “I think”. Instead, use words like, “It is recommended”.
- Don't use first person pronouns ("I", "we", "me", "us", "my", and "our").
- Do not start sentences with “Well,...just don't”
- Do not make up stories and add unnecessary details just to increase the length of the paper or to justify any point.
- Do not make general statements. Present you findings without giving too many overview from different papers and sources.
- Do not exceed the mentioned word limit. Follow the guidelines specified.
- Do not cite Wikipedia as a reference.
- Do not forget to mention the references of the source for supporting material.

[Ref:https://www.resurchify.com/article7.php](https://www.resurchify.com/article7.php)

- MRS. ROVINA D'BRITTO
(ASSISTANT PROFESSOR)

Things To Do For Self Improvement

- To improve yourself you have to be courageous!
- Self- improvement is when you change yourself to the better. Nobody is perfect. Every individual has to change from time to time accordingly in order to improve themselves from their origin.
- We can improve our skills such as, leadership skills, goals, organizational skills, communication skills and all our values within ourselves to make us a better person. It is bogus that everybody is successful. But in order to be successful we need to improve ourselves or else we will be stuck inside the same zone.
- Self – improvement deals with inner change, throwing away our negative habits and absorbing all the positive ones.

Express Your Gratitude After Waking Up From Sleep: After waking up in the morning, sit up in your bed and be thankful for all the things that you are obliged for. List about 5 things that you wish to be grateful for. It may be for getting such wonderful parents, sweet siblings, blessed life and so on, it depends in accordance to the priorities and desires of each individual.

Meditate: Meditation is not just an act of sitting in a still position, crossing your legs and closing your eyes. It is the art of giving peace to the mind, letting out all the negative thoughts and taking in all the positive thoughts and vibrations; most of which prove to be profound with some obvious surprises within you.



Break Your Routine : Routines can make your life systematic. That is never a good idea to draft your life. Keep trying something new every day, no matter how insane you think it is.

Exercise And Healthy Diet : Exercise has abundant benefits, especially when it comes to self- improvement, this can be the best way to keep your life hale and healthy. It improves your strength and helps to improve your body's immune system. Exercises have 101 benefits which are associated with an esteem of immense benefits and values. If self- improvement is your ultimate target, then exercise with no doubts will be a part of your habit.



It is very important to be conscious on what you consume. A proper diet is a very important issue to be considered in our day- to- day life

Spend Some Time Reading

Though this habit is overshadowed by all the other habits, it is indeed a useful and intellective part of time you will be investing on it. Reading is a special habit which



improves our knowledge and language and helps develop a good grade of communication and also helps build confidence within an individual. Most of us are lazy to just get a book and sit in the same place like a couch potato. This would definitely create boredom and may even lead you to lose the interest on reading. Instead, you can prefer reading any blogs or magazines. Real time articles are more interesting to read and it ought to keep you occupied for hours together once you start reading them.

The Bottom Line

Self- improvement can be absolutely fun and rewarding. Simply look at all the people around you. Try to observe the way they behave. If you find out some negative qualities in some one, examine it with yours. If you find out that you have that quality then it will be appropriate for you to change it.

It is something that teaches us to turn the negatives into positive affirmatives. It enables a person to attain full potential. Through this we intend to understand ourselves better and make positive changes inside our world. Keep motivating yourself to make all the changes without any hesitations. This will help you face all circumstances of life.

Self- improvement gathers abundant confidence within an individual which helps invade the best position in the society. By improving yourself in accordance with every situation you face in life, you could lead a peaceful, happy and indeed a long life.

[Ref:https://www.rosemaryconley.com/library/ask-the-doctor/eating-for-a-healthy-heart](https://www.rosemaryconley.com/library/ask-the-doctor/eating-for-a-healthy-heart)

- MISS. SHAILI SHAH(SE - IT)

Say Goodbye to Pills. Nano Robots Can Cure

Nano robots will be able to repair damaged or diseased tissues. The circulatory system is the natural path for these devices and the nano robots will pass through the blood stream to the area of defect.



They attach themselves to specific cells, such as cancer cells and report the position and structure of these tissues. A creative methodology in the use of these devices to fight cancer involves using silicon nano machines with a thin coating of gold and light in the near infrared spectrum.

Light in the 700-1000 nanometer range will pass through the tissue and reaches the defective cell. When this infrared light strikes the particular type of nano robot, the device gets hot due to the oscillation of the metal's electrons in response to the light. Using an MRI, the nano robot is specifically placed in the cancerous region, and then the light causes the devices to heat to 131 degrees Fahrenheit which destroys the cancerous cells but doesn't damage surrounding tissues.

This is the new technology, without any drawbacks. These nano robots can cure any disease without affecting any other cells or tissues. The future vision: Imagine going to the doctor to get treatment for a fever, instead of giving you a tablet the doctor implants a tiny robot into your bloodstream.

