# TECHMAG

## Departmental magazine of FACE-IT
### (Forum At Computer Engineering And Information Technology)
#### Volume 12



FACE-IT
2017-2018

# TECHMAG
## VOL 12

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**KDK College of Engineering, Nagpur**

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# FROM THE EDITOR

FACE-IT
GENIUSES AT ~~WORK~~ play

Magazine In Charge(faculty)
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**Prof.H.V.Gorewar**

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**Jitesh Raut**

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**Afreen Jiwani**
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**Sushil Atrahe**
**Rohit Gomkar**

Mid way through editing and designing a pile of articles which I was nose deep in with the thought of billion things that 'JUST HAD TO BE DONE' I pulled at my hair for the very first time. This was the first of many such moments putting a magazine together was no cake walk. I along with my editorial team members have spent plenty of time to make this magazine stand out.

So here you have "TECHMAG 18",the long awaited magazine of "FACE-IT" for the year 2017-2018. The name "TECHMAG" suggests this magazine is a platform that exibits literary skills and innovative ideas of teachers and students. "TECHMAG" presents the hard work and dedicatioin of student and contributions of teachers.

I would like to thank all my editorial team members for helping me pull this through. I express my considerable appreciation to all the authors of the articles in this magazine. These contributions have required a generous amout of time and efforts. In this willingness to share knowledge concerns and special insights with fellow beings that has made this magazine possible.

Thnk you all!!

**Akshay Gulhane**
**(Cheif Editor)**

# MESSAGE FROM AUTHORITIES

KDK College of engineering is committed to the holistic development of students, can nurture their latent talents, ingenuity and creativity, and also instilling a sense of discipline and mortality.

"TECHMAG" it has been a long span on 12 years that the department of Information Technology and Computer technology is releasing its yearly magazine, which enables the students to think outside thier syllabus and carry out some creativity and activity through some group efforts. The legacy of our students get reflected in the work of latest batches that we get to witness every year. I congratulate all the faculty members and dear students, particularly the team of "TECHMAG" and wish them grand success.

Thank you

Dr.D.P. Singh
Principal K.D.K.C.E. ,Nagpur

It seems like yesterday when the first print of this illustrious magazine came out some twelve years ago. All the pioneers belonging to the departments of Computer Technology and Information Technology, who conceptualized the idea of publishing this technical magazine should be praised and honored.

It has been twelve years since then. It's been a bright decade during which our students gave us joys, excitements and success and enlightened us towards latest in the fields of Computer and Information Technology. A decade during which we do not count only the daily hard work of the teachers and the students for achieving this paramount goal, but also the struggle and the great desire of the entire KDKCE family who have directly or indirectly contributed for the success of this magazine. I appreciate the strength, courage and continuing efforts of the staff and students of the departments of Computer Technology and Information Technology who have always been aiming higher to publish this magazine. I would also like to thank all those who have contributed to the edition of this special magazine with their articles All the best to everyone.

Thank you

Prof.A.M. Beder
Vice-Principal K.D.K.C.E. ,Nagpur

I am pleased to know that our Computer and Information Technology Department students are once again successful in bringing their Twelfth issue of magazine "Tech-Mag-18" for this academic year. Our students have established a joint venture, in bringing out a technical magazine with their contributions. The most important aspect we could derive from this stupendous effort is that it brings out the various technical and analytical skills of the budding engineers. I express my compliments to the TechMag-18 heads, the editor and their dedicated committee for their valuable efforts in bringing out this issue. I wish them all triumph!

Thank you

Dr.(Mrs.)S.P. Khandait
H.O.D. Information Technology K.D.K.C.E.

I would like to present, with great pleasure, the new yearly publication of our new technical magazine Techmag 2018.

This magzine was envisioned and founded to represent the growing needs of talents of our students in the emerging and increasingly vital field of computers and information technology and is now widely recognized as an integral part of scientific and technical matters world-wide.

One of the fundamental missions of this magzine is to becomea voice of our students in computational science community, addressing areas of computational methods, findings, and solutions. This magzine is intended as a forum for students to share their thoughts, solutions in the area, to identify new issues and to shape future directions for themselvesThis versatile magzine is our pride and I extend my heartiest congratulations and best luck to everyone directly and indirectly associated with this venture at KDKCE, Nagpur.

Thanks..

Prof.A.A. Jaiswal
H.O.D. Computer Technology K.D.K.C.E.

# MESSAGE FROM FACULTY

It gives me an immence pleasure to note that, department of computer technology and information technology is bringing aout its volume 12 of face-t magazine during march 2018. It is nothing but a team work with dedication, determination and discipline that leads to success of the magazine. May this magazine be the guiding factor for todays youth and keep pace with the changing scenario and provide the platform for exhibiting true talent and creativity of the students. I extend my greetings to all thise assocoated with the magazine and wish them all success in their endeavours to expand horizontally and vertically to the TECH-MAG uplift.

Dr. Sachin Solanki
IT Department

Rain or shine, the hard work of the members of magazine committee again come out with flying Colors. In high spirit they took this spectacular magazine to the summit by the virtue of their scrupulous participation. I appreciate their sincere efforts, hardwork and wish the students good luck fir their future.

Prof. K.S. Chandwani
CT Department

Creativity is a serene wind that sail through minds, carrying embers of life. Wonders will never cease and this has been proved by the magazine committee who have come up with such a splendid piece TECHMAG volume-19, I am really glade to supervise such a marvelous team and wish them good luck for their future.

Prof. Sanjay Malode
CT Department

"Techmag" The magazine by the forum of FACE-IT is designed nd published every year to provide a platform for collection of ideas relat d to the recent technologies and trends. It also Focuses on innovative ideas of students and cultural activities which steps them towards a new world. Every year "Techmag" is with its new looks and with innovative ideas only because of the efforts made by students, facilities. I am glad to supervise such a marvelous team members of Techmag and Wish them good luck for their future.

Prof. Harish Gorewar
IT Department

The Department Magazine team works to bring out the annual official student, faculty publication of Computer Technology and Information Technology Department of KDKCE. Each year our team of editors, designers, photographers, in addition to generating creative content from the students and faculties, work extensively to report on events in and around college. The final publication reflects and encompasses the diversity inherent to the academic and extra-curricular spaces in KDKCE. This magazine is vibrant mix of intellectual prowess in the humanities, natural sciences and technologies.

Prof. A. M. Kuthe
CT Department

# Contents

"Creativity, as has been said, consists largely of rearranging what we know in order to find out what we do not know. Hence, to think creatively, we must be able to look afresh at what we normally take for granted."

— George Kneller

**Avanish Pandey**
(President)

I feel great to be president of such energetic and enthusiastic committee. I am honoured to be a part of such a wonderful and planted team FACE-IT. I am thankful to all my teachers and my colleagues who believed and appreciated me and made Fahrenheit 2k18 a successful one.

**Shubham Sarkar**
(Vice-President)

Maturity and Understanding is the most important thing in a life and Positive thinking makes everything possible in life. So the journey from Event student to VICE-PRESIDENT was full of excitement. I would like to thank all the committee members because they are the pillars of our committee.

**Vaibhav Kamdi**
(Executive Vice President)

It has been a great pride and Honor for me to be a part of FACE-IT. From common co-ordinator to event analyst and then that for Vice-president, the journey with FACE-IT was full of respects and excitement. I would like to thank all the committee members and staff for their immense support for making FAHRENHEIT 2K18 successful.

**Dhaarna Waghaye**
(GS Technical)

It is an honor to be a part of face- it. The journey started from being a special coordinator to General Secretary, though the path was not easy. This journey made me learn new things and achieve new goals. Its one of the best part of my life.

**Shruti Bhatkulkar**
(GS Non-Technical)

I have been really fortunate to have the opportunity to work with such a supportive team members. Being the General Secretary, I got the platform to enhance my talents. I would like to work hard for upcoming face it committee.

**Anagha Baraskar**
(Joint Secretary)

It's my pleasure to be a part of such forum FACE-IT. It has enhance my confidence and skill. I acknowledge FACE-IT committee for giving me a chance to name FACE-IT. I would like to work hard at face it upcoming committee.

**Jitesh Raut**
(Techmag Head)

I would like to thank FACE-IT for giving me opportunity to showcase my talent through one of the long awaited magazine called TECHMAG-2K18. This experience will not be ephemeral. I am thankful to my seniors and staff members who believed and appreciated me. I would like to thank my fellow techmag members to complete this journey successfully.

