



SFC - BYTES

E-NEWS LETTER



DEPARTMENT OF COMPUTER SCIENCE
ST. FRANCIS COLLEGE FOR WOMEN, HYD-16

DEPARTMENT OF COMPUTER SCIENCE

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In the year 1988, the Department of Computer Science was the first department to be established under autonomy. With humble beginnings of three teaching and one non-teaching staff guiding a batch of 20 students in the BSc Mathematics-Physics-Computer Science stream, Late Mrs. Nirupama Narasimhan spearheaded the branch as the first Head of the Department. Today, students can choose combinations of either Statistics or Electronics along with Mathematics and Computer Science under the BSc programme. Additionally, a BSc Honours programme is offered in Software Engineering.

CSC DEPT.

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Ten years after the department's inception, a post-graduate course in MSc Computer Science was introduced in 1998. As of academic year 2018-19, the department caters to the course requirements of over 1,250 students across various undergraduate streams in the sciences, commerce and management. Additionally the PG course has 49 students across two years. Running a department this large is no small feat—Computer Science is home to 18 teaching and seven non-teaching staff, who function under the able leadership of their current HoD Dr. Sr. Sujatha Yeruva. In addition to the regular programmes, the department also offers an e-learning Diploma programme in CCNA (CISCO Certified Network Associate) and a Certificate Course in Adobe Photoshop.

The department is equipped with nine dedicated labs, well-furnished and interconnected with high-speed internet and updated systems, both in terms of software and hardware. Notably, the CISCO lab, Mathematica Lab, Statistica and SPSS Lab, Commerce Lab with Tally and Language Lab are built to cater to the specific requirements of students from different streams.

Furthermore, students are exposed to various new skills and developments by means of workshops, guest lectures and field trips organized by the department. A seminar on Network Security was conducted in January of 2011. A series of two workshops, Embeddedtronics and Hack X-Ploit, was organised on-campus in December of 2015. Embeddedtronics was conducted by Mr. Surya Kompella, CEO of Kriyative Edge, on robotics, specifically the construction of an obstruction-sensing robot. HackX-Ploit was conducted by Mr. Rahul Tyagi of Lucideus Tech Private Limited, New Delhi and dealt with 'Network Security and Ethical Hacking.'

An international conference on Science Technology & Mathematics (STEM) Education and Faculty Development was conducted in the college by Prof. P. Suresh Verma, Profes-

sor of CSE and Dean IT of the University College of Engineering, Adikavi Nanayya University, in November of 2017.

The faculty continually publish several notable works in renowned publications. In 2018 alone, the department has contributed to eight publications.

The Department of Computer Science is part of the SPECTRUM club, which is an amalgamation of the 13 science branches. The department's contribution to SPECTRUM includes relevant projects and events on cryptography, network models, internetworking, and Photoshop.

The department celebrated its 25th year anniversary in 2013. Christened 'Computer Science Day,' the 19th of August, 2013 featured an array of academic and leisure events.

2018 being its 30th year anniversary, a two-day event, 'C@nnect,' was launched. C@nnect 1.0 was a student-organised event while C@nnect 1.1 was an academic event that entailed twin workshops on Robotics and 'The Internet of Things'.

The department also renders a special service to the functioning and administration of the college by fulfilling the role of IT Admin since the year 1998. Between the years 1998 to 2005, the automation of year-wise exam results was taken up by then-HoD Ms. NirupamaNarasimhan. From 2005 to 2018, the automation of non-CBCS semester pattern exam results had been undertaken by former HoD Ms. Padmasri. Starting in 2016, the IT Admin team has been led by Dr Sr. Sujatha, who has spearheaded the automation of the CBCS system exam results, admissions, attendance and fee payments.

The Computer Science Department has been the recipient of several laurels and recognitions by the college management. Several members of the faculty have been awarded for their contribution to various areas such as National Service Scheme (NSS), IT Admin and Exam Branch automation.

FOG COMPUTING AND IOT

The Internet of Things (IoT) is generating an enormous volume and variety of data as billions of devices are interconnected throughout the world. Cloud computing serves as an infrastructure for doing analysis on IoT data. But moving all data from these things to the cloud for analysis would require vast amount of bandwidth. As existing cloud models are not designed for the volume, variety, and velocity of data that the IoT generates, a new model is required for analyzing and acting on IoT data. It is called either Edge computing or Fog computing. Fog Computing is a paradigm that extends Cloud computing and services to be closer to the things that produce and act on IoT data. In other words, data processing and applications are concentrated in devices at the network edge rather than the cloud. Similar to cloud, Fog provides data, compute, storage and application services to end-users. Any device with computing, storage, and network connectivity can be a fog node. It is proposed to secure user's data in cloud using user behavior profiling and decoy information technology. According to this technique, when unauthorized person tries to access the data, the system will generate fake documents. Fog and Cloud Computing are interconnected with each other and IoT systems require both.

*Confidence
doesn't come
when you have
all the
answers....
But it comes
when you are
ready to face all
the questions.*



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DEEP LEARNING

Deep learning is a subcategory of machine learning which is itself a subcategory of artificial intelligence. Deep learning is the source of much of the hype surrounding AI today. Behind the hype, however, big tech companies are pursuing deep learning to do very practical things. And whereas the internet, which unleashed trillions in market value, transformed several industries—news, entertainment, advertising, etc.—deep learning will work its way into even more. Deep learning methods are based on learning data representations, as opposed to task-specific algorithms. Learning can be supervised, semi-supervised or unsupervised. Deep learning architectures such as deep neural networks, deep belief networks and recurrent neural networks have been applied to fields including computer vision, speech recognition, natural language processing, audio recognition, social network filtering, machine translation, bioinformatics, drug design, medical image analysis, material inspection and board game programs, where they have produced results comparable to and in some cases superior to human experts. Deep learning models are vaguely inspired by information processing and communication patterns in biological nervous systems yet have various differences from the structural and functional properties of biological brains (especially human brains), which make them incompatible with neuroscience evidences. Deep learning use a cascade of multiple layers of nonlinear processing units for feature extraction and transformation. Each level learns to transform its input data into a slightly more abstract and composite representation. In an image recognition application, the raw input may be a matrix of pixels; the first representational layer may abstract the pixels and encode edges; the second layer may compose and encode arrangements of edges; the third layer may encode a nose and eyes; and the fourth layer may recognize that the image contains a face. Importantly, a deep learning process can learn which features to optimally place in which level on its own. The "deep" in "deep learning" refers to the number of layers through which the data is transformed. As deep learning advances, it should automate and improve technology, transportation, manufacturing, healthcare, finance, and more. And as is often the case with emerging technologies, it may form entirely new businesses we have yet to imagine.

