SAHYADRI

COLLEGE OF ENGINEERING & MANAGEMENT
MANGALURU
(An Autonomous Institution)

-ARCHIVES

2k20

Technical Magazine

Department of Information Science and Engineering

From The Desk

Message From the HOD

Dr. Shamanth Rai
HoD, Dept of ISE

I am honored to be the head of the Information Science and Engineering department.

Our main objective is “Empowering the Young Minds”.

In department magazines, hidden talents are put on display in an eloquent manner. The departmental magazine is a valuable resource, and I am delighted to share my thoughts about it.. Our budding talents have used creativity to convey their thoughts, ideas, dreams, feelings, aspirations, and convictions. This magazine aims at providing a platform to students to explore their talent capabilities, express their creativity and writing skill.

It has been a long and rewarding journey with our esteemed editorial board members who have always supported us and helped us uncover the best hidden talents.

DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

VISION

To be a center of excellence in Information Science and Engineering through the interactive teaching learning process, research, and innovation.

MISSION

M1. Creating competitive ambience to enhance the innovative and experiential learning process through state of the art infrastructure.

M2. Grooming young minds through industry-institute interactions to solve societal issues and inculcate affinity towards research and entrepreneurship.

M3. Promoting teamwork and leadership qualities through inter-disciplinary activities in diversified areas of information science and engineering.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1: Possess theoretical and practical knowledge to identify, scrutinize, formulate and solve challenging problems related to dynamically evolving information science.

PEO2: Inculcate core competency, professionalism and ethics to cater industrial needs and to solve societal problems.

PEO3: Engage in Lifelong learning and stay intact to the transformation in technologies and pursue research.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Exhibit competency and skills in distributed computing, information security, cyber security, data analytics, and machine learning.

PSO2: Able to provide sustainable solution to implement and validate information science projects.

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DATA PRIVACY SECURITY

Staying Safe Online

How to secure your mobile device?

- Adish Yermal
4SF19IS006

Why did I choose cybersecurity?

Even I was a victim of one of the online scams. I was scammed with with fake ISO certification and the scammer took my documents along with some money. It looked like a proper website with no signs of scam or anything but when I did not receive the service, I saw the certification & clearly it was photoshoped. I soon filed a case on cyberpolice.gov.in but I already had lost my documents and my money. We unknowing fall into this trap, later on, in my college a person had tried to hack my device with SMS and Wi-Fi and many more. But now I don't want anyone to get scammed or hacked. So I took this initiative to write this down in many Indian languages so that everyone gets to know the basic hacks or spy that can be performed by hackers.

Links on SMS

Normally we get so many messages if we do online shopping. Do not click on shortened links like BITLY where you cannot read the website name. Like www.facebook.com/home this is a secure site, but it might be like www.facebook.org/home same? No there was a .org different. The best thing is just google it does Facebook have .org? You will get the answer. If the sms is like from Paytm, Amazon which has bitly.com links, then please do not copy paste the link just google is bank using bitly ? ,you will understand the scam.

Malicious websites

When we access information from the google we do trust google, but the sites we get can't be trusted. Some antivirus software gives mark that the site's verified, the hacker can actually try to hack the site or steal cookies and he can act like you and do the bad things. So make sure you don't visit the malicious sites and better to use a famous antivirus software like Kaspersky and other trusted ones just do not use a random antivirus.

Public Wi-Fi and Charging station

Don't try connecting to a public Wi-Fi which is not encrypted. The admin of the Wi-Fi can literally monitor which sites you are visiting and what you are doing in his Wi-Fi network. Don't do banking transactions on a public Wi-Fi unless you know the person who owns it or its a trusted provider. Even charging stations can be extremely dangerous, make sure you disable the USB tethering option if you have enabled it. Use a trusted VPN service to be anonymous in the public network.

App permissions

This is a mistake all of us normally do we accept permission for a particular app and we forget about it and don't even use the app barely. But please go through all the app in your phone from the setting app management and look for rarely used and remove the permission. If any app is using device administration permission disable it other than Google find my phone. Make sure you regularly check the app permissions and revoke permissions if not needed.

SOCIAL NETWORK MEDIA

LinkedIn: Tips for Self- branding

- Vivek T M
4SF19IS121

Know more on how to embellish your LinkedIn profile to captivate hirers and accordant people!