**Pratik Lonare**
(Techmag Head)

It's a great experience technically. I think all the members of Techmag committee who put put their soul and worked with me round the clock for making this membership and separate masterpiece. I believe that we efforts are worth and hope that we from made our magazine a remarkable. I would like to thank all our FACE-IT members for giving us a chance.

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## Deep Learning and Computing Future

Dr. A. A. Jaiswal
H.O.D. CT Dept.

**Deep-learning** software attempts to mimic the activity in layers of neurons in the neocortex, the wrinkly 80 percent of the brain where thinking occurs. The software learns, in a very real sense, to recognize patterns in digital representations of sounds, images, and other data.

The basic idea that software can simulate the neocortex's large array of neurons in an artificial "neural network" is decades old, and it has led to as many disappointments as breakthroughs. But because of improvements in mathematical formulas and increasingly powerful computers, computer scientists can now model many more layers of virtual neurons than ever before.

With this greater depth, they are producing remarkable advances in speech and image recognition. Last June, a Google deep-learning system that had been shown 10 million images from YouTube videos proved almost twice as good as any previous image recognition effort at identifying objects such as cats. Google also used the technology to cut the error rate on speech recognition in its latest Android mobile software. In October, Microsoft chief research officer Rick Rashid wowed attendees at a lecture in China with a demonstration of speech software that transcribed his spoken words into English text with an error rate of 7 percent, translated them into Chinese-language text, and then simulated his own voice uttering them in Mandarin. That same month, a team of three graduate students and two professors won a contest held by Merck to identify molecules that could lead to new drugs. The group used deep learning to zero in on the molecules most likely to bind to their targets.

All this has normally cautious AI researchers hopeful that intelligent machines may finally escape the pages of science fiction. Indeed, machine intelligence is starting to transform everything from communications and computing to medicine, manufacturing, and transportation. The possibilities are apparent in IBM's Jeopardy!-winning Watson computer, which uses some deep-learning techniques and is now being trained to help doctors make better decisions. Microsoft has deployed deep learning in its Windows Phone and Bing voice search.

Extending deep learning into applications beyond speech and image recognition will require more conceptual and software breakthroughs, not to mention many more advances in processing power. And we probably won't see machines we all agree can think for themselves for years, perhaps decadesif ever. But for now, says Peter Lee, head of Microsoft Research USA, "deep learning has reignited some of the grand challenges in artificial intelligence."



### Building a Brain

There have been many competing approaches to those challenges. One has been to feed computers with information and rules about the world, which required programmers to laboriously write software that is familiar with the attributes of, say, an edge or a sound. That took lots of time and still left the systems unable to deal with ambiguous data; they were limited to narrow, controlled applications such as phone menu systems that ask you to make queries by saying specific words.

Neural networks, developed in the 1950s not long after the dawn of AI research, looked promising because they attempted to simulate the way the brain worked, though in greatly simplified form. A program maps out a set of virtual neurons and then assigns random numerical values, or "weights," to connections between them. These weights determine how each simulated neuron responds—with a mathematical output between 0 and 1—to a digitized feature such as an edge or a shade of blue in an image, or a particular energy level at one frequency in a phoneme, the individual unit of sound in spoken syllables.

Programmers would train a neural network to detect an object or phoneme by blitzing the network with digitized versions of images containing those objects or sound waves containing those phonemes. If the network didn't accurately recognize a particular pattern, an algorithm would adjust the weights. The eventual goal of this training was to get the network to consistently recognize the patterns in speech or sets of images that we humans know as, say, the phoneme "d" or the image of a dog. This is much the same way a child learns what a dog is by noticing the details of head shape, behavior, and the like in furry, barking animals that other people call dogs. Last June, Google demonstrated one of the largest neural networks yet, with more than a billion connections. A team led by Stanford computer science professor Andrew Ng and Google Fellow Jeff Dean showed the system images from 10 million randomly selected YouTube videos. One simulated neuron in the software model fixated on images of cats. Others focused on human faces, yellow flowers, and other objects. And thanks to the power of deep learning, the system identified these discrete objects even though no humans had ever defined or labeled them.

### Big Data

Training the many layers of virtual neurons in the experiment took 16,000 computer processors the kind of computing infrastructure that Google has developed for its search engine and other services. At least 80 percent of the recent advances in AI can be attributed to the availability of more computer power, reckons Dileep George, cofounder of the machine-learning startup Vicarious. There's more to it than the sheer size of Google's data-centers, though. Deep learning has also benefited from the company's method of splitting computing tasks among many machines so they can be done much more quickly. That's a technology Dean helped develop earlier in his 14-year career at Google. It vastly speeds up the training of deep-learning neural networks as well, enabling Google to run larger networks and feed a lot more data to them.

Already, deep learning has improved voice search on smartphones. Until last year, Google's Android software used a method that misunderstood many words. But in preparation for a new release of Android last July, Dean and his team helped replace part of the speech system with one based on deep learning. Because the multiple layers of neurons allow for more precise training on the many variants of a sound, the

system can recognize scraps of sound more reliably, especially in noisy environments such as subway platforms. Since it's likelier to understand what was actually uttered, the result it returns is likelier to be accurate as well. Almost overnight, the number of errors fell by up to 25 percent results so good that many reviewers now deem Android's voice search smarter than Apple's more famous Siri voice assistant.

For all the advances, not everyone thinks deep learning can move artificial intelligence toward something rivaling human intelligence. Some critics say deep learning and AI in general ignore too much of the brain's biology in favor of brute-force computing.



### What's Next

Although Google is less than forthcoming about future applications, the prospects are intriguing. Clearly, better image search would help YouTube, for instance. And Dean says deep-learning models can use phoneme data from English to more quickly train systems to recognize the spoken sounds in other languages. It's also likely that more sophisticated image recognition could make Google's self-driving cars much better. Then there's search and the ads that underwrite it. Both could see vast improvements from any technology that's better and faster at recognizing what people are really looking for maybe even before they realize it. In a field that attempts something as profound as modeling the human brain, it's inevitable that one technique won't solve all the challenges. But for now, this one is leading the way in artificial intelligence. "Deep learning," says Dean, "is a really powerful metaphor for learning about the world."

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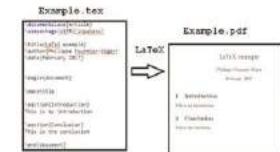## LaTeX - A Tool for writing research papers

Dr. S.P. Khandait
H.O.D. IT Dept.

**Many researchers** are using Microsoft Word for writing research papers. However, Microsoft Word has several problems or limitations. The use of LaTeX as an alternative to Microsoft Word for writing research papers.

### What is LaTeX?

LaTeX is a document preparation system, proposed in the 1980s. It is used to create documents such as research papers, books, or even slides for presentations. The key difference between LaTeX and software like Microsoft Word is that Microsoft Word let you directly edit your document and immediately see the result, while using LaTeX is a bit like programming.



### Why using LaTeX?

There are several reasons why many researchers prefer LaTeX to Microsoft Word for writing research papers. LaTeX papers generally look better LaTeX papers often look better than papers written using Microsoft Word. This is especially true for fields like computer science, mathematics and engineering where mathematical equations are used. but are not as flexible as in LaTeX.

### LaTeX is available for all platforms

The LaTeX system is free and available for most operating systems, and documents will look the same on all operating systems. To install LaTeX on your computer you need to install a LaTeX distribution such as MikTeX ( https://miktex.org/ ). After installing LaTeX, you can start working on LaTeX documents using a text editor such as Notepad.

### LaTeX offers many packages

Besides the basic functionalities of LaTeX, you can install hundreds of packages to add more features to LaTeX. There are packages for about everything from packages to display algorithms to packages for displaying chessboards. You don't need to worry about how your document will look like When writing a LaTeX document, you don't need to worry about how your final document will look like. For example, figures and tables are handled by the LaTeX engine during the compilation of your document.

LaTeX can generate and update your bibliography automatically Another reason for using LaTeX is that it can generate the bibliography of a document automatically. There are different ways of writing a bibliography using LaTeX.

### LaTeX works very well for large documents

LaTeX also provides many features that are useful for large documents such as Ph.D thesis and books. These features include generating tables of contents, tables of figures, and dividing a document into several files. Some of these features are also provided in Microsoft Word

## I'm a Teacher

Dr. S.V. Solanki
IT Dept.