The robot detects the cause of your fever, travels to the appropriate system and provides a dose of medicine directly to the infected area. This is going to happen in a few years of time from now.

Each person is going to have a nano robot in his body which is going to monitor human body system. So the time arrives to enjoy with the robot within our self.

[Ref: http://tulkmagazine.blogspot.com/2014/08/amazing-tiny-robots-to-directly-target.html](http://tulkmagazine.blogspot.com/2014/08/amazing-tiny-robots-to-directly-target.html)

- MR. RITVIK PARIKH (SE - IT)

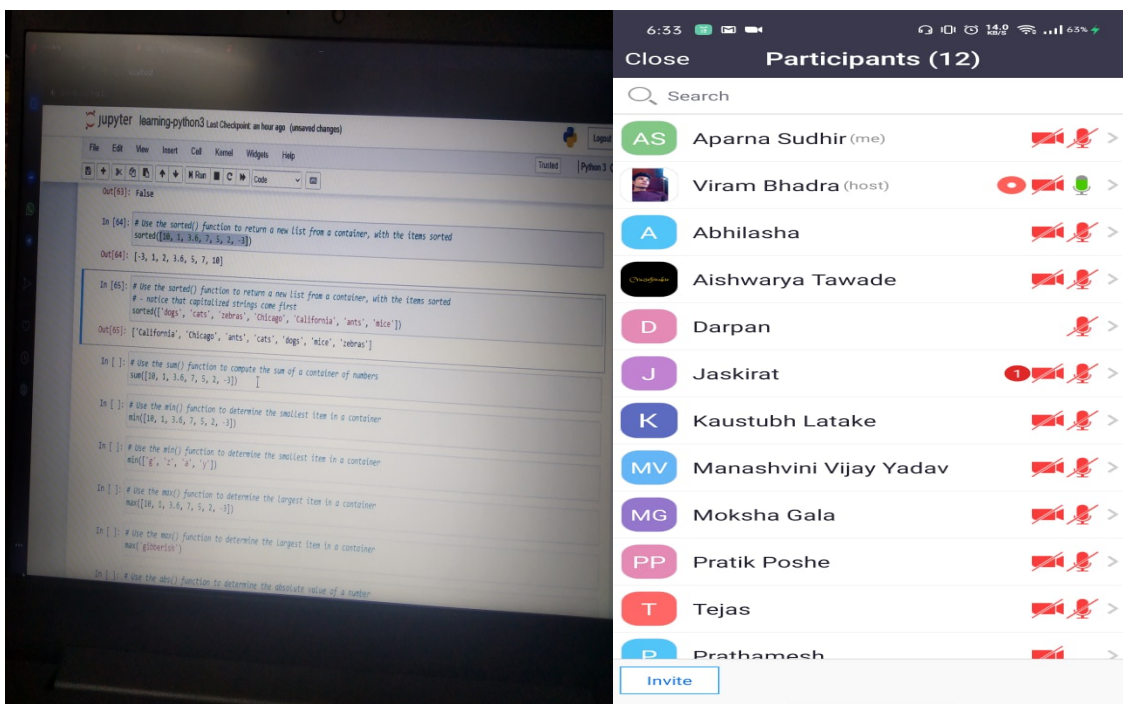
Each One – Teach One



- **Topic:** Python
- **Conducted On:** 16th & 17th April 2020.

Summary:

- The lecturer for this topic was Meet Bhanushali from TE IT.
- Meet Has immense Knowledge and experience in Python, He worked as Jr. Python developer at Maxgen industries in R&D department..
- He Won 3 hackathon and 5 fest coding events in last semester, also scored 351Rank all over globe in code jam (Google code camp). He is the Golden batch in hack rank python problem solving. Due to Covid-19 crisis this lecture was conducted online in zoom app.
- He taught students How to install python & jupyter notebook, How to use jupyter notebook, Data types, Basic functions ,Customized functions ,Higher level functions such as map, reduce filter, Anonymous functions : lambda , Generators : for if and mixed ,General creation of a code, along with this he also guided the students how they can think, build logic and code.



It was a very important topic and was very well received by the students.

