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SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGINEERING SHEGAON



SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGINEERING, SHEGAON

IEEE Students' Branch



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EVENT REPORT 2017-18

S. N	Title of Activity	Organizer / Resource person	Date	No. of Beneficiaries /Participants
1	Workshop on "Introduction to Calculators"	IEEE Coordinators	8/9/2017	203
2	Social Activity on "Basics of Computers"	IEEE Coordinators	15/9/2017	150
3	Workshop of "DS7 Solidworks"	Kaustubh Pathak and Swapnil Mistry BE Third Mech Engg	21/9/2017	20
4	Training Program on "Effectively and efficiently utilizing the IEEE Xplore platform for project and research"	Mr. Chandrakant Ganvir, IEEE Certified Trainer, EBSCO Information Service, New Delhi	6/1/2018	20
5	The Ultimate Talk (Public Speaking Competition)	IEEE Coordinators	17/01/2018 19/01/2018 24/01/2018	11
6	IEEE Paper Presentation	IEEE Coordinators	16/02/2018	4
7	Two Day Workshop on "Hands on VLSI Circuit Design using Cadence"	Prof. S. P. Badar E & TC Dept SSGMCE	17/03/2018 To 18/03/2018	21



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8	Two Day Workshop on “Hands on VLSI Circuit Design using Cadence”	Prof. S. P. Badar E & TC Dept SSGMCE	31/03/2018 To 01/04/2018	21
9	YP Guest Lecture on ‘Cognitive Radio’	Mr. Suyog Vyavahare, YP IEEE Bombay Section	7/04/2018	20
10	Summer School on Internet of Things	Dr. K. B. Khanchandani Prof. P. R. Wankhede	11/06/2018 To 07/07/2018	27
11	Summer School on CMOS VLSI Circuit Design	Dr. K. B. Khanchandani Prof. S. P. Badar	11/06/2018 To 07/07/2018	19

SPACEX

Space Exploration Technologies Corp., doing business as SpaceX, is a private US aerospace manufacturer and space transportation services company headquartered in Hawthorne, California. It was founded in 2002 by Elon Musk with the goal of reducing space transportation costs to enable the colonization of Mars. SpaceX has developed the Falcon launch vehicle family and the Dragon spacecraft family.

SpaceX's achievements include the first privately funded liquid-propellant rocket to reach orbit (Falcon 1 in 2008), the first private company to successfully launch, orbit, and recover a spacecraft (Dragon in 2010), the first private company to send a spacecraft to the International Space Station (Dragon in 2012), the first propulsive landing for an orbital rocket (Falcon 9 in 2015), the first reuse of an orbital rocket (Falcon 9 in 2017), and the first private company to launch an object into orbit around the sun (Falcon Heavy's payload of a Tesla Roadster in 2018). SpaceX has flown 18 resupply missions to the International Space Station (ISS) under a partnership with NASA. NASA also awarded SpaceX a further development contract in 2011 to develop and demonstrate a human-rated Dragon, which would be used to transport astronauts to the ISS and return them safely to Earth. SpaceX conducted the maiden launch of its Crew Dragon spacecraft on a NASA-required demonstration flight on March 2, 2019 and is set to launch its first crewed Crew Dragon later in 2019. On 11 March at 8:45 a.m. EST, the SpaceX Crew Dragon completed its first uncrewed flight that splash-landed in the Atlantic. The flight named Crew Dragon Demo-1 has demonstrated the Crew Dragon's ability to safely transport crew to ISS and back.

more energetic geostationary transfer orbit mission. In March 2017, SpaceX became the first.

In September 2016, CEO Elon Musk unveiled the Interplanetary Transport System, a privately funded initiative to develop spaceflight technology for use in crewed interplanetary spaceflight. In 2017, Musk unveiled an updated configuration of the system, now named Starship and Super Heavy, which is planned to be fully reusable and will be the largest rocket ever on its debut, currently scheduled for the early 2020s.



VIRTUAL REALITY

Virtual reality (VR) is a simulated experience that can be similar to or completely different from the real world. Applications of virtual reality can include entertainment (i.e. gaming) and educational purposes (i.e. medical or military training). Other, distinct types of VR style technology include augmented reality and mixed reality.

Currently standard virtual reality systems use either virtual reality headsets or multi-projected environments to generate realistic images, sounds and other sensations that simulate a user's physical presence in a virtual environment. A person using virtual reality equipment is able to look around the artificial world, move around in it, and interact with virtual features or items. The effect is commonly created by VR headsets consisting of a head-mounted display with a small screen in front of the eyes, but can also be created through specially designed rooms with multiple large screens. Virtual reality typically incorporates auditory and video feedback, but may also allow other types of sensory and force feedback through haptic technology.