"I'm a teacher..............."
Behind that engineer,

It's me, a teacher..........
Behind that doctor,

It's me, a teacher...........
Behind that economist,

It's me, a teacher.........
Above those astronomers,
It's me, a teacher.............
I carry the light even though they mostly make jokes of me...........

But I am a teacher........
I don't qualify for a bungalow or a villa nor earn enough to buy an expensive house or a car.............

But yes, i am a teacher..........
Some think or even say that I have too many holidays, never knowing that I spend those holidays either correcting papers or planning what and how I'm going to teach when I go back to school/college/institution.......

Because i am a teacher..,
Sometimes i get confused and even get stressed by the ever-changing policies over what and how I have to teach.......
Despite all that, I am a teacher and I love to teach and I'm teaching............
On pay-days I don't laugh as others do, but by the next day I love to come with a smile to those that I teach..........
Because I m a teacher....
The main source of my satisfaction is when I see THEM growing, succeeding, having all those assets, bravely facing the world and its challenges,
and I say yes I've taght in spite of living in a world opened by Google..
Because I am a teacher....
Yes I am a teacher........
It doesn't matter how they look at me,
It doesn't matter how much more they earn than I DO.
It doesn't matter that they drive while I walk
because all what they have is through me,
A teacher...
Whether they acknowledge me or not......
"I am a teacher...."s
[ref: from an unknown source]

## Tips for better ranking of your website

Prof. K.S.Chandwani
CT dept.

Search Engine optimization (SEO) is the technique of increasing the quality and quantity of traffic to your website through organic search engine result.
5 common SEO techniques must be considered to rank up your website

**1. Site Security doesn't change Rankings**
In 2017, more emphasis was taken for web security, international hacking and inauthentic news. The Internet has become more comprehensive thus extra caution is taken for the privacy. In 2014, Google made site security as the ranking factor. Thus it has given advantages to the HTTPS SSL certificate sites over non-certificate sites in the rankings. Google Chrome already warning the users the sight isn't secure without HTTPS.

**2. More Content= Better SEO**
Quality matters more than quantity. Content created that goes viral is the key to success for SEO. No content is often better than low-quality content. The main role of Google is to display the content that users are actually looking for. The better content you create, the better user experience is. Thus spam has no place to rank anymore.

**3. Meta Tags Play Big Role in Rankings**
This is one of the most common SEO technique. Meta title is the blue line that appears in the search results and meta description is the description just appear beneath the met title. It is a myth that by optimizing them by keywords, you will crawl early and start appearing in the search results. Sometimes they often result in spam leading to penalties.

**4. Keyword Stuffing Still Matters**
Keyword stuffing means inserting words throughout the website without maintaining the keyword density. It is the percentage of times a particular keyword appears in the content. When keyword stuffing is done, it looks spammy and hated by search engines. Google is penalizing the sites who are stuffing the keywords in order to provide a better user experience.

**5. Your rankings in the top 10 is guaranteed**
Many agencies promise you to rank #1 when they take your project. It's not guaranteed that you will land on the first page of Google as it requires a lot of hard work and best SEO practices. Some of the practices include building unique content, optimizing meta tags without stuffing the keywords, building quality backlinks. These altogether contributes to the #1 ranking in the search engines

## Quotes By
## Dr.A.P.J. Abdul Kalam

Failure will never overtake me if my determination to succeed is strong enough.

All Birds find shelter during a rain. But Eagle avoids rain by flying above the Clouds.

Man needs difficulties in life because they are necessary to enjoy the success

If you want to shine like a sun. First burn like a sun

All of us do not have equal talent. But , all of us have an equal opportunity to develop our talents

## Touch Screen Technology Definition, Working, Types

Prof. Sarita C. Sakure
IT Dept.

Touch screen technology is the direct manipulation type gesture based technology. Direct manipulation is the ability to manipulate digital world inside a screen. A Touch screen is an electronic visual display capable of detecting and locating a touch over its display area. This is generally refers to touching the display of the device with a finger or hand. This technology most widely used in computers, user interactive machines, smart phones, tablets etc to replace most functions of the mouse and keyboard.

Touch screen technology has been around for a number of years but advanced touch screen technology has come on in leaps and bounds recently. Companies are including this technology into more of their products. The three most common touch screen technologies include resistive, capacitive and SAW (surface acoustic wave). Most of low end touch screen devices contain on a standard printed circuit plug-in board and are used on SPI protocol. The system has two parts, namely; hardware and software. The hardware architecture consists of a stand-alone embedded system using an 8-bit microcontroller, several type of interface and driver circuits. The system software driver is developed using an interactive C programming language.

Types of Touch Screen Technology:
The Touch screen is a 2-dimensional sensing device made of 2 sheets of material separated by spacers. There are four main touch screen technologies: Resistive, Capacitive, Surface Acoustical wave (SAW) and Infrared (IR).

Resistive:
Resistive touch screen is composed of a flexible top layer made of polythene and a rigid bottom layer made of glass separated by insulating dots, attached to a touch screen controller. Resistive touch screen panels are more affordable but offering only 75% of light monitor and the layer can be damaged by sharp objects. Resistive touch screen is further divided into 4-, 5-, 6-, 7-, 8-wired resistive touch screen. The construction design of all these modules is similar but there is a major distinction in each of its method to determine the coordinates of touch.

Capacitive:
A capacitive touch screen panel is coated with a material that stores electrical charges. The capacitive systems can transmit up to 90% of light from the monitor. It is divided into two categories. In Surface-capacitive technology only one side of the insulator is coated with a conducting layer.
Whenever a human finger touches the screen, conduction of electric charges occurs over the uncoated layer which results in the formation of dynamic capacitor. The controller then detects the position of touch by measuring the change in capacitance at the four corners of the screen.
In projected capacitive technology, the conductive layer (Indium Tin Oxide) is etched to form a grid of multiple horizontal and vertical electrodes. It involves sensing along both the X and Y axis using clearly etched ITO pattern. For increasing the accuracy of the system, the projective screen contains a sensor at every interaction of the row and column.
Infrared:
In infrared touch screen technology, an array of X and Y axis is fitted with pairs of IR Leds and photo detectors. Photo detectors will detect any image in the pattern of light emitted by the Leds whenever the user touches the screen.
Surface Acoustic wave:
The surface acoustic wave technology contains two transducers placed along X-axis and Y-axis of the monitor's glass plate along with some reflectors. When the screen is touched, the waves are absorbed and a touch is detected at that point. These reflectors reflect all electrical signals sent from one transducer to another. This technology provides excellent through put and quality.
Components and working of touch screen:
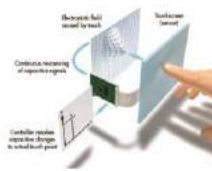


A basic touch screen is having a touch sensor, a controller, and a software driver as three main components. The touch screen is needed to be combined with a display and a PC to make a touch screen system.

Touch sensor
The sensor generally has an electrical current or signal going through it and touching the screen causes a change in the signal. This change is used to determine the location of the touch of the screen.
Controller
A controller will be connected between touch sensor and PC. It takes information from sensor and translates it for understanding of PC. The controller determines what type of connection is needed.
Software driver
It allows computer and touch screen to work together. It tells OS how to interact the touch event information that is sent from the controller.

The touch screen is one of the simplest PC interfaces to use, for larger number of applications. A touch screen is useful for easily accessing the information by simply touching the display screen. The touch screen device system is useful in ranging from industrial process control to home automation.

A real time Application: Controlling home appliances using Touch Screen Technology



It is possible to control the electrical appliances at home using touch screen technology. The whole system works by sending input commands from the touch screen panel through the RF communication which are received at the receiver end and control the switching of loads.

At the transmitter end, a touch screen panel is interfaced to the Microcontroller through a touch screen connector. When an area on the panel is touched, the x and y coordinates of that area are sent to the Microcontroller which generates a binary code from the input.

This 4 bit binary data is given to the data pins of the H19E encoder which develops a serial output. This serial output is now sent using a RF module and an antenna.
At the receiver end, the RF module receives the coded serial data, demodulates it and this serial data is given to the H19D decoder. This decoder converts this serial data into the parallel data which pertains to the original data sent by the microcontroller at transmission end. The microcontroller at the receiver end receiver end, receives this data and accordingly sends a low logic signal to the corresponding optoisolator which in turn switches on the respective TRIAC to allow AC current to the load and the respective load is switched on.

## FAST FACTS

Only about 10% of the world's currency is physical money, the rest only exists on computers.