MOBILE AD-HOC NETWORK (MANET)

MANET stands for Mobile adhoc Network. It is a wireless network. It consists of mobile devices connected wirelessly which are self-configured, self healing without a fixed infrastructure. The devices in a MANET are free to move by changing locations and linking to other devices with a wireless connection. As the nodes move freely, the topology changes frequently. Each node maintains information required to continuously route the traffic to the specified node unrelated to its own use by behaving as a router. This is the challenge in building a MANET. These networks may be connected to the larger Internet or may operate by themselves and may contain one or multiple and different transceivers between nodes. MANET's circa 2000-2015 typically communicate at radio frequencies (30MHz-5GHz). This can be used in road safety, ranging from sensors for environment, home, health, disaster rescue operations, air/land/navy defense, weapons, robots, etc.



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*Challenges
makes you
more
responsible.
Always
remember that
life without
struggle is a life
without
success..*



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The various types of MANETS are 1.VANET (Vehicular ad hoc network) 2. SPANET (Smartphone ad-hoc network) 3. iMANET (Internet-based mobile ad hoc network), 4. Hub-Spoke MANET – Multiple sub-MANETs may be connected in a classic Hub-Spoke VPN to create a geographically distributed MANET and uses CloudRelay 5. Military or tactical MANETs are used by military units for real-time requirement, fast re-routing during mobility, data security, radio range, and integration with existing systems. 6. Flying adhoc networks (FANETs) are composed of unmanned aerial vehicles for providing connectivity to remote areas. Advantages: 1.MANETs are robust as it uses multi-hop to relay information in the decentralized network. 2. They are flexible as the topology is not fixed. 3. It has the potential to resolve issues like isolation/disconnection from the network. 4. They are scalable and have meager administration costs. Disadvantages: 1.Variations in network performance due to no fixed architecture. 2. The data may have to be resent a lot of time as the topology determines the interference and connectivity. 3. Finding a model that represents human mobility remains an open.

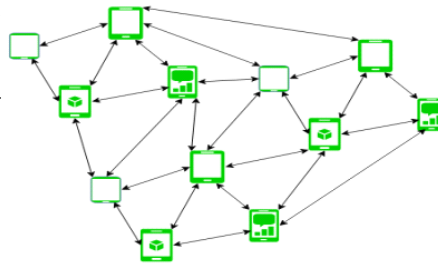


Figure - Mobile Ad Hoc Network

Optimism is the faith that leads to achievement. Nothing can be done without hope and confidence.

FOLDABLE SMART-PHONES

Day by Day as technology is developing, new inventions taking place, to make human life more easier and comfortable. Smartphone manufacturers have spent their valuable long years in making devices slimmer by foldable smartphone. It looks very thin. It was much expected that Samsung or Huawei would be the first ones to launch a foldable smartphone but the Chinese company beats big tech companies in launching the **Royole FlexPai**. The popular Chinese company Royole Technology has come with a new technology, the World's first ever foldable smartphone known as the Royole Flexpai. As the name indicates it can easily foldable, which makes the device smaller and pretty slim. It can be transformed into a tablet. The **Royole FlexPai** has different versions– 6 GB RAM with 128 GB internal storage and 8 GB RAM with 128 GB storage and 8 GB RAM with 512 GB storage. If you need to have a foldable smart phone, you can pre-order a developer's model from US & UK which will ship out in December. The FlexPai costs \$1,318 (£1,209) for the 6GB of RAM/128GB variant and \$1,469 (£1,349) for the 8GB of RAM/256GB version. So if you are in hurry to look go for it. Australian pricing wasn't released, but that converts to about AU\$2,180 and AU\$2,440, respectively. The foldable phone turns into a 7.8-inch tablet after folding. The screen has 1920 x 1440 resolution and 4:3 aspect ratio looks flat. It features a dual-lens camera setup, including a 20-megapixel telephoto lens and a 16-megapixel wide-angle lens. The phone features a bendable 7.8-inch AMOLED screen that's made out of lexible plastic. According to latest news, Samsung Said to Reveal Some Features of Foldable Phone in 2nd week of November 2018.



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FUTURE IPHONES - TECHNOLOGIES

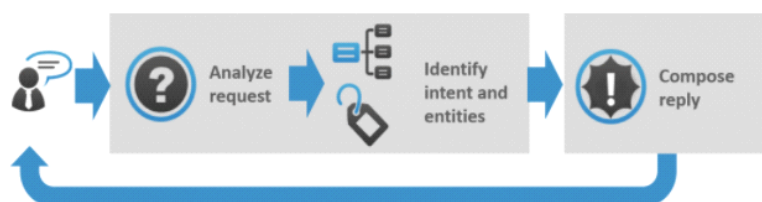
If you want to look beyond , 2019 iPhones are already begin to bubble to the surface. Starting with the display, by 2019, enough OLED panels should be available for Apple to use OLED for all of its iPhones. Currently, the iPhone 8, 8 Plus and SE still use LCD screens. Speaking about the number of rear cameras on the iPhone could increase to three in 2019. Details are sparse on how the triple lens setup would work, other than it would allow the iPhone to feature a 3X optical zoom instead of the 2X zoom featured on current dual-lens iPhones. A contributor obtained a schematic showing what is purported to be this year's iPhone X Plus. That schematic shows what appear to be three lenses, could also be two lenses and a sensor for the flash. The image indicates that this year's iPhones will look the same as last year's, but with slightly smaller changes. Apple is developing technology that could make the iPhone a notably different device in 2020. The company is working on MicroLED displays, which are expected to arrive on the Apple Watch and an unannounced but widely rumored augmented reality headset. That technology, which makes brighter, thinner displays possible, could eventually come to the iPhone. Apple is working on curved displays, perhaps related to the MicroLED development, which would curve inward from the top of the device to the bottom. Apple is also working on incorporating touch less gestures into a future iPhone, which would allow people to interact with their phones without tapping the display.