Which brand comes to your mind while buying a phone? I vouch for Apple known for its opulence. We all have one such exceptional choice. Have you ever given it a thought what made them celebrated in spite of many other competent brands in the market? It all comes down to branding. A mere chocolate that we buy to the costliest suits and watches, every company needs to set a benchmark in its initial steps through branding to stand firm in the market steadfast being most sought after by the people. Likewise LinkedIn is a platform for self-branding to put ourselves first in the competitive pool of people who might indeed have the same goal to reach. How do we make ourselves stand apart from the crowd of mediocre through our profile? Here are some smart octets to make an outstanding profile:

A good profile picture conveys it all-

An assertive portrait is the first factor to captivate connections on LinkedIn. So go ahead and put on a profile picture with formal attire and a warm smile but not a selfie though. Make sure to have a professional background image of your place of work or a field in which you are interested.

A headline is the head start-

A headline is the most crucial part of your profile at which the connection takes a quick look to connect, as time matters the most. It should be crisp, portraying your field of expertise, current status and what you aspire to be in future.

Summarize yourself concisely-

The summary field is an opportunity to briefly describe your passion,skills, principles, mission and your contribution in any field. It should fit within 100 words but your connection should get a precise idea about your individuality, a trait that makes you stand out from others.

Keep it absolute and updated-

Being active in LinkedIn gives you the benefit of collaborating with like-minded peers and exchange thoughts. It is essential to modernize the profile compendiously by filling up all apt details like work, education, experiences, certifications and link to your work.

Follow your epitomes-

Make sure to follow your dream companies and people on the platform to get updated about their expectations and requirements so that you can prepare for the best.

Highlight skills and certifications-

Be proud of your achievements and showcase them your abilities in specific fields so that hirers feel confident to handover the job for which they think you fit in based on your skills.

SOCIAL NETWORK MEDIA

THE SUCCESS OF OVER THE TOP (OTT) SERVICES IN INDIA

- Yashmitha B
4SF20IS117

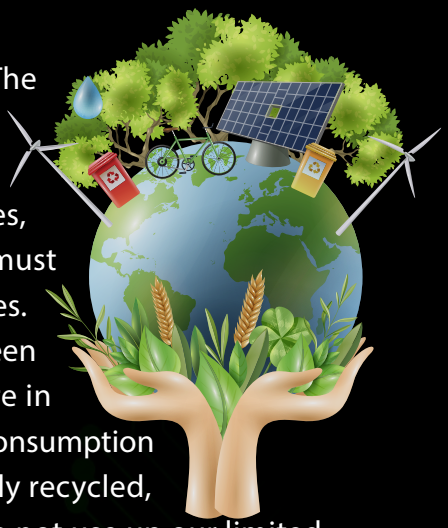
Remember those days when we had to bear endless advertisements while watching a movie on TV? When we had to wait the whole day to watch our favourite show? Well, today they are just memories. Thanks to Over-the-Top (OTT) services, media streaming has become way too easy. Wikipedia defines OTT services as "a media service offered directly to viewers via the Internet".In India, OTT services are expanding at an unprecedented rate. Today, India is the world's fastest growing market for streaming platforms. A report by Ormax Media, a media consulting firm states that India has 353.2 million OTT users and 96 million active paid subscriptions, which means that one in every four Indians is an OTT service user. OTT platforms in India, led by Amazon Prime Video and Netflix, invested roughly $500 million in original content in 2021, according to London-based Omdia's India: Online Video Trend's report. And Disney+ Hotstar leading the pack with a combined spend of $380 million.

Numerous reasons have contributed to the growth of OTT in India. Firstly, the affordable data rates.With the induction of Jio, the cost of data reduced drastically (from $3 per GB in 2015 to $0.09 per GB in 2020) making India one of the countries with the lowest data cost paving way for wide internet and smartphone penetration.Secondly, in comparison to cable TV, OTT providers provide a superior user experience. Users of OTT services can watch shows at any time, from anylocation, with ease. OTT services offer minimum commercials. Subscription fees of OTT are relatively lesser than compared to cable TV. Each paying customer in India has on average, 2.4 subscriptions. But what fuelled the rise of OTT services in India was the Covid-19 pandemic. The pandemic proved to be a game changer for the media and entertainment industry. People busy with work now were stuck inside their homes.

Theatre's, cinemas, music concerts, shows, and other events closed, and televisions would rerun old shows which forced consumers to look for alternative forms of entertainment. And that is when OTT came to the rescue. OTT services have changed the concept of media streaming in India and are increasing their footprint day by day. A survey by Ascent Group India mentions that 65% of OTT users in India are from rural India which has only 40% internet connectivity. Although cable TV continues to be the major stakeholder in the media and entertainment sector, OTT services are catching up quickly. Popular Indian cable TV networks like Star, Sony, and Viacom18 have launched their own OTT platforms after realising the importance of having an online presence. Due to the increased competition in the market, streaming behemoths like Netflix and Amazon Prime are providing their plans at reasonable costs.It is of no doubt that OTT services revolutionized the media and entertainment sector in India.