There are more than 5000 new computer viruses are released every month.

The first ever hard disk drive was made in 1979, and could hold only 5MB of data.

The original name of windows was Interface Manager.

An average person normally blinks 20 times a minute, but when using a computer he/she blinks only 7 times a minute.

## Data mining in Bio-informatics

Prof. Sanjay M. Malode
CT Dept.

In recent years, rapid developments in genomics and proteomics have generated a large amount of biological data.

Drawing conclusions from these data requires sophisticated computational analyses. Bioinformatics, or computational biology, is the interdisciplinary science of interpreting biological data using information technology and computer science. The importance of this new field of inquiry will grow as we continue to generate and integrate large quantities of genomic, proteomic, and other data.

A particular active area of research in bioinformatics is the application and development of data mining techniques to solve biological problems. Analyzing large biological data sets requires making sense of the data by inferring structure or generalizations from the data. Examples of this type of analysis include protein structure prediction, gene classification, cancer classification based on microarray data, clustering of gene expression data, statistical modeling of protein-protein interaction, etc. Therefore, we see a great potential to increase the interaction between data mining and bioinformatics.

### Bioinformatics

The term bioinformatics was coined by Paulien Hogeweg in 1979 for the study of informatic processes in biotic systems. It was primary used since late 1980s has been in genomics and genetics, particularly in those areas of genomics involving large-scale DNA sequencing. Bioinformatics can be defined as the application of computer technology to the management of biological information. Bioinformatics is the science of storing, extracting, organizing, analyzing, interpreting and utilizing information from biological sequences and molecules. It has been mainly fueled by advances in DNA sequencing and mapping techniques. Over the past few decades rapid developments in genomic and other molecular research technologies and developments in information technologies have combined to produce a tremendous amount of information related to molecular biology. The primary goal of bioinformatics is to increase the understanding of biological processes.

Some of the grand area of research in bioinformatics includes:

### Sequence analysis

Sequence analysis is the most primitive operation in computational biology. This operation consists of finding which part of the biological sequences are alike and which part differs during medical analysis and genome mapping processes. The sequence analysis implies subjecting a DNA or peptide sequence to sequence alignment, sequence databases, repeated sequence searches, or other bioinformatics methods on a computer.

### Genome annotation

In the context of genomics, annotation is the process of marking the genes and other biological features in a DNA sequence. The first genome annotation software system was designed in 1995 by Dr. Owen White.

### Analysis of gene expression

The expression of many genes can be determined by measuring mRNA levels with various techniques such as microarrays, expressed cDNA sequence tag (EST) sequencing, serial analysis of gene expression (SAGE) tag sequencing, massively parallel signature sequencing (MPSS), or various applications of multiplexed in-situ

hybridization etc. All of these techniques are extremely noise-prone and subject to bias in the biological measurement.

### Application of Data Mining in Bioinformatics

Applications of data mining to bioinformatics include gene finding, protein function domain detection, function motif detection, protein function inference, disease diagnosis, disease prognosis, disease treatment optimization, protein and gene interaction network reconstruction, data cleansing, and protein sub-cellular location prediction. For example, microarray technologies are used to predict a patient's outcome. On the basis of patients' genotypic microarray data, their survival time and risk of tumor metastasis or recurrence can be estimated. An efficient scoring algorithm that considers the correlative information in a tunable and comprehensive manner is highly desirable.

## Time Management Tips for College Students

Prof. Abhishek Kundu
CT Dept.

All college students suffer distractions, whether from extracurricular activities, surfing the Internet, meeting new people or working a job. Discover resources that can help students better manage their time.

### Time Management Tips

Many universities offer time management techniques that can help college students succeed in their classes. These tips include eliminating procrastination, better organizing daily activities, reducing anxiety and increasing motivation and confidence.

### Get Organized

When developing time management techniques in college, it's important that students first understand their goals and then set out to develop and follow a routine schedule. Without these factors, it may be hard for students to get motivated to employ their time management strategies. Students may download or purchase a scheduler, a weekly, monthly and yearly planner, and worksheets pertaining to the distribution and organization of one's tasks. This will help them avoid waiting until the last minute and having to cram.

Many universities recommend that students take the time to plan each school day. Making a daily list of tasks to accomplish can help students to concentrate on tasks one at a time. Individuals should be specific when setting goals. For example, a student might want to set the goal of reviewing his or her lecture notes each day after classes. It can also be helpful to schedule fixed blocks of time to study with clear start and stop times, as well as specified break periods. Students can start with more difficult subjects first and also work on assignments or tests that are due first.

### Use Mental Exercises

Students should devise ways to build on their success, keeping their long-term goals in mind when pursuing better time management. Mental awareness can help with this. Individuals should try to be mindful of when they're falling into unproductive patterns and should identify specific triggers or distractions that lead to procrastination. Meditation and exercise might also help some people clear their heads and help them build confidence and focus when studying.

Time management is a key to academic success and organizing and planning one's day and tasks using mental exercises, seeking help and avoiding time wasters are some helpful time management strategies for college students.

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## Taking a Personal Leadership Inventory

Prof. Priti V. Jasud
IT Dept.

Working to become a good leader is essential for career advancement, even if you never hold a supervisory position.

Leaders can see both the holistic and the granular aspects of a particular problem. They have vision and are able to identify and execute the actions that need to be taken to reach a viable solution. They know how to galvanize and leverage their own talents and those of the people around them. They are able to deliver value to their customers, their colleagues, and themselves. And they constantly look for new opportunities to improve the system in which they work.

Even if you are not leading a team of coworkers, it is invaluable to hone your leadership skills. To aid in that pursuit, I recommend filling out a leadership inventory. Here's how to do it: Look at the list of leadership characteristics and qualities below. Write down experiences in which you have exhibited those characteristics. Think about the problems you solved that allowed you to learn or sharpen that particular leadership quality. For example, when was a time you demonstrated to yourself and your colleagues that you were a true connector of people and ideas? How did this manifest itself? What were the results of that undertaking? Then, after going down the list, pay attention to any gaps. Where there are holes in your leadership abilities, you can try to pursue opportunities to pick up those skills.

The beauty of the inventory is that you will probably see that you have certain leadership qualities you didn't realize you had. You'll better be able to see the big picture of who you are as a leader and employee. You'll get better at ensuring that teams and projects are being managed in the best ways possible. For example, realizing that you have engaged in conflict mitigation will make you more aware of potential friction that could arise in a certain project, enabling you to find a solution before things boil over.

A leader is an

**Connector,** who links previously disparate ideas, transforms a group of individual colleagues into an efficient team, and fuses teams together in an organization.

**Entrepreneur,** who challenges the status and looks for problems to solve and walls to knock down.

**Enabler** of team success, who wants to see team members advance and improve their skills.

**Visionary,** who sees the big picture and looks for links between everyday tasks and the overarching mission of the organization. Conflict mitigator, who helps minimize friction and spots conflict before it gets out of hand.

**Goal setter,** who knows the overall objective of each action and task.

**Tone setter,** who dictates how a team will communicate and ensures professionalism and respect among members.

**Executor,** who sees a project through from start to finish.

**Decision maker,** who acquires data from multiple sources, then picks a side and stands by it.

**Accountability taker,** who assumes responsibility for choices a team makes, whatever the consequences.

**Communicator,** who keeps everyone in the loop as a problem is being solved.

**Unifier,** who brings a team together and affords the members the chance to be successful.

## Techniques for Making the Case for Better Website

Prof. Niraj Telrandhe
CT Dept.

You don't need a degree in cyber security to see just how serious cyber attacks are for small businesses and ecommerce websites. The volume of attacks continues to rise, and businesses need to take every precaution to stay safe.

### How You Can Focus on Website Security

If you haven't taken a look at the latest cyber crime data, statistics, and predictions, you're probably in for quite a shock. According to online survey: By 2021, the total cost of cyber crime damage is expected to top $6 trillion. Cyber security spending will exceed $1 trillion from 2017-2021. It's believed that global ransomware damage costs exceeded $5 billion last year.

At a time when cyber attacks are at an all-time high, an alarming number of businesses aren't paying enough attention to website security. One study suggest as much as 86 percent of all websites have at least one serious vulnerability. The law of averages would suggest that your company's website falls into this category.

The good news is that website security is something you can improve and make a strength of your business. Here are some ways you can do this:

### 1. Invest in HTPPS

If your website is still operating under HTTP, it's time to transition to HTTPS. The latter is a website security mechanism that encrypts information sent between browsers and the web server. This prevents the classic "man-in-the-middle attack" in which cyber criminals steal credit card information.