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CHATBOT



Recently, new tools designed to simplify the interaction between humans and computers have hit the market: Chat-



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bots or Virtual Assistants. What exactly is a chatbot? A chatbot is an artificial intelligence (AI) software that can simulate a conversation (or a chat) with a user in natural language through messaging applications, websites, mobile apps or through the telephone. Why are chatbots important? A chatbot is often described as one of the most advanced and promising expressions of interaction between humans and machines. However, from a technological point of view, a chatbot only represents the natural evolution of a Question Answering system leveraging Natural Language Processing (NLP). There are two different tasks at the core of a chatbot: user request analysis returning the response. How a Chatbot Works: As you can see in this graphic, a chatbot returns a response based on input from a user. This process may look simple; in practice, things are quite complex. User request analysis: this is the first task that a chatbot performs. It analyzes the user's request to identify the user intent and to extract relevant entities. Importance: Chatbot applications streamline interactions between people and services, enhancing customer experience. At the same time, they offer companies new opportunities to improve the customers engagement process and operational efficiency by reducing the typical cost of customer service. Which chatbot application is right for you? There are different ap-

proaches and tools that you can use to develop a chatbot. Depending on the use case you want to address, some chatbot technologies are more appropriate than others. In order to achieve the desired results, the combination of different AI forms such as natural language processing, machine learning and semantic understanding may be the best option.

DEATH BY COMPUTERS

189 people recently died in a tragic crash. The crew and passengers of Lion Air JT610 on board a brand new Boeing 737 MAX 8 never had a chance. The less than three months old plane had a new software in it. They called it MCAS or Maneuvering Characteristics Augmentations System. MCAS was a system that didn't exist in any of the Boeing 737's before. However, when they built the 737 MAX version, in layman's term, they built the plane with a larger and more efficient engine. However, this larger engine, which delivered a further 14% fuel efficiency had to be fitted further forward under the low wings of the 737. This potentially may cause the plane to stall. Stalling is bad. It is basically when a plane stops flying and starts falling. In order to avoid this, Boeing installed the new MCAS software. This software is designed to tell the plane to move its nose down to increase its speed and avoid it from stalling. So here comes the problem. In the computer world, we have this term called GIGO. The old school fella's will know this. Yes. Garbage In, Garbage Out. The problem based on the findings so far is this. On the plane there is a sensor called the Alpha Vane which measures the Angle of Attack (AOA) of the plane. It looks like a small little wing, and they have two of it, one on the pilot side, and the other on the co-pilot's. The sensor's job is to tell the computer the angle the plane is flying at. And if the AOA of the plane is too high, this will result in the plane stalling. Typically the AOA is below 15 to 20 degrees, and the new MCAS software will push the plane's nose down if it thinks that the AOA is too high. Now. With flight JT610, the Alpha Vane sensor measuring the AOA on the Captain's side was reported to be faulty. So they changed it. That fault was reported from the equally harrowing flight from Bali to Jakarta. On the fateful final flight, the plane which arrived from Bali the night before, had the sensor changed, and then it took off in the morning. No one knew what was really wrong with the plane, or about the new MCAS software. No one. Not the maintenance folks, and in fact not even the pilot. He apparently wasn't trained on it yet. So they flew the plane. And once in the air, the faulty sensor told the computer that the plane is stalling. The computer then, without the pilot ever knowing pushed the nose of the plane down further, while the pilot was trying to raise the plane. In this battle between the pilot and the computer, the computer won. And the pilot, the crew, and the passengers lost and they died. The plane was too low, and the pilot didn't have enough air to raise the plane and fly it. The computer literally flew the plane into the ocean. A few weeks later, Boeing issued an update on the plane, and informed that should the plane have an issue with it's AOA sensors, one of the way to stop the computer was to switch it off! Apparently 189 lives could have been saved, had the pilot knew about the software, and flipped a switch to turn it off. A switch! A single simple switch was the difference between life and death. I am still fuming thinking about this. A switch! Computers are really going to be the end of us all, because while a man makes mistakes, to really, really screw up; you need a computer!

Sources: <https://www.bbc.com/news/world-asia-46373125>



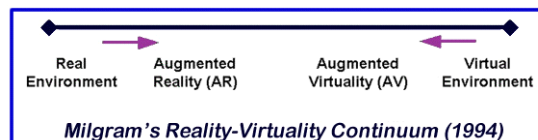
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*Believe in
yourself! Have
faith in your
abilities! With a
humble and
reasonable
confidence in
your own
powers you can
be successful
and happy.*

VIRTUAL REALITY VS AUGMENTED REALITY

One of the biggest confusions in the world of augmented reality is the difference between augmented reality and virtual reality. Both are earning a lot of media attention and are promising tremendous growth. Virtual [HYPERLINK "https://en.wikipedia.org/wiki/Virtual_reality"](https://en.wikipedia.org/wiki/Virtual_reality) reality (VR) is an artificial, computer-generated simulation or recreation of a real life environment or situation. It immerses the user by making them feel like they are experiencing the simulated reality firsthand, primarily by stimulating their vision and hearing. VR is typically achieved by wearing a headset like facebook's Oculus equipped with the technology, and is used prominently in two different ways: To create and enhance an imaginary reality for gaming, entertainment, and play (Such as video and computer games). To enhance training for real life environments by creating a simulation of reality where people can practice beforehand (Such as flight simulators for pilots). Virtual reality is possible through a coding language known as VRML (Virtual Reality Modelling Language) which can be used to create a series of images, and specify what types of interactions are possible for them. Augmented [HYPERLINK "http://www.augment.com /"](http://www.augment.com/) reality (AR) is a technology that layers computer-generated enhancements atop an existing reality in order to make it more meaningful through the ability to interact with it. AR is developed into apps and used on mobile devices to blend digital components into the real world in such a way that they enhance one another, but can also be told apart easily. AR technology is quickly coming into the mainstream. It is used to display score overlays on telecasted sports games and pop out 3D emails, photos or text messages on mobile devices. Leaders of the tech industry are also using AR to do amazing and revolutionary things with holograms and motion activated commands. Augmented reality and virtual reality are inverse reflections of one in another with what each technology seeks to accomplish and deliver for the user. Virtual reality offers a digital recreation of a real life setting, while augmented reality delivers virtual elements as an overlay to the real world.