PAPER PUBLICATIONS 2020



Sr. No.	Name of the Faculty	Title of the Paper	Journal/Conference Name
1	Mrs. Yogita Deepak Mane	A Systematic Way to Implement Private Tor Network with Trusted Middle Node	IEEE conference, INCET2019
		Detection and Deactivation of Application Layer Based DDoS Attack from Private Tor Network	ICICCT 2020, Springer -Lecture notes in Networks and System
		Realtime Detection Of Network Anomalies Using Neural Network	IEEE conference, icstcee2020
2	Mrs. Mudra Doshi	Health Monitoring and Analysis System using IPFS and Blockchain.	INTERNATIONAL CONFERENCE ON. CONVERGENCE TO. DIGITAL WORLD, IEEE Conference, 2020
		GPS and GSM based vehicle tracking system with intelligent data analysis	International Journal for Research in Engineering Application & Management (IJREAM),ISSN : 2454-9150
3	Mr. Allan Benamin Lopes	Plant Health Detection	International Journal for Scientific Research & Development (IJSRD)
4	Mrs. Sanketi Paresh Raut	A Survey on Hacking Methodology	National Conference on (Trends n Herald in Engineering Excellence and Metamorphosis-2020)- International Journal of Advance and Innovative Research(IJAIR),JAN 2020
		Quantum Communication - Hack Proof Communication Technology	
		Smart Automated Irrigation System with Disease Prediction	
		Big Data Analysis - A Survey	
		E-COMMERCE SALES PREDICTION	Journal of Emerging Technologies and Innovative Research(JETIR),2020
5	Agrawal Akshay Shankar	Suspicious Activity Detection through CCTV	International Journal for Research in Engineering Application & Management (IJREAM)
		Talking Fingers - Sign Language Translator	
		MoodPlayer: An Emotion Based Music Player	
6	Mrs. Rovina Dbritto	E-COMMERCE SALES PREDICTION	Journal of Emerging Technologies and Innovative Research(JETIR)
7	Jigar Chauhan	AI and ML Based Chatbot for College Related FAQs	2020 International Conference on Data Science and Internet of Everything (ICDSIE).

STUDENT'S ACHIEVEMENT

HEARTIEST CONGRATULATIONS..!!!



MR. Rahul Ritesh Lanjewar,
MR. Nidhish Mehra & MR.
Shaikh Abdul Kabir
Tanveer S.E (IT) - winners
of ACM Hackthon held AT
M. H. Saboo Siddik College
of Engineering, Mumbai.



IT Department would like to appreciate our student – Mr. Aash Jain for successful completion and ongoing of his internship under website designing with Travelope (22 December 2019 to 22 March 2020), Travel packer(Free Lancing and Ongoing) and with Masters Digital Photography School(Ongoing)



Winner, Mr. Meet Bhanushali
at TECHXPOSURE 3.0 at S.K.
Somaiya College of Arts,
Science & Commerce, also won
3rd prize in 5 days Online
Python Coding Challenge
conducted by MHM's Outcome
based Education.





COLLEGE ACHIEVEMENT
**HEARTIEST
CONGRATULATIONS..!!!**



UCoE's Football team were winners at L.R. TIWARI INTER COLLEGE SPORTS TOURNAMENT 2020.



UCoE Girl's Kabaddi Team as winners in L.R. TIWARI INTER COLLEGE SPORTS TOURNAMENT 2020 and 1st Runner-up at COEP, Pune



FACULTY'S ACHIEVEMENT



HEARTIEST CONGRATULATIONS..!!!



Mr. Akshay Agrawal completed an online course on "Introduction to Data and Data Science" by 365 Data Science.



Title: Health Monitoring and Analysis using Blockchain and IPFS

Abstract: India currently has no central health monitoring system in place which can provide a single platform for storing Medical records of all the citizens of our country in a systematic and secured manner. In this research, we develop a system that will not only provide a record storing platform rather, a system that can be used to perform analysis on the records stored and produce output by the means of data mining which could be used for multiple agencies like Government, Pharmaceuticals Company, and Hospitals to benefit from services like Epidemic predictability based on Preset benchmarks, help in maintaining appropriate stock of medicine, serve as Electrical Medical Records (EMRs), etc. The highlight of this research is the use of two emerging paradigm changing technologies in the medical domain, which are Blockchain and IPFS. The use of these two technologies along with the architecture model suggested in this paper can efficiently reduce the problem of security breaches faced by most of the health record systems maintained by other countries.

UP COMING EVENT



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DATE : 22-05-2020 to 26-05-2020 TIME : 5.00 PM to 6.00 PM

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Dr. J. B. Patil
(Campus Director)

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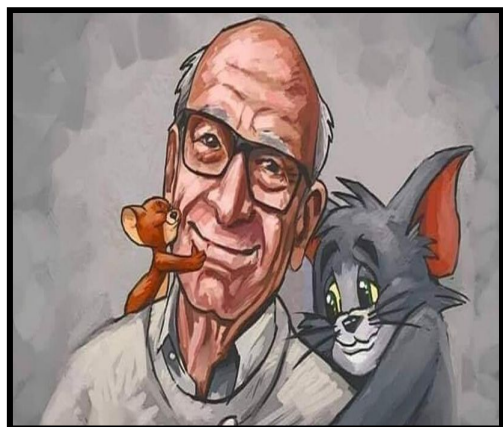
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Gene Deitch
(August 8, 1924 - April 16, 2020)
Director of Tom & Jerry and Popeye



Scan for previous edition



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