Almost every reputable ecommerce business has HTTPS. Just ask for an organization, which considers its SSL certificate to be one of the most important investments the company has made.

As they explain, "We serve a high-end group of consumers who often spend thousands of dollars in a single transaction. HTTPS security allows us to put their minds at ease and assure them that our website is a safe place to conduct business."

If you're unsure of how to proceed, here's a good guide on getting set up with an SSL certificate.

### 2. Use Better Passwords

Password hygiene is a serious issue. The more proactive you are in this area, the less likely it is that your website will become compromised.

A lot of businesses use predictable or default passwords, which can easily be cracked by even the most amateur hackers. One practical way to significantly reduce risk is by strengthening your administrator passwords and regularly changing them every few weeks.

### 3. Encourage Employees to Hack

While you can probably identify the biggest security loopholes and fix them on your own, it's the little issues that go undetected that will ultimately trip you up. In order to catch these vulnerabilities, challenge your IT team to "hack" your website from time to time. Reward anyone who finds a loophole and then figure out a way to close it up.

### 4. Consider Cyber Insurance

In today's online environment, you can never be safe enough. Even if you've done everything you possibly can to secure your website, there's always a slight risk of attack. Considering that an attack can cost businesses thousands of dollars, it may be wise to invest in cyber insurance as a safety net against a major breach.

### 5. Lean in and Secure Your Website

Don't let another month go by without addressing security threats. The longer you wait to act, the more likely that you'll be targeted by a data breach or ransomware attack.

Now's the time to do something about it......

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## The Resume Master Guide

Prof. Pradnya S. Moon
CT Dept.

Starting college means you have officially entered the real world. If you don't already have a draft of a resume, make one now. Resume writing requires some real skillz, so give yourself some time to read up on how to make your resume as impressive as possible. How to format a resume

### Step 1: Header

Make your name bold and slightly larger font than the rest of the resume. You want your name to stand out so any employer who reads it will remember you.
Below your name, list your current mailing address, phone number, and the e-mail addressyou most frequently use.
You may use your permanent mailing address if you wish.

### Step 2: Education

Always list your most recent education first. Include your university, your school (e.g. Georgetown College), major, minor, and graduation year.
Include your GPA. You may also include your GPA for your major and minor if you wish, especially if they are higher than your overall GPA.

### Step 3: Experience

Fresher's can include their Internship Details List experiences, starting with your most recent position. On the first line write the name of the company, location and the dates you worked. On the next line write the title of your position. Include three or four sentences describing your position. Think about what you contributed in your job or organization and how your role was significant. The use of bullets makes the resume easy to read. Refer to our list of action verbs for help with selecting specific verbs.

### Step 4: Activities

This is the place to list your extracurricular activities, such as sports, on-campus involvement, or volunteer experence. You may provide a brief description of accomplishments and responsibilities for each if you wish,particularly if your work is relevant to the job at hand.

### Step 5: Skills

Important skills to include are:

Languages. Be sure not to overstate (basic, intermediate, advanced or fluent)

Technical skills. List specific and relevant software with which you are familiar (such as MS Word, Excel, PowerPoint, WordPerfect, Adobe Photoshop, or SPSS.)

Social media skills, if applicable to the position (e.g., Facebook, Twitter, Word Press, Pinterest)

Any specific training or certification programs you have completed that would be relevant to the job

You may list these under two separate subtitles ("Extracurricular Activities" and "Skills")

### Top resume writing mistakes

Writing a resume objective which doesn't match the job. Misspellings and grammatical errors are resume killers. Not including keywords that match the job posting. An outdated resume will make you look obsolete Including too much information. Including a career summary that doesn't match the job requirements Writing position descriptions that don't show what you accomplished

## Parallelism: A Need for Future

As we are heading towards new era, data processing is becoming tedious task as this data is converting into big data day by day. No matter whatever a processing that takes place till now is sequential but the sequential processing of big data is not possible in any way as it takes more process execution time. Thus the only solution to this problem is to bring parallelism.

Parallelism can be implemented in two possible ways viz; Software Parallelism and Hardware Parallelism. Software parallelism can be achieved by using some software (called as middleware) by creating multiple processes in the ready queue and schedule them parallel for the execution. Hardware parallelism can be achieved by fabricating more number of hardware devices in the system to achieve the speed up.

This concept of parallelism is also heavily dependent on architecture of computer system. Basically there are two types of architectures which does exist in terms of parallelism viz; Multi-processing architecture and multicomputer architecture. Multi-processing environment is made up of multiple processors' which together constitute one system. Memory is shared in such environment & the programming language which is used for this is shared memory programming. While multi-computer system is made up of set of multiple computers which may/may not be located in same geographic region. And the programming language used for this architecture is Message Passing Programming.

Speed up is the most important factor to compute the performance of parallel systems. Thus, parallelism is all about executing the process in parallel in order to achieve the speed up. More speed up means high is the performance of computer system. In future, parallelism will be most wide area of research & hopefully students will adopt it as challenge.

**Prof. Abhishek Nachankar**
CT Dept.

## Need of Materialized View in Data Warehousing Environment

Data Warehouse is a repository of large amount of data collected from multiple data sources. It is mainly used for processing of queries and detailed analysis of data that is useful for decision makers. Hence to make this data available in less amount of time is essential. Here comes the concept of Materialize View. Materialized view stores result of queries which improve query performance. Using Materialize view we can have result of query in less amount of time compared to access the same from base tables. It is not possible to materialize all the views since to materialize a view, requires cost for maintenance and also storage space. Hence proper materialized views selection is one of the important decisions in designing a data warehouse to get best possible results. So it is required to select materialized view which minimizes response time of query and cost of maintenance.

For generation of materialized view, large data is required. Huge amount of data can be generated with the help of tool like Automatic Record Generator. In this tool, there is no need to create the database manually.

Materialized views are created by considering 3 essential parameters like

1. Frequency of the query i.e number of times particular query gets executed into database. Using these parameter, only those queries that gets executed more number of times will get selected.
2. Next is storage required for created materialized view. This is required because if certain query is getting more space for storage will not be considered for creation.
3. Third parameter is response time of the query. This will check execution time for query and if query is taking less amount of time for execution then only it will be considered for generation of materialize view.

While considering above parameters for generation, an important clustering adaptive mechanism is used. In this mechanism, similar queries will get clustered into one and on such different clusters, by considering all the above factors materialized view will get generated.

**Prof. Shailesh Kurzadkar**
CT Dept.

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**Vaibhavi Rangari**
(Event Analyst)

Unity is strength.
when there is teamwork and
collaboration, wonderful things can be
achieved

No one can whistle a symphony. It takes a whole orchestra to play it

| | | |
|---|---|---|
| SAURABH DODKE | ABHISHEK INGLE | RUSHABH PATEL |
| SHAILY CHEDGE | ADITYA KAONJIYA | SAMIKSHA LADE |
| TINA BORADKAR | JAYESH BORKAR | SAURABH GATHADE |
| VISHAL KHELKAR | ROSHNI DUPARE | NIDHI TIWARI |
| SNEHA BAKALE | KRUTIKA FUNDE | PRAJIT DIYEWAR |
| SUMIT KATORE | MOHIT BHOGE | RAHUL SINGH |
| MONIKA RAGHORTE | MONIKA BHUTE | SHIKHAR JOSHI |
| SAKSHI NAWARE | PARNIKA CHOUDHARI | SAGAR KANDRIKAR |
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## Our Guides and Mentors

2nd year Computer Technology



3rd year Computer Technology



2nd year Information Technology



3rd year Information Technology

## 4th year Computer Technology

## 4th year Information Technology

# ACHIVEMENTS

## Miss Devisha Agrawal,
student of VIII<sup>th</sup> semester,
Computer Technology branch
bagged the 'BEST STUDENT
AWARD' (2017-18)



Student who got certified by
RHCSA(Red Hat Certified System
Administrator)

Placed Students falicited by
Hon. Chief Minister Shri. Devendra Fadanvis

Vishal Murarkar
(2nd year Computer Technology)
1<sup>st</sup> place in Marathon Race

Students from 2nd year and 3rd year
IT won the Dance Competetion in
NAVONMESH 2018

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# ARTICLES

### Data Science
### vs.
### Big Data
### vs.
### Data Analytics

## Data Science

What is a data scientist? What do data scientists do? Data scientists combine statistics, mathematics, programming, problem-solving, capturing data in ingenious ways, the ability to look at things differently to find patterns, along with the activities of cleansing, preparing, and aligning the data.