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*The will to win,
the desire to
succeed, the urge
to reach your full
potential... these
are the keys that
will unlock the
door to personal
excellence.*

SFC - SEQUENTIAL FUNCTION CHART

Sequential function chart (SFC) is a graphical programming language used for programmable logic controllers (PLC). It is one of five languages defined by IEC 61131-3 standard. The SFC standard is defined as preparation of function charts for control systems and was based on GRAFCET. It can be used to program processes that can be split into steps. Main components of SFC are: i. Steps with associated actions ii. Transitions with associated logic conditions iii. Directed links between steps and transitions. Actions are only executed for active step. It is also possible to insert LD (Ladder diagram) actions inside an SFC program. A step can be active for one of two motives. i. It is an initial step as specified by the programmer. ii. It was activated during a scan cycle and not deactivated since. SFC is an inherently parallel language in that multiple control flows-program organization units (POUs) in the standards parlance can be active at once.



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BRAIN READING TECHNOLOGY

Mind reading computers may refer to: Interpretation of human thought/cognition by brain activity without depending on our talking or speech or action. In science fiction, computers can perform telepathy. In computer science research, affective computing or brain-computer interfaces are developed. Scientists have developed a variety in artificial intelligence system that can understand and decode the human mind, and interpret what a person is seeing by analysing brain scans. An AI algorithm called a convolution neural network, which has been instrumental in enabling computers and smart phones to recognise faces and objects. Convolution neural networks, a form of "deep-learning" algorithm, have been used to study how the brain processes static images and other visual stimuli. A method to view how the brain processes movies of natural scenes. Many researchers acquired 11.5 hours of Functional Magnetic Resonance Imaging (fMRI) data from each of three women subjects watching approximately 900 video clips, including those showing people or animals in action and nature scenes. The model was then used to decode fMRI data from the subjects to reconstruct the videos, Actual video images were then presented side-by-side with the computer's interpretation of what the person's brain saw based on fMRI data. It scans the brain every two seconds, and the model rebuilds the visual experience as it occurs. It is possible to view how the brain divides a visual scene into pieces, and re-assembles the pieces into a full understanding of the visual scene. The Major applications are Brain-reading has been suggested as an alternative to polygraph machines as a form of lie detection. The other way to represent polygraph machines is blood oxygenated level dependent functional MRI technology (BOLD fMRI). This technique involves the interpretation of the local change in the concentration of oxygenated hemoglobin in the brain.

CYBER SECURITY

Cyber security is referred as a set of techniques used to protect the integrity of networks and data from unauthorized access. It refers to obstructive methods used to protect information from being stolen and misused. It requires an understanding of information threats, such as viruses and other malicious code. Cyber security techniques include identity management, risk management and incident management. It can be applied on any level i.e personal, corporate or governmental devices or networks. Cyber security is a very broad category which encompasses numerous hardware and software technologies. Passwords are one of the biggest cyber security tool that people uses every day to keep their data safe and integrated. Few of the other cyber security tools include: i. Anti-virus/anti-malware software ii. Software patches iii. Firewalls iv. Two-factor authentication v. Encryption. The main use of cyber security includes protecting information, data and networks from major cyber attacks. These cyber threats are of many forms few of which are application attacks, malware, ransomware, phishing, exploit kits etc. Unfortunately, cyber adversaries have learned to launch automated and sophisticated attacks using these approaches at all the levels including lower levels and costs. As a result, proceeding with cyber security strategy and operations can be a challenge, specially in government and enterprise networks where, in their most disruptive form, cyber threats often target at secret, political, military or infrastructural aid of a nation, or its people. Few of the Steps to maintain cyber security: 1. Use strong passwords ii. Keep your software updated iii. Manage your social media settings iv. Use of firewalls proves beneficial v. Never disclose your personal information on social network-



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*If you want to
succeed you
should strike
out on new
paths, rather
than travel the
worn paths of
accepted
success.*



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CLOUD TECHNOLOGY

ing site.

The word "cloud" is used as a metaphor for the Internet and a standardized cloud-like shape, used to denote a network on telephony schematics. The specifications of how the end points of a network are connected. The term "cloud computing" was popularized with Amazon, releasing its Elastic Compute Cloud product in 2006, references to the phrase "cloud computing" appeared in 1996, with the first known mention in a Compaq internal document. It can be defined as the shared pools of configurable computer system resources and higher-level services, that can be rapidly provisioned with minimal management effort, often competing the "Internet". Cloud computing relies on sharing of resources to achieve consistency and economies of scale, similar to a public utility. Third-party clouds enable organizations to focus on their core businesses instead of expending resources on computer infrastructure and maintenance.

5 Deployment models : Private cloud, Public cloud, Hybrid cloud, HYPERLINK "https://en.wikipedia.org/wiki/Cloud_computing" Other. Community HYPERLINK "https://en.wikipedia.org/wiki/Cloud_computing" cloud, Distributed cloud, Multicloud, Big Data cloud, HPC cloud. According to advocates cloud computing allows companies to avoid or minimize up-front IT infrastructure costs. Cloud computing allows enterprises to get their applications up and running faster, with less maintenance and improved manageability. It enables IT teams to more rapidly adjust resources to meet fluctuating and unpredictable demand. It provides a "pay-as-you-go" model. Cloud computing has privacy concerns because the service provider can access the data that is in the cloud at any time. It could accidentally or deliberately alter or delete information. Users can encrypt data to be processed or

CRYPTO JACKING

Crypto jacking is the process of accessing other accounts to mine crypto currencies, like bit coin. Currency is then sent to the hacker. Computers infected with crypto jacking malware will work very slowly, and the users are not at all aware of this that their accounts are hacked as 'Coin Mining' malware is always difficult to detect. If a machine doesn't have any security, an app with malware will run silently in the background with just one indication: low performance. Malware (dangerous software) increases power consumption, decreases the performance of the computer, leaving the user with an unwanted bill, as it consumes so much energy to mine one Bit coin which nearly costs from \$531 to \$26,170. And while crypto jacking is a relatively new threat, a recent report from the Cyber Threat Alliance (CTA) indicates a huge 459% increase in the rate of unauthorized crypto jacking this year. How to prevent crypto jacking: i. Install ad blockers ii. Use endpoint protection that can detect known crypto miners iii. Update your web filtering tools iv. Keep a track of browser extensions. How to respond to a crypto jacking attack: i. Kill and block website delivering tools ii. Update browser extensions. iii. Learn and adapt about crypto jacking.