GREEN TECHNOLOGY

- Shishira
4SF19IS094



Green technology is a new branch of science that has a 'green' purpose. The term refers to a technology that is environmentally friendly. At present, our technology is focused more on convenience that concern our planet. We must remember that the world has a fixed amount of natural resources, some of which are rapidly decreasing. So, if we are to save our planet, we must focus on inventing ways to conserve our natural environment and resources. In other words, we must promote green technology. The primary goal of green technology is to meet the needs of human beings without hurting nature in any way. We must learn to cut down on waste and production, and reduce consumption of natural resources. It is also important to make products that can be fully recycled, or reused. Above all, it is essential to develop new forms of energy that do not use up our limited natural resources. So, the goals of green technology are to meet the needs of society without destroying natural resources.

Green technology can be applied to our daily life in many ways. We can use it to manage solid wastes, as well as to purify air and water. Green technology can be used to save energy, treat sewage, and for transportation. It also opens up new fields of renewable energy for everyday uses like solar, wave and wind energy. Green technologies aren't limited to industrial use and may apply to household items as well.It can thus be applied for heating water, cooling homes, cooking and lighting. It can also be used in manufacture of appliances like computers. Electric cars, biogas plants, and windmills are just some of the ways that green technology can be used.

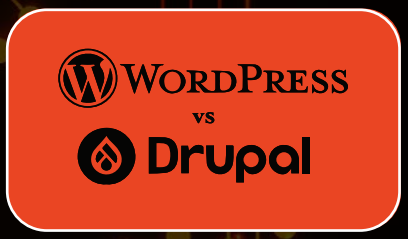
Green technology in one form or the other is a part of our daily life. By adopting atleast one of the many green technologies, we can help to conserve nature's gifts for future generation as well.

WORDPRESS VS DRUPAL

WHICH ONE IS THE BEST?

- Saiesh N Gangoli
4SF19IS087

WordPress, undoubtably, is the most used content management system, which is also a common blogging platform. With approximately 31% of all websites completely relying on it, WordPress is the most popular content management system in the world. WordPress has a large community which provides invaluable support for many types of websites that you can build. Also, it is possible to use WordPress to create anything from a simple blog to a large news website like CNN. However, WordPress is aimed at the general audience, meaning any average web developer can customise their own WordPress website. WordPress's popularity around the world means that there are a huge number of developers and designers ready to help with any of your concerns. WordPress and Drupal are both powerful tools to build great websites and power compelling digital experiences.



Speaking of Drupal, which has a reputation for being the best option if you are looking to build a customised website, but in comparison with WordPress, Drupal is nowhere near as popular. Despite having been around for longer, it is responsible for just over 41 million of all websites. However, Drupal is used by a number of large websites, including NASA. Just like WordPress, Drupal also has a very active community as well as a support section where experts will be able to walk you through any lingering questions. Here, you will also find documentation, chat rooms, and other resources to help you. The benefits of Drupal include it being more secure and having more features in comparison with WordPress. Also, Drupal provides more potential for customising websites. However, Drupal has some disadvantages, like a lack of user-friendly content creation, and it is also more expensive to build a Drupal website.

While both have their own pros and cons, it is clear that the main advantages of Drupal are that it is a great option if one is looking to build a customised website, but now one can do the same with WordPress. Both WordPress and Drupal provide you with a high level of dedicated support for your website building needs. But in the case of both, you will have to spend a bit more for the best service.

Due to its popularity, it will always be more vulnerable to being attacked by Drupal. Security is still one area where Drupal has an upper hand over WordPress. We can just conclude by saying that both are best in their own way and should be chosen as per the features one wants on their websites.

MODERN TECHNOLOGY

- Aruna K Nayak
4SF20IS016

Technology is the application of knowledge or intelligence to reach the goals of human life by the means of technical accessibility and the outcomes are the products developed to meet the purposeful interventions to expand the human possibilities . Technology plays a paramount role in the lives of people all over the world. Advancements in technology have made our lives plain sailing, yet our lives are affected adversely. The evolution in technology has significantly changed the society . Advancements in the field of agriculture , health ,education, art ,industry and our daily routine activities has been influenced by technology . There are various forms of technology we employ in our day-to-day existence . With a finer comprehension of contrasting types , we can absorb how each type of technology can help to better our daily life . Today technology is evolving at a faster pace leading to rapid changes and progress .