Dealing with unstructured and structured data, Data Science is a field that encompasses anything related to data cleansing, preparation, and analysis. Put simply, Data Science is an umbrella term for techniques used when trying to extract insights and information from data
Education for Data Science Roles
Eighty-eight percent of Data Scientists have a Master's Degree, and 46% have PhDs. Other skills data scientists need include:

• In-depth knowledge of SAS and/or R. For Data Science, R is generally preferred.
• Python coding: Python is the most common coding language that is used in data science along with Java, Perl, C/C++.
• Hadoop platform: Although not always a requirement, knowing the Hadoop platform is still preferred for the field. Experience in Hive or Pig is a huge plus.
• SQL database/coding: Though NoSQL and Hadoop are the major focus for data scientists, preferred candidates can write and execute complex queries in SQL.
• Working with unstructured data: It is extremely important that a Data Scientist is able to work with unstructured data—whether from social media, video feeds, audio, or other sources.

## Big Data

What is a big data analyst? According to Gartner, the definition of Big Data reads, "Big data is high-volume and high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision-making, and process automation." Big Data analytics find insights that help organizations make better business decisions.

A buzzword that is used to describe immense volumes of data, both unstructured and structured, Big Data inundates organizations of all sizes on a day-to-day basis. In other words, Big Data refers to humongous volumes of data that cannot be effectively processed with traditional applications. The processing of Big Data begins with the raw data that isn't aggregated or organized—and is most often impossible to store in the memory of a single computer.
Education for Big Data Roles
For those seeking Big Data roles, you'll need these:

• Analytical skills: The ability to be able to make sense of the enormous amounts of data that you get. With analytical problem-solving abilities, you will be able to determine which data is relevant to your solution.
• Creativity: You should have the ability to create new methods to gather, interpret, and analyze a data strategy.
• Mathematics and statistical skills: Good, old-fashioned "number crunching" is absolutely necessary.

## Data Analytics

What is the role of a data analyst? Data Analytics is the science of examining raw data with the purpose of finding patterns and drawing conclusions about that information by applying an algorithmic or mechanical process to derive insights. According to Forbes, the big data analytics market will surpass $200 billion soon.
The work of a data analyst lies in inference, which is the process of deriving conclusions that are solely based on what the researcher already knows; for example, running through a number of data sets to look for meaningful correlations between each other. Data Analytics is used in a number of industries to enable organizations to make better decisions as well as verify and disprove existing theories or models.
Education for Data Analytics Roles
Data Analytics roles typically require the following:
• Programming skills: Knowing programming languages are R and Python are extremely important for any data analyst.
• Statistical skills and mathematics: Descriptive and inferential statistics and experimental designs are also a must for data analysts.
• Machine learning skills.
• Data wrangling skills: The ability to map raw data and convert it into another format that allows for a more convenient consumption of the data.
• Communication and Data Visualization skills

Durgesh Pandey
3rd year IT

## DIGITAL MARKETING TRENDS 2018

It's time to create the digital marketing strategy for 2018. But before that, we should know the latest trends to work on the current techniques and strategies. In this post, I have put together the nine digital marketing trends for 2018.

### 1. Video Marketing Will Grow

A video is becoming the most popular channel in digital marketing trends and if utilized properly then can yield better results. It can have the positive impact on the business as it can successfully draw the attention of the audiences. Brands are creating video content to boost the search engine ranking, improving engagement and website traffic.

### 2. Voice Search Will Rise

Voice search is becoming extremely popular whether it from desktop or smartphone and by 2020, 50% of all searches will be voice search. It is important to optimize for voice search through long tail keywords. Content Marketers play a key role as it is difficult to add long tail keywords in the post but they make the whole task look very simple.

### 3. Artificial Intelligence will grow in 2018:

The presence of AI has already been felt this year through big data, Internet of Things and Machine Learning.

In 2018, it will contribute more towards its full potential. It can be seen in chat bots during the personalization of user experience. It also helps in making the decision simpler through predictive marketing.

### 4. Brands will Invest in Influencer Marketing:

Influencer Marketing is key to success in 2018 when it comes to digital marketing trends and it is worth to invest in it. People prefer to buy the products based on personal recommendations of the influencers. Influencers can create the branding on the social media channels. They have the strong follower base or blog to promote the products or services of the brand.

### 5. Personalization will be Key to success

Personalized posts are the key to success in 2018. Whether it is social media posts, emails or landing pages, use the power of personalization. It helps in driving the massive traffic to the site and results in the conversion as well.

### 6. SEO & Content Marketing Integration

SEO and Content Marketing should be integrated to drive the conversions to the site. Long tail keywords will be helpful in providing the first page rankings. SEO Analyst should search the long tail keywords and content marketers will help in placing those keywords rightly in the post to look natural. This will result in optimization and web pages will appear higher in the search results. Content Marketers also help in making the magnetic headline and compelling meta description in order to get higher click-through rates.



Weighting of Thematic Clusters of Ranking Factors in Google

### 7. Growth Of Mobile Marketing

Mobile Marketing is growing as the number of mobile users is increasing day by day. People check their mobile almost 50 times a day. The site should be responsive design or mobile friendly. Mobile SEO is necessary to stay ahead in the competition

### 8. Popularity of Social Media Marketing

Social Media is a powerful tool when it comes to digital marketing trends. People are highly active on social media so it should be explored for opportunities for lead generation or sales. Live video, Instagram stories, Facebook messenger ads are trending features which should be utilized while performing social media marketing in 2018.

### 9.User Experience Marketing will Increase

Create personalized experience using chatbot when they visit your website. Provide proper navigation with fewer popups on the site. Most of the searches are through mobile so make the mobile-friendly site.

Conclusion:

These are the digital marketing trends for 2018, start exploring them in your digital marketing strategy to boost the performance of the brand.

Arvind Meashram
Final Year IT

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## Trekk The Tech

**Fifty years** ago, a new vision of humanity's future first graced the world's consciousness: the vision of Star Trek. The brainchild of creator Gene Roddenberry, it ran contrary to the dominant ethos of its time of a world filled with the pollution and destruction of humans, overrun with selfish, unethical behavior, war, strife and conflict. The future that people feared was one of nuclear winter, unsafe air and water, unethical treatment of one another and of technology further and further separating us from our humanity. And

against that cultural backdrop was born the series of Star Trek.

Instead of a dystopian future where humanity brought about our own destruction, this was a future where technology existed to further the peaceful goals and ideals common to all humans. This was a future where the boundaries of states, nations and cultures were transcended.

This was a future where the dream of the United Nations was extended to not just all of Earth, but to a myriad of planets beyond our Solar System: A United Federation of Planets. Where we peacefully coexisted, shared technology and resources and where the accumulation of wealth or power was no longer a driving force in anyone's life. And the way we achieved that—in the Star Trek Universe was through developments that benefited us all.

Fall ill? Medical technology has advanced so far that all you need is the state-of-the-art equipment and a savvy doctor, and you'll be cured in no time. Need to communicate with someone on another world? Sub-space communication puts them within reach, at just the tap of a button on your shirt. Can't understand their language? A "universal translator" renders that completely irrelevant, with on-the-fly translation of languages occurring instantaneously. Need to travel someplace a long distance away? Warp drive and a transporter will get you there in no time. Over the past 50 years, technology has evolved and progressed at a pace that would have been unimaginable to even a savvy technophile of the 1960s. While many of these "fantastic dreams" of the original Star Trek have already become a reality, a few of these technologies seem to be forever

beyond our grasp. Sub-space communication—aside from the fact that "sub-space" doesn't exist—runs into the problem inherent to special relativity: no signal can move faster than light. Quantum entanglement can "cheat" this light speed, but