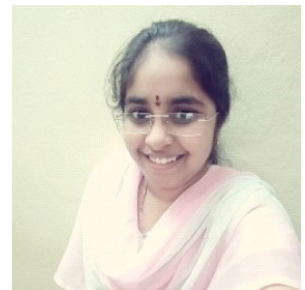


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*A creative man
is motivated by
the desire to
achieve, not by
the desire to
beat others.*



T.N.L.S.TEJASWININI

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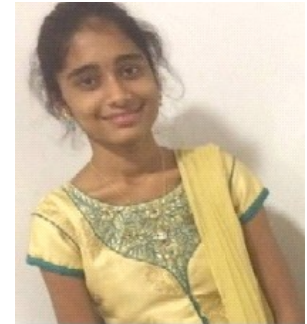
LET THE BLIND SEE THE WORLD WITH THEIR TONGUES



Neuroscientist in 1960s stated that "we see with our brains not our eyes". Now, a new device trades on that thinking and aims to partially restore the experience of vision for the blind and visually impaired by relying on the nerves on the tongue's surface to send light signals to the brain. About two million optic nerves are required to transmit visual signals from the retina-the portion of the eye where light information is decoded or translated into nerve pulse -to the brain's primary visual cortex, with Brain port, the device being developed by neuroscientists at Middleton, visual data are collected through a small digital video camera about 1.5centimeters in diameter that sits in the center of a pair of sunglasses worn by the user. Light settings and shock intensity levels as well as a central processing unit (CPU), whose converts the digital signals into electrical pulse-replacing the function of the retina. From CPU the signals are sent to the tongues via "lollipop" an electrode array about nine squares centimeters that sits directly on the tongue. White pixel yield a strong electrical pulse, black pixels translate into no signals. THE CHALLENGE OF RECHECKING VISION: Wicab is working with the University of Pittsburg Medical Centers UPMC Eye Center for further testing on brain port. We can't just throw up an eye chart we have to take back and describe the rudimentary precepts that these people are getting, "Nau" says. The images are in black and white pixilated. Many people who have acquired blindness are desperate to get their vision back; Nau says all those sensory substitutions cannot fully restore sight. Along with the blind, the brain port could help people with visual defects such as glaucoma, which regards sight at the center of the visual field.

MOBILE OPERATING SYSTEM

Android or iOS? Haven't we all been a part of this war at least once in our life? I believe most of us have. Why do we compare only android and iOS? Firstly, what is OS? An operating system or OS is a software program that enables the computer hardware to communicate and operate with the computer software. Without a computer operating system, computer and software programs would be useless. When computers were first introduced, the user interacted with them using a command line interface. Today, almost every computer is using a GUI (Graphical User Interface) operating system that is much easier to use and operate. A mobile operating system, also called a mobile OS, is an operating system that is specifically designed to run on mobile devices such as mobile phones, smart phones, and other handheld devices. When you purchase a mobile device the manufacturer will have chosen the operating system for that specific device. Often, you will want to learn about the mobile operating system before you purchase a device to ensure compatibility and support for the mobile applications you want to use. Some of the most famous mobile OS are : 1. Android OS (Google Inc.) 2. iOS (Apple) 3.Windows Mobile (Windows) 4.Bada (Samsung Electronics) 5.BlackBerry OS (Research In Motion). However, the features provided by Android and iOS are more adaptive and robust. Here

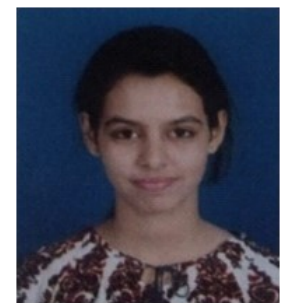


NAVANEETHA P

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The most valuable Skill or Talent that you could ever develop is that of directing your thoughts toward what you want.



PRARTHANA

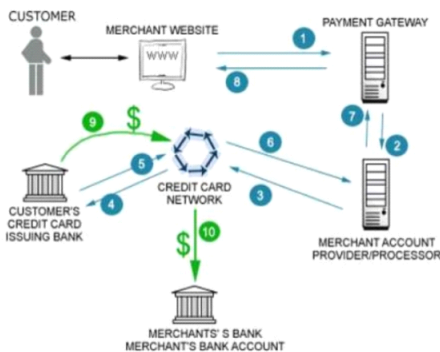
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are some interesting and less known facts about Android and iOS: 1. there is an Android running device in space!! NASA equipped Floating space robots with Nexus S handsets. These devices run on Android Gingerbread. 2. Most of the people think that the name of Android's logo character is also Android, but it's not true. The actual name of Android Mascot is Bugdroid. 3. Android 3.0 is the only version to never run on phones. 4. We know the fierce rivalry between Apple and Samsung. However, Samsung happens to be the creator of iPhone's smart chips. In spite of their existing rivalries, Apple doesn't fail to offer this contract to Samsung. That's indeed a unique revelation about the iOS platform.

DESIGN AND IMPLEMENTATION OF E SECURE TRANSACTION



The e-Transaction system is the designed targeted at the future banking solution for the users who is having multiple bank accounts .This interface integrates all existing banks and provides business solutions for both retail and corporate. The main vision is to eliminate all the diversities amongst banks, which generally client faces at the time of any transaction. By doing so client will used to only one systematic standard way of banking and thereby they will be at

ease using this system. Secure Electronic Transactions (SET) was a communication protocols standard for securing credit card transactions over insecure networks, specifically the Internet. There are many E-Secure transactions available in the market as like paytm, paypal, payumoney etc. Paypal is Payment Data Transfer (PDT) provides merchants with the ability to display transactions details to buyers who are redirected back to their site up to payment completion. With an increasing reliance on online technology, business transactions of all types are increasingly being handled online and remotely. This exceptional growth in electronic transactions has suggested the need for a faster, more secure and more convenient method of user verification method than passwords and tokens can afford. The framework brings virtual business transaction to what is obtainable in the actual world since authentication is based on human trait, this will go a long way to making online transaction safer and secure thereby increasing users opinion and patronage in the cashless society. Further improvement can be made to extend the work to mobile application platform, other works like shop boot can be integrated to help the customers derive maximum satisfaction in the market, also as technology advances, the biometric authentication can be made multimodal to enable alternative to identity verification.