Application:-

Virtual reality is most commonly used in entertainment applications such as video gaming and 3D cinema. Consumer virtual reality headsets were first released by video game companies in the early-mid 1990s. Beginning in the 2010s, next-generation commercial tethered headsets were released by Oculus (Rift), HTC (Vive) and Sony (PlayStation VR), setting off a new wave of application development. 3D cinema has been used for sporting events, pornography, fine art, music videos and short films. Since 2015, roller coasters and theme parks have incorporated virtual reality to match visual effects with haptic feedback.

In social sciences and psychology, virtual reality offers a cost-effective tool to study and replicate interactions in a controlled environment. It can be used as a form of therapeutic intervention. For instance, there is the case of the virtual reality exposure therapy (VRET), a form of exposure therapy for treating anxiety disorders such as post traumatic stress disorder (PTSD) and phobias.

In medicine, simulated VR surgical environments under the supervision of experts can provide effective and repeatable training at a low cost, allowing trainees to recognize and amend errors as they occur. Virtual reality has been used in physical rehabilitation since the 2000s. Despite numerous studies conducted, good quality evidence of its efficacy compared to other rehabilitation methods without sophisticated and expensive equipment is lacking for the treatment of Parkinson's disease. A 2018 review on the effectiveness of mirror therapy by virtual reality and robotics for any type of pathology concluded in a similar way. Another study was conducted that showed the potential for VR to promote mimicry and revealed the difference between neurotypical and autism spectrum disorder individuals in their response to a two-dimensional avatar.



ETHICAL HACKING

Hackers can be classified into different categories such as white hat, black hat, and grey hat, based on their intent of hacking a system. These different terms come from old Spaghetti Westerns, where the bad guy wears a black cowboy hat and the good guy wears a white hat.

White Hat Hackers:-

White Hat hackers are also known as Ethical Hackers. They never intent to harm a system, rather they try to find out weaknesses in a computer or a network system as a part of penetration testing and vulnerability assessments.

Ethical hacking is not illegal and it is one of the demanding jobs available in the IT industry. There are numerous companies that hire ethical hackers for penetration testing and vulnerability assessments.

Black Hat Hackers:-

Black Hat hackers, also known as crackers, are those who hack in order to gain unauthorized access to a system and harm its operations or steal sensitive information.

Black Hat hacking is always illegal because of its bad intent which includes stealing corporate data, violating privacy, damaging the system, blocking network communication, etc.

Grey Hat Hackers:-

Grey hat hackers are a blend of both black hat and white hat hackers. They act without malicious intent but for their fun, they exploit a security weakness in a computer system or network without the owner's permission or knowledge.

Their intent is to bring the weakness to the attention of the owners and getting appreciation or a little bounty from the owners.

Miscellaneous Hacker:-

Apart from the above well-known classes of hackers, we have the following categories of hackers based on what they hack and how they do it.

Red Hat Hackers:-

Red hat hackers are again a blend of both black hat and white hat hackers. They are usually on the level of hacking government agencies, top-secret information hubs, and generally anything that falls under the category of sensitive.

Blue Hat Hackers:-

A blue hat hacker is someone outside computer security consulting firms who is used to bug-test a system prior to its launch. They look for loopholes that can be exploited and try to close these gaps. Microsoft also uses the term BlueHat to represent a series of security briefing events.

3-D PRINTING

The 3D printing process builds a three-dimensional object from a computer-aided design (CAD) model, usually by successively adding material layer by layer, which is why it is also called additive manufacturing, unlike conventional machining, casting and forging processes, where material is removed from a stock item (subtractive manufacturing) or poured into a mold and shaped by means of dies, presses and hammers.

The term "3D printing" covers a variety of processes in which material is joined or solidified under computer control to create a three-dimensional object, with material being added together (such as liquid molecules or powder grains being fused together), typically layer by layer. In the 1990s, 3D-printing techniques were considered suitable only for the production of functional or aesthetic prototypes and a more appropriate term for it was rapid prototyping. As of 2019 the precision, repeatability and material range have increased to the point that some 3D-printing processes are considered viable as an industrial-production technology, whereby the term additive manufacturing can be used synonymously with "3D printing". One of the key advantages of 3D printing is the ability to produce very complex shapes or geometries, and a prerequisite for producing any 3D printed part is a digital 3D model or a CAD file.

The most-commonly used 3D-printing process (46% as of 2018) is a material extrusion technique called fused deposition modeling (FDM).

The term "3D printing" originally referred to a process that deposits a binder material onto a powder bed with inkjet-printer heads layer by layer.





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