5G: This the most followed trend in technology . 3G and 4G technologies enabled a lot new varieties in internet browsing , to access youtube with increased bandwidths and so much more . But, 5G is here with much more revolutionarized tactics and services . With the cloud based gaming services and much more in the technologies like AR and VR. 5G technology would be highly beneficial to the residents in the rural and semi -urban . This would also transform our lives because of its greater connectivity, download speed, connected cars and so much more.

AGRICULTURE : AI in the field of agriculture has played a significant impact . For the current population rise in India, the demand for food is tremendously increased. With this increased demand for food , the agriculture industry are relying on the technology with AI to help the farmers grow crops with greater efficiency , so that the crops developed cause no harm to the consumers . With the AI advancements, they have developed a better efficient atmosphere for the crops to grow with sustainable environment , weeds and so on.

HEALTH CARE : The Healthcare is the widely used organization for diagnosis , treatment and basically to improve the quality of life . This sector has the most adopted AI technology . AI with the health care has provided assistance to doctors to save the lives of patients with the deadliest malady. AI is able to store a large amount of data which basically includes the clinical tests , patient history , medical claims and other inspections of the student. AI helps the surgeons in the OT with the medical imaging analysis through which the patient internal organs reviewing images and scans would be inspected and the required actions would be taken place . AI can also be needful to decrease the cost to develop medicines with the technology termed as 'ATOMNET' which can predict the structures of medicines with the protein structures through which cost effective drugs or medicines would be developed .

Artificial Intelligence (AI) and Machine Learning (ML)

- Suhas Shettigar
4SF20IS103

Artificial Intelligence (AI) has already received a lot of buzz in the past decade, but it continues to be one of the modern technology trends because of its notable effects on how we live, work and play are only in the initial stages. AI is already known for its superiority in image and speech recognition, navigation apps, smartphone personal assistants, ride-sharing apps and so much more. Machine Learning (ML) the subset of AI, is also being deployed in all kinds of industries, creating a huge demand for skilled professionals.

AI services can be classified into Vertical or Horizontal AI:

Vertical AI: These are services focus on the single job, whether that is scheduling meeting, automating repetitive work, etc. Vertical AI Bots performs just one job for you and do it so well, that we might mistake them for a human.

Horizontal AI: These services are such that they can manage multiple tasks. There is no single job to be done. Cortana, Siri, and Alexa are some of the examples of Horizontal AI. These services work more massively as the question-and-answer settings, such as "What is the temperature in New York?" or "Call Alex". They work for multiple tasks and not just for a particular task entirely.

ML can be applied to solve tough issues like credit card fraud detection, enable self-driving cars and face detection and recognition. ML uses complex algorithms that constantly iterate over large data sets, analysing the patterns in data and facilitating machines to respond different situations for which they have not been explicitly programmed. The machines learn from the history to produce reliable results. The ML algorithms use Computer Science and Statistics to predict rational outputs.

There are three major areas of ML:

Supervised Learning: In supervised learning, training datasets are provided to the system. Supervised learning algorithms analyse the data and produce an inferred function. Credit card fraud detection is one of the examples of Supervised Learning algorithm.

Unsupervised Learning: Unsupervised Learning algorithms are much harder because the data to be fed is unclustered instead of datasets. Here the goal is to have the machine learn on its own without any supervision. The correct solution of any problem is not provided. One of the examples of supervised learning is recommendation engines which are there on all e-commerce sites or also on Facebook friend request suggestion mechanism.

Reinforcement Learning: This type of Machine Learning algorithms allows software agents and machines to automatically determine the ideal behaviour within a specific context, to maximise its performance. Reinforcement learning is defined by characterising a learning problem and not by characterising learning methods. Any method which is well suited to solve the problem, we consider it to be the reinforcement learning method. Reinforcement learning assumes that a software agent i.e., a robot, or a computer program or a bot, connect with a dynamic environment to attain a definite goal. This technique selects the action that would give expected output efficiently and rapidly.

Artificial intelligence in Health Science

- Swasthik Shetty
4SF18IS109

Artificial intelligence can assist us with fighting this infection by population screening , clinical assistance, warning, and proposals about the disease control. This innovation can possibly improve the arranging, treatment and reported outcomes of the COVID-19 patient, being a proof based clinical instrument. Overall system of AI and non-AI based applications that help general doctors to distinguish the COVID-19 symptoms.

Important applications of AI in COVID-19 pandemic :

Reducing the workload of healthcare workers

Because of an abrupt and monstrous increase in the numbers of patients during COVID-19 pandemic, healthcare professionals have very high workload. AI techniques is utilized to reduce the workload of healthcare workers.