*A Satisfied Life
is better than a
Successful Life
because our
Success is
measured by
others. But our
Satisfaction is
measured by
our own Soul,
Mind and
Heart .*



RAYI SAHITHI

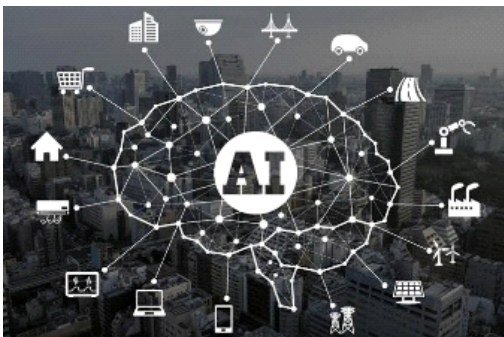
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WAR FIELD SPYING ROBOT USING NIGHT VISION WIRELESS CAMERA

Nowadays, several students are showing a lot of interest on robotic projects. They create a lot of interest as compared to other projects. In education level, these projects on robotics are very popular, they are line following robot, pick and place robot, fire fighting, wall tracking, humanoid and Hexapod etc. The main intention of this project to design a robotic vehicle using RF technology and wireless camera, where RF technology is used for remote operation and wireless camera is used for monitoring purposes. The robot along with a camera can transmit video with night vision capabilities. This type of robot is helpful in the war fields for the purpose of spying. An 8051 microcontroller is used for the desired operations. This project uses a night vision camera to capture images even in dark places and transmits wirelessly to a TV receiver unit. These robots are used in military applications like sending the information to the control unit and spy on enemy lands. This robot is controlled by using RF communication with a set of push buttons. Furthermore, this project can be designed using DTMF technology. Using this technology we can control the robotic vehicle by using a cell phone. Compare to RF technology, this technology has an advantage over a long communication range.

ARTIFICIAL INTELLIGENCE



Alexa', 'Siri', and 'Google' these are the names we call out now and perhaps more often than we call out those of friends and family members. Artificial intelligence is not part of a science-fiction future but it is our reality. Artificial Intelligence is the simulation of human intelligence processed by machines, especially computer systems. The concept of what defines AI has been changed over the

time and there has always been an idea of building machines which are capable of thinking like human beings. Human beings have been proven uniquely capable of interpreting the world around us. AI can be thought of simulating the capacity for abstract, creative thought. It is particularly the ability to learn using the binary logic of computers. Machine learning is a category within the larger field of Artificial Intelligence. It is also concerned with conferring upon machines the ability to learn. Deep learning on the other side is a subset of machine learning. Thus machine learning is just one of the approaches to reifying artificial intelligence, and ultimately eliminates the need to hand-code the software with a list of possibilities and how the Machine Intelligence ought to react with each of them. Thus, we see that AI has made daily life a lot easier. Artificial Intelligence is also a fundamental part of the concept of the Internet of Things, a world where machines and devices all communicate with each other to get the work done and leaving us free to relax and enjoy life. In the coming years, we expect an increased adoption of AI in Edge devices, offering speed, agility and cost-effective solutions for new-age enterprises looking for real-time intelligence in today's connected world.



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*The Life that
you are living
now, is also
a dream of
millions.
So always be
satisfied with
your life. Be
Happy in
every moment*



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MOTHER BOARD

A motherboard is the main printed circuit board (PCB) found in general purpose micro-computers and other expandable systems. It holds and allows communication between many of the crucial electronic components of a system, such as the cpu and memory, and provides connectors for other peripherals. Design: A motherboard provides the electrical connections by which the other components of the system communicate. it also contains the central processing unit and other subsystems. A typical desktop computer has its microprocessor, main memory, and other essential components connected to the motherboard. Form factor: Motherboards are produced in a variety of sizes and shapes called computer form factor. A case's motherboard and power supply unit form factor must all match, though some smaller form factor motherboards of the same family will fit larger cases. This is one of the reasons that laptop computers are difficult to upgrade and expensive to repair. The motherboard layout for laptops depends on the laptop case. Major Motherboard Components: Central Processing Unit (CPU), Basic Input/Output System (BIOS), Complimentary Metal Oxide Semiconductor Random Access Memory (CMOS RAM) Expansion Bus Chipsets Switches and Jumpers.

MOTION GRAPHICS

Motion graphics are pieces of digital footage or animation which create the illusion of motion or rotation, and are usually combined with audio for use in multimedia projects. Motion graphics are usually displayed using electronic media technology, but may also be displayed via manual powered technology. Examples of motion graphics are thaumatrope, phenakistoscope, stroboscope, zoetrope, praxinoscope, flip book. The term motion graphics distinguishes still graphics from those with a transforming appearance over time, without over specifying the form while any form of experimental or abstract animation can be called motion graphics, the term more typically refers to the commercial application of animation and effects to video, film, TV, and interactive applications. Motion graphics extend beyond the most commonly used methods of frame-by-frame footage and animation. Motion graphics can be distinguished from typical animation in that they are not strictly character driven or story based and often represent animated abstract shapes and forms such as logos or logo elements. Motion graphics continue to evolve as an art form with the incorporation of sweeping camera paths and 3D elements. One of the most popular motion graphics tools is a particle system. A motion graphics technology that is used for generating multiple animated elements. Elements of a motion graphics project can be animated by various means, depending on the capabilities of the software. These elements may be in the form of art, text, photos, and video clips, to name a few. The most popular form of animation is key framing, in which properties of an object can be specified at certain points in time by setting a series of key frames. Another method involves a behavior system which is found in Apple Motion that controls these changes by simulating natural forces without requiring the more rigid but precise key framing method and this another method involves the use of formulas or scripts.

Source: "<https://en.wikipedia.org/wiki/Keyframing>"



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Do the difficult things while they are easy and do the great things while they are small. A journey of a thousand miles must begin with a single step.



B. AISHWARYA

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LUA

Lua meaning the moon in Portuguese is a lightweight, multi-paradigm programming language. It is designed to use in applications from games to web. It's really fast, extensible and powerful. It was born in Brazil and compared to well-known programming languages it's distinguished for its compactness, speed and its focus on management of data. It was designed in such a way that it can be inserted in languages like C, C++, D, Ada and Pascal. It's small with only an executable file of size 200kb. Lua as a language is simple and any programs which can be written in Python or Ruby can also be written in Lua. Compiling is also easy and quick on any platform which has an ANSI C compiler. The syntax is similar to Pascal but is closer to Ada. It contains only a handful of keywords and symbols by which anyone who knows a scripting language will find lua easy, small and fast. Luac is a compiler which transforms lua code into an encrypted form which is barely readable. It does not lose anything in terms of performance than the source code. In conclusion, learning a new language is useful, interesting and even fun. But by learning Lua you'll be doing a real investment.