Warp drive, too, is a bit of a stretch. Thanks to some recent advances in general relativity, we've discovered a spacetime solution that admits faster-than-light travel from one location to another by the creation of a literal "warp field" within a bubble. But most shockingly, the transporter of Star Trek seems to be one invention that's forever beyond our reach, much to the chagrin of world travelers, would-be bank robbers and forbidden Lotharios everywhere. Sure, if you have a quantum particle on one side of a thin barrier, there's a finite-but-non-zero chance it will wind up on the other side, even if it doesn't have enough energy to get there. But for even a small collection of atoms, the probability of "tunneling" in that sense is so exponentially small, you could have every human that's ever lived wait the entire age of the Universe and never have a single one move as much as a micron. What you can do is transfer an arbitrary amount of information from one location to another through the process of quantum teleportation. The name is a bit a misnomer, since this isn't the teleportation of actual quantum particles, but of the information about the states of quantum particles. Make enough pairs of entangled particles between two different locations, and you can teleport that information from one location to another: you can move the state and the information of one object from point A to point B without having to move the object itself. This discovery was made in 1993 by the team of Charles H. Bennett, Gilles Brassard, Claude Crépeau, Richard Jozsa, Asher Peres and William K. Wootters in their paper, "Teleporting an unknown quantum state via dual classical and Einstein-Podolsky-Rosen channels." It's possible that combining this technique with the emerging technology of quantum computing could enable the entire information encoding a living human being to be scanned in and teleported from one location to another. Or, if you didn't see any need to destroy you, the original copy, perhaps you could be cloned entirely via this process! The challenge, however, is reconstructing that matter in the end state. Knowing what the information state of a human being is – including all their component particles – is one matter, but reconstructing that human being is quite another thing entirely. Unfortunately, this is one case where no matter how far technology advances, it will always be

bound by the laws of nature.

Yashasvi Nikhare
Final Year CT

## DATA SCIENCE:

**The term** Data Science has emerged recently with the evolution of mathematical statistics and data analysis. It is also known as data driven science, which makes use of scientific methods, processes and systems to extract knowledge or insights from data in various forms, i.e either structured or unstructured.

Let's Understand Why We Need Data Science
Traditionally, the data that we had was mostly structured and small in size, which could be analyzed by using the simple BI tools. Unlike data in the traditional systems which was mostly structured, today most of the data is unstructured or semistructured. Let's have a look at the data trends in the image given below which shows that by 2020, more than 80 % of the data will be unstructured.

This data is generated from different sources like financial logs, text files, multimedia forms, sensors, and instruments. Simple BI tools are not capable of processing this huge volume and variety of data. This is why we need more complex and advanced analytical tools and algorithms for processing, analyzing and drawing meaningful insights out of it.
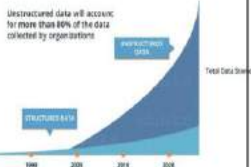


This is not the only reason why Data Science has become so popular. Let's see how Data Science is being used in various domains.

How about if you could understand the precise requirements of your customers from the existing data like the customer's past browsing history, purchase history, age and income. No doubt you had all this data earlier too, but now with the vast amount and variety of data, you can train models more effectively and recommend the product to your customers with more precision. Wouldn't it be amazing as it will bring more business to your organization?

Let's take a different scenario to understand the role of Data Science in decision making. How about if your car had the intelligence to drive you home? The self-driving cars collect live data from sensors, including radars, cameras and lasers to create a map of its surroundings. Based on this data, it takes decisions like when to speed up, when to speed down, when to overtake, where to take a turn – making use of advanced machine learning algorithms.

* Let's see how Data Science can be used in predictive analytics. Let's take weather forecasting as an example. Data from ships, aircrafts, radars, satellites can be collected and analyzed to build models. These models will not only forecast the weather but also help in predicting the occurrence of any natural calamities. It will help you to take appropriate measures beforehand and save many precious lives.

**Vinay Singh**
**Final Year CT**

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## THE WEB THEORY

**What** is Marianas Web? Is Marianas Web A Myth Or A Frightening Reality?
Ever heard of polymeric falcighol derivation? If yes, ever heard of quantum computing then? Because these are the two things you need in order to access Marianas Web, the darkest and most mysterious place on the Internet. Quantum computing is a technology that supposedly exists in governments.

Because of this, many claim that Marianas Web is the space that deposits the deepest, darkest secrets of humankind. Nobody knows for sure what they are. But people have speculated that Marianas Web contains governmental files, the location of Atlantis or the Holy Grail, or even the answer to ancient conspiracies. Some believe that since it's so difficult (to the point it's impossible) to access it, it became the communication network for the Illuminati. Polymeric falcighol derivation is yet another deep web secret which can be allegedly be found at the very deepest level of the deep web.

## Myth or Reality?
Don't take anything for granted on the Internet, including the Internet itself.
No one has proven that Marianas Web actually exists, but... no one has proven that it doesn't exist either. If someone buys into conspiracy theories, they'll believe in Marianas Web with no second thought. After all, who's to say the government hasn't been hiding these quantum computers from us all along? From my side we should not challenge the mysteries of this web because we can also become part of the mystery if we access the illegal content.
However, at the end, the Internet is classified as finite. Because of this, there's this infamous hierarchy known as "the levels of the Internet."
**Level 0: Common Web**
**Level 1: Surface Web**
**Level 2: Bergie Web**
**Level 3: Deep Web**
**Level 4: Charter Web**
**Level 5: Marianas Web**
There is more to write in this but this is enough to alert there are mysteries present which is illegal and we should not be a part of these theory.

**Shivam Rai**
**3 rd Year CT**

### Job One for Quantum Computers: Boost Artificial Intelligence

**In** the early '90s, Elizabeth Behrman, a physics professor at Wichita State University, began working to combine quantum physics with artificial intelligence — in particular, the then-maverick technology of neural networks. Most people thought she was mixing oil and water. "I had a heck of a time getting published," she recalled. "The neural-network journals would say, 'What is this quantum mechanics?' and the physics journals would say, 'What is this neural-network garbage?'"

Today the mashup of the two seems the most natural thing in the world. Neural networks and other machine-learning systems have become the most disruptive technology of the 21st century. They out-human humans, beating us not just at tasks most of us were never really good at, such as chess and data-mining, but also at the very types of things our brains evolved for, such as recognizing faces, translating languages and negotiating four-way stops.

***The Future of Quantum Computing***
After decades of research, have nearly enough oomph to perform calculations beyond any other computer on Earth. Their killer app is usually said to be factoring large numbers, which are the key to modern encryption. That's still another decade off, at least. But even today's rudimentary quantum processors are uncannily matched to the needs of machine learning.

***Quantum Neurons***
The main job of a neural network, be it classical or quantum, is to recognize patterns. Inspired by the human brain, it is a grid of basic computing units — the "neurons." Each can be as simple as an on-off device. A neuron monitors the output of multiple other neurons, as if taking a vote, and switches on if enough of them are on. Typically, the neurons are arranged in layers. An initial layer accepts input (such as image pixels), intermediate layers create various combinations of the input (representing structures such as edges and geometric shapes) and a final layer produces output (a high-level description of the image content).

Neural networks and quantum processors have one thing in common: It is amazing they work at all. It was never obvious that you could train a network, and for decades most people doubted it would ever be possible. Likewise, it is not obvious that quantum physics could ever be harnessed for computation, since the distinctive effects of quantum physics are so well hidden from us. And yet both work — not always, but more often than we had any right to expect. On this precedent, it seems likely that their union will also find its place.

**Dhanashri Gowardhan**
**Final Year CT**

## "A DROP OF WATER"

How amazing to think about a drop of water is ! Drop of water holds life, from physical to physiological ,from burning to cunning, from informal to formal, from social to political, see how.....There are so many facts about a drop of water in physics, chemistry, biology, etc.... Why a drop does take spherical shape? In physics, there is surface tension term. It makes a drop to take a spherical arid. But question arise how this surface tension come? Why does it act on earth's atmosphere? Why on liquid only? Why spherical? Why not triangular? Why science does involve study of this small factor?

Answer may be as follows- This drop thinks not to hurt anybody by giving injury. So, it tries its best ad takes spherical shape. It makes its smallest surface area so as to occupy less space on the earth .Its siblings together form water source like river, sea, etc. From starting to ending it teaches something . Taking spherical shape it teaches its discipline, specific manner, regularity....its tendency to go straight teaches us about affinity toward aim.   As I mentioned, it thinks about not  to hurt anybody and takes a specific shape addresses that first prepare yourself in such a way that you are called a perfect man. First make yourself able so that others can trust you and feel harmless with you.

A drop of water contributes in the formation of rivers, lakes, ocean etc. It becomes our hope. We can't quench without it .A drop of water never goes wastes. When it falls to oyster, it becomes pearls. When it falls on the lotus, it shines like a pearl making more delightful and attracting, it brings new life in area suffering from drought.