Early detection and diagnosis of the infection

It assists to provide faster decision making, which is cost-effective. It assists to develop a new diagnosis and manage system for the COVID 19 cases, through helpful algorithms.

Monitoring the treatment

AI can construct an intelligent platform for automatic monitoring and prediction of the spread of this virus. A neural network can also be constructed to extract the visual features of this disease, and this would help in proper monitoring and treatment of the affected individuals.

Contact tracing of the individuals

AI can help examine the level of infection by this virus identifying the clusters and 'hot spots' and can successfully do the contact General procedure of AI and non-AI based applications that identify the COVID-19 symptoms.

Development of drugs and vaccines

AI is used for drug research by analyzing the available data on COVID-19. It is useful for drug delivery design and development. This technology is utilized in accelerate drug testing in real-time, where standard testing takes plenty of time and hence helps to accelerate this process significantly, which may not be possible by a human.

Medical Image Processing with Deep Learning

Radiologists and clinical doctors can learn to detect COVID-19 cases based on chest CT examinations, their tasks are manual and tedious, particularly when required to analyze a great deal of cases. AI methods, especially deep learning, have been used to process and analyses medical imaging data to support radiologists and doctors to improve diagnosis execution. In like manner, the current COVID-19 pandemic has seen various examinations concentrating on programmed location of COVID-19 utilizing profound learning frameworks.

A three-dimensional deep learning method, namely COVID- 19 detection neural network (COVNet), is introduced in to detect COVID-19 based on volumetric chest CT images. Three kinds of CT images, including COVID-19, community acquired pneumonia (CAP) and other non-pneumonia cases, are blended to test the robustness of the proposed model.

THE CLOUDS

- Apeksha Shetty
4SF19IS016

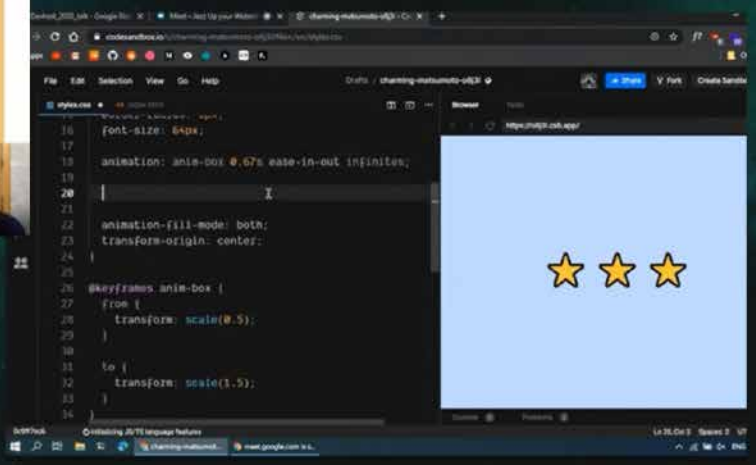
They float like a boat
On a large ocean coast
By the hills and the valleys
Even near the ancient port
But their ocean is boundless
Like my excitement or your joy
You know it when you see it
This boat got no hurdles to stop

They got no specified shape
Neither rule nor any load
They move happily in their space
Like there is no tomorrow to come
They are flowers when you are happy
But Dragons when you are sad
You know it when you see it
Heaven might look the same

Sometimes they grow as larger
As the size of fear, you held
When they run on their vast ocean
The only thing they say
This moment is gonna pass soon
Like clouds on a blue calm sky
You know it when you see it
This boat is the cloud on a bright day

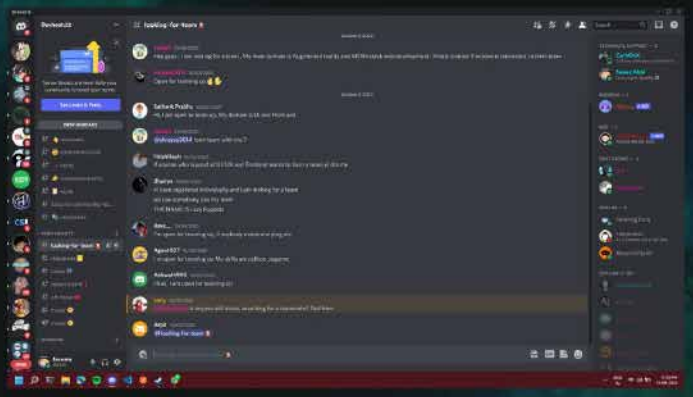
Technical Events & Activities