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COMPUTERS IN SPORTS

Computer technology has made advances in sports by leaps and bounds over the past couple of decades. Computers have brought about a revolutionary leap in various sectors; sports, and sports science is no exception. The entry of computers into the world of sports changed it radically and permanently. The first and the foremost use of computers is that we can meticulously arrange the records of each and every season of a sport, records of individual players using databases which helps in pulling relevant statistics by giving specific criteria about a player or team, and receive useful information which can thereby be used to enhance performance as it pertains to the statistical scenario being studied. Moreover we can store match videos and watch later as players watch other players playing styles from different angles to learn them through videos or they want to watch their own past performances in order to remove drawbacks using various computer capabilities like slo-mo replay, the forward/reverse replay, on-screen analysis. Computer-aided manufacturing technology has massively improved the standard of equipment and protective gear, and has made contact and risky sports much safer. Crucial equipment such as helmets, balls, bats, skates, or hoops can be made safer, sturdier, and more comfortable through computer technological programs where the best example is the helmet designed by Riddell company. The next vital role of computers is in pattern recognition where advanced video technology and software can be used to identify weak links in the opponent's game, may it be individual or team, and movement of any object like Hawk-Eye technology, which traces the path or trajectory of a moving object—a ball, in this case—and accurately determines whether the object has crossed a specific line or mark. Computers have changed sporting forever, from the way athletes are coached to the way we watch and are able to provide great insights into the fundamentals of a sport for both spectators and coaching staff.



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TECHNOLOGY OR TECH-NO-LOGIC???

"Technology is a queer thing .It brings you great gifts with one hand and its stabs you in the back with the other" – Charles perey snow. About a 100 years ago, may be talking to someone who is in another country was a wild dream, but what a drastic change!! Today, even kids know how to operate an ipad and make a video call. Well, we should really appreciate the way it has made our lives better. But on the other hand, what about its effect on the mental well being on the teenagers? Three billion people, around 40% of the world's population, are spending an average of two hours every day on the internet with its ease of availability comes a deadly side effect-addiction It has taken over the youth whose effects on them cannot be ignored. The youth is vulnerable to the illegal and unethical content. Though unintentional they are exposed to a lot of criminal activities. Teens who are on social media for a longer period are prone to many disorders like insomnia, aggressive tendencies, social isolation, depression and, sometimes, antisocial behaviors too. Recent surveys conducted in America estimated that around 10-15 million people are suffering from the internet addiction. If we observe the impact of cyber bullying only then will we know how deeply it is developing an inferiority complex amongst the teenagers. Now lets talk about the biggest loophole of the internet, the cyber crime which is rapidly evolving with in no time. It starts from a simple e-mail mischief; email bombing to crashing servers IPR theft, money laundering, cyber war and what not!!!!It is not shocking to know that India stands 11th in ranking for cyber crime and 3rd most targeted country for phishing attacks. Probably these figures might increase in the coming days. Though internet as an entity is not demonic in nature, its imprudent usage is bond to harm us. Hence it is not enough if we just use the smart technology, but we should know how to use it smartly so that it won't outsmart us!!!

BRAIN TO BRAIN COMMUNICATIONS USED IN HUMANS

Tapping directly into someone's brain in order to share thoughts isn't just for Spock anymore . An international team of researchers were able to replicate the Vulcan Mind Meld by creating a device that allows two people to share information through thought. The researchers tested the technology by separating the users over 8,000 km (5,000 mi) apart – with one user in France and the other in India. The paper has been published in PLOS ONE. "We wanted to find out if one could communicate directly between two people by reading out the brain activity from one person and injecting brain activity into the second person, and do so across great physical distances by leveraging existing communication pathways", co-author Alvaro Pascual –Leone said in a press release. "one such pathway is , of course, the internet, so our question became , "could we develop an experiment that would bypass the talking or typing part of internet and establish direct brain-to-brain communication between subjects located far away from each other in India and France?" The device connects directly to the users' scalps and impulses from the sender were picked up via electroencephalogram (EEG) as well as by image – guided and robot-assisted transcranial magnetic stimulation(TMS). The signal was encoded and sent via the internet to the user on the other end. Once it reached its target destination, the code was then interpreted by a computer interface and delivered to the recipient. The device worn by the recipient stimulates phosphenes, which appear as flashes of light even though there isn't actually any light entering the eye. (you can see this phenomena for yourself by going into a darkroom,closing your eyes, and then pushing your eyeball). The phosphenes are delivered in a pattern, which needs to be deciphered by the recipient who wears a blindfold to block out other visual stimuli.



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PIXEL BUDS



Listed among the top 10 breakthrough technologies of 2018, Babel fish ear buds offer near real-time translation. A dream which would break all linguistic barriers from around the world, has taken to life in this era. In the Douglas Adams' "The Hitchhiker's Guide to the Galaxy", one of the many technology predictions was the Babel fish. It featured a tiny yellow life that was inserted into human ear, fed with brain-wave energy which translates any language. In reality, Google has developed its

own version of babel fish, called Pixel buds, which offers translation over more than 40 languages. To use this facility, one needs Pixel Buds, Google smart phone, and Google Translate app. The working contains a chain of technologies involving- 1) VAD-Voice activity detector 'turns on' the system using touch control for translation after omitting the background sounds. 2) LID-Language identification distinguishes identical languages like Hindi & Urdu, Ukrainian & Russian, etc. 3) ASR-Automatic speech recognition fills in gaps of missing words and information, using rules of spoken grammar and pronunciation dictionary, after breaking down the speech into words. 4) NLP-Natural language processing decodes the meaning of input and re-encodes that message in a different language with all the nuances. 5) Speech synthesis works on the natural sounding of speech from a string of words. A conversation between two bi-linguistic people can be held with one person wearing the ear buds and the other holding the phone. The ear bud wearer starts the conversation, which is translated by the app and is played on the phone. The one with the phone responds like-wisely. Thus, offering instant translation. In a world ever so globally involving, linguistic barriers are un-avoiding obstacles. As long as there is no limit to imagination, technology and human brains unite as one to invent devices to turn dreams into reality.



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Anything is possible for those with a dream, a plan , and the determination to make it happen.