Though a drop of water consists of infinite H2O molecules they remain aggregated with cohesive force. It addresses unity. A drop of water remain unknown about its fate yet it prefers welfare of human being and organisms. After its utilization again it evaporates in seek another welfare.

**Afreen Jiwani**
**Final Year CT**

## CAN MONEY BUY HAPPINESS..???

A big question for all of us!!When it comes to money...it is desired by everyone, but it can't buy you everything. Some people would Say money can buy you happiness because they presume money could give them power, while others disagree. Whereas, from my perspective, I believe money could not buy eternal joy into your life, and if it can then it is temporary. Furthermore, most importantly money cannot buy you the emotions you get from love and affection. Now, what does happiness means? Happiness is not actually determined by what your bank account could afford, it is simply appreciating the small things life brings you .Happiness is more powerful than money because it gives us memories which can be cherished years to years which money can't. If you can see your money making a difference in other people's lives, it will make you happy even if the amount you gave was quite small. Yes, we need money to pay for the neacessities in life, but beyond that point, it truly doesn't matter how much or how little you have. "I've realized that while money allows you to do things, it doesn't bring joy and happiness. It only brings us more of what we already have. "Each day is a gift and you have to cherish it". If you're only worrying about money, there's so much you can miss out on. "No matter what your dream or how you wish to make a difference, take time to experience life and keep your priorities in check. Go on that trip, start a charity, visit a sick friend – whatever you wish to experience, do so without hesitation. If you come from a place of knowing that you matter, that you're enough and that you appreciate what's going well in life, you'll have more joy and, at the end of the day, money can't buy joy."

**Apurva Waghmare**
**Final year CT**

## When you lose someone........

God says,"the reason some people have turned against you and walked away from you without reason has nothing to do with you it is because . I have removed them from your Life because they can not go where I am taking you . Next they will only hinder you in your next level  because they have already served their  purpose in your life let them go and keep moving ,grater is coming" says the lord. So moved on  and don't look back.
Because at the end of life what really matter is not what we bought but what we built ; not what we got but what we shared; not our competence but our character and not our success but our significance live a life that matters live a life of love

**Pragti Palsapure**
**Final Year IT**

## ."The PRACTICE"

Practice makes man perfect
we all know that
so, what do you practisce everyday!
Do you practice enjoying your life
Do you practice peace or
Do you practice aa lot of complaining ?

If you complain
you will get so good at it,
that you being an expert
will find fault in everything.

Do you practice being worried ?
congratulations !
you are going to be very good  at it,
that everything will worry you
including the dog you never had.

**Pratik Khadse**
**Final Year IT**

## Positive and Negative Mindsets

A large part of our day is already programmed before the day even starts. We do the programming, and our minds set us up for the way we react to what happens along the course of our day.
Both positive and negative mindsets produce their own unique kinds of tone that influence our daily experience.
The power of our minds to determine the tone of our day is tremendous, and so it makes sense to realize what our minds are doing.
If we pay attention, we may catch ourselves thinking negative thoughts. Once we are more fully aware of doing that we can change the habit. The way our day turns out is, in part, up to us.

**Aditya Billore**
**Final Year IT**

## THE ATTITUDES

An Old Russian tale says that the inhabitant of heaven and hell both sit at tables loaded with delicious food. The ground rules for the feast are that the dinners must eat with extremely long-handled forks at the end of the handle.

The people in hell starve because they cannot figure out how to feed themselves that way. But, for the people in heaven, this is not a problem. They simply reach across the table and feed each other.

The inhabitants of heaven and hell live with the attitudes they had while they were on earth. The story is a reminder of the importance of what we do in the present moment. Our choices make us who we are, not only for this life, but also for the next.

Our everyday thoughts and actions can have tremendous consequences, reverberating into eternity.

**Avantika Mate**
**Third Year IT**

## Bad Luck? Good Luck? Who Knows?

A poor oriental farmer lost the only horse he had. When the villagers heard that the horse had run off, they sympathized with the farmer and said, "Bad Luck". The farmer answered, "Who can say?" On the next day, the horse returned home with ten other horses. When the villages heard this, they returned and said, "Good Luck." The farmer replied, "Who can say?"
Later that day, while training one of the new horses, the farmer's son fell the horse and broke his leg. Again, the villagers sympathized and said, "Bad luck." The farmer replied," Who can say?"
On the following day, an invading army came into the village and took all young men away as captives. The farmer's son was not taken because of his broken leg.
Sometimes we succeed in getting what we think will be good for us, and it turns out to be disaster and sometimes apparent disaster turns out to be good fortunes. When has not experienced this paradox in his or her life?
The constant flow of positives and negatives in our lives teaches us to flow freely with them, and not to get stuck by taking either pole too seriously.

**Nikhil Nidhan**
**Third Year IT**

## -"Wake Up Girls"

It's the time to wake up,
To think beyond the make-up.
It's the time to fight
For getting our freedom and right.
It's the time to show our importance
Without hiding our intelligence.
It's the time to change people's mind,
Who has became totally blind.
It's the time to speak,
And give Hippocratic society a kick.
It's the time to ask questions,
On Delhi rape case type situations.
It's the time to change people's view,
Who only wants us crush and crew.
It's the time to make our self STRONG
To stop anything which is WRONG.

Sneha Waghmare
Final Year IT

## "A Slave to Technology"

We're a slave to technology, it's
taken over our lives
Without this evil monster, it's
impossible to survive
Yesterday's ways
Don't apply today
Long for those times, much easier
to survive

Jitesh Raut
Third Year CT

## "The Need To Feel Special"

The need to feel special is common to human beings.
We want to know that we matter to others; we
want to be seen. We strive to achieve some special
status in the eyes of others; how we are viewed by
others matters to us. One way of knowing that we are
special is when people treat us differently than
they treat others. When we are singled out for special
treatment, given special privileges, receive
special favors, we feel special.
A problem can arise, however, when we feel uncom-
fortable with acknowledging our desire to be
special. Many people not only feel uncomfortable
with this desire, but will go to great lengths to deny
their desire for specialness as if it were a sign of
weakness or other flaw in their personality.
These people often tend to act-out their desire to be
special rather than acknowledge it. And they often
act out in ways that adversely affect their relation-
ships. They are the folks who are always altering
menus when ordering in a restaurant requesting
special treatment in the form of dietary requirements.
They often will often request that you modify plans to
suit them or adjust schedules to accommodate
their special needs.

Priti Kapgate
Final Year IT

## "Technology"

Technology
It would be technology
if
i wrote this poem on a computer.
it would be technology
if
everything was digital
it would be technology
if
people
invented new tings.
but....
I like the way the world is now

Ankit Thakur
Final Year CT

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Coming together is a beginning.
Keeping together is a progress.
Working together is a success.
- Henry Ford

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KDK College of Engineering,Nagpur is one of premier institutions of science and technology in India.Founded in 1984, It is known for high quality of knowledge imparted to its students and its cutting edge research. Face-IT was founded in the Year-2006,January with dual aims of providing the budding engineers and innovators of the country a platform for sharing and spreading ideas of science and technology,FACE-IT,a brainchild of eminest Professors and an actuated group of students of CT and IT department of KDKCE,working on a non-profit basis.The dictum of the founders is fostered and followed by the work even today.

The major part of the operations of FACE-IT,in its early years, was organization of the Annual Tech Fest "ECLECTICA" (later its name was changed to FAHRENHEIT) at KDKCE premises. Since last few years apart from the FAHRENHEIT,FACE-IT has been organizing primaryobjective of the FAHRENHEIT was to provide a national platform for students to showcase their talent.FACE-IT has succesfully organized this Techfest for years , ensuring that the graph of its activities has always been rising. FACE-IT is managed by honorable HOD,CT & IT Department, a group of eminent Faculty-in-charges and an Organizing body,who take the major decisions regarding the planning and exececution of the events.A team of more than 300 Co-ordinators.

Our Annual Techfest-FAHRENHEIT had already earned the tag of most popular and much awaited Technology Festival in the entire vidharbha region through its quality and optimum hospitality offered to the participants.It is renowed for its unique aggregation of events,exibition,lecture series , technical symposiums and competitions that it organizes every year.FACE-IT brand name carry with it, the responsibility of providing the best and the latest in science and technology to the upcomong tech geeks, with its doctrine of social and technical welfare remaining intact.Promising to bring you the best, as it has been doing since its origin in 2006, the legacy of more than half a decade will continue.

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