ARTIFICIAL INTELLIGENCE WILL TAKE A LEAP FORWARD, WITHOUT HUMAN DATA

2017 was the year that AlphaGo Zero taught itself the game of Go and within 40 days became better than any human or artificial player ever existed. It did so without any human data as input and purely played against itself. As a result, it taught itself strategies and moves no human has ever thought of and arguably progressed the evolution of the game of Go exponentially in very short timeframe. This achievement marks a significant milestone in the development of Artificial Intelligence. In 2018, this is only continue and we will see more examples of artificial intelligence that will behave in unexpected ways, as it already did so this year. In 2017, for example, AI developers from GOOGLE built algorithms that had to compete for scarce resources, resulting in increasingly advanced strategies to beat the component. GOOGLE BRAIN developed algorithms that created new encryption methods, unlike any seen before, to protect information from neutral networks. Finally, Facebook had to shut down two algorithms that created its own secret language, unsolicited and used advanced strategies to get what it wanted. If one thing



BINITHA DUTTA

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becomes clear from these developments, it is that Artificial Intelligence will be fundamentally different to Human intelligence. With the AI ARMS RACE in full swing, governments and organizations are increasing their investments in the development of ever more intelligent AI. In September 2017, Putin said that “Whoever becomes the leader in the sphere will become the ruler of the world.” signalling that Russia will intensify its AI activities. On the other side of the world, China aims to outsmart the USA in AI, with Europe unfortunately nowhere to be seen. The AI arms race seriously scares well-known entrepreneurs such as ELON MASK and STEPHEN HAWKING and a solution for the existential threat of AI is still far away. The combination of an AI arms race and developments where Artificial Intelligence can be trained without human data will likely result in massive steps forward in 2018. As Artificial Intelligence becomes smarter, more money will flow into it. However, ordinary organizations, as well as small and medium enterprises, are likely to miss out, as the power of Artificial Intelligence will consolidate among just a few players and countries. Cyber security and Artificial Intelligence: Cyber security is becoming essential to everyday life and business, yet it is increasingly hard to manage. Exploits have become extremely sophisticated and it is hard for IT to keep up. Pure automation no longer suffices and AI is required to enhance data analytics and automated scripts. It is expected that humans will still be in loop of taking actions, hence the relationship to ethics. But AI itself is not immune to cyber attacks. We will need to make AI/DL techniques more robust in the presence of adversarial traffic in any application area.

*Determination
gives you the
resolve to keep
going in spite of
the roadblocks
that lay before
You.*

ARTIFICIAL INTELLIGENCE WILL RESHAPE THE BUSINESS STRATEGIES

AI brings enormous changes to business operations, reshaping entire industries with the power of advanced technologies and software. Some companies now acknowledge the value of implementing the AI strategies for their business, and a major leap towards AI is on the way. Large companies with over 100,000 employees are more likely to implement the AI strategies, but for them, this process can be especially challenging. 2018 will be the year when the leading firms will incorporate AI applications into their strategic and organizational development. Additionally, there is a potential for algorithms marketplaces, where the best solutions created by engineers or companies can be shared, bought, and deployed for organizations' individual use. Brave ideas that used to be hard to believe, are becoming real. The constant development of machine learning and AI technologies will make every business become data-driven, and every industry smarter. After years of background work on prototypes and ideas, the new solutions will be breathtaking. Virtual assistance for patients, computational drug discovery, and genetics research give a glimpse of the amazing use cases in medicine. Many more applications for automation, robotization, and data management in different industries will bring significant changes. Healthcare, construction, banking, finance, manufacturing — every existing industry will be reshaped.



TAPPA KEERTHI

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MSC 1CS

REPORT ON C@NNECT 1.1

Aiming to provide an intense training, on the trending fields in today's world of learning –IoT & Robotics, the department of computer science hosted a two-day workshop on August 31 to September 1, 2018.

This year marks the pearl jubilee of UG courses and vicennial jubilee of PG courses of the computer science department.

Speaking on the occasion of workshop-inaugural, Dr.Sr. Sujatha Yeruva, Head, Department of computer science said “We need to explore our minds to explore new learning and interests”.

On this occasion our beloved principal Sr.Sandra Horta released the department's e-Newsletter SFC-Bytes. Sr. in her message encouraged the students to remain connected not just to machines but to humankind too in this highly technological world.



Mr.Surya, Managing Director of Kriyative Edge, and the head of our resource team for the workshop, appreciated the student interest, and said, being inquisitive is necessary, to understand our strengths and refine our capabilities.

The event was basically designed, to bring the computer science students on a single platform, and share the information on IoT and Robotics and strategies needed for living, in today's virtually connected world.

The workshop was organized by Department of Computer Science, St. Francis College, in association with Kriyative Edge, Hyderabad.



Learning is the beginning of wealth.

Learning is the beginning of health. Learning is the beginning of spirituality.

Searching and learning is where the miracle process all begins.

The first step toward success is taken when you refuse to be a captive of the environment in which you first find yourself.

REPORT ON IOT

The workshop on IoT with 160 students culminated today with an over whelming response.

During these two days,the Kreative Edge team shared their insights, real life scenarios, practical uses and application of IoT.

The workshop was spread over 4 Sessions covering theoretical and practical concepts of the IoT.

The first session conducted in the Capitanio Hall by Mr.Raj Kumar, from Qualcomm introduced IOT in the simplest way giving insight into what is IOT to its applications, architecture and importance in our world today.

Optimism is the faith that leads to achievement. Everything can be done with hope and confidence.



The Second session was a hand on session in computer labs focused on programming the Arduino kits to control the output of a device based on the inputs.

The third session scheduled for today began at the Capitanio Hall by giving detailed information about IoT, Clouds, and Servers. Followed by hands on in the lab to operate the IoT kit by working on the project "blinking with the led"

The 2 days were an enriching experience for the participants getting to know about the latest industry trends.



It does not matter how slowly you go as long as you do not stop. The past cannot be changed. The future is yet in your power.

REPORT ON ROBOTICS

Mr. Ravi Teja , Tech Associate of Kriyative edge, started the remarkable session with an introduction to robotics. He gave no scope for doubts, as he very concisely, but informatively explained, all the necessary knowledge, covering from the beginning of robotics, to the functional modules, firmware ie., Arduino boards and software Arduino software.



There is only one difference between Dream and Aim. Dream requires effortless sleep and Aim requires sleepless efforts. Sleep for Dreams and wake up for Aims...!

Our students, had hands on experience on understating and programming the Arduino kits on the first day of the workshop, and on day 2 they practiced to operate the robot, as an obstacle detector. They also programmed the robot for a game “Maze runner”.

Mr. Ravi Teja’s session was very lively and our students were very involved in the learning. Mr. Ravi Teja too complimented the quality participation of our students.



Excellence is never an accident; it is the result of high intention, sincere effort, intelligent direction, skillful execution and the vision to see obstacles as opportunities.

There was outstanding feedback for both sessions and students were very happy for enlightening them with enriching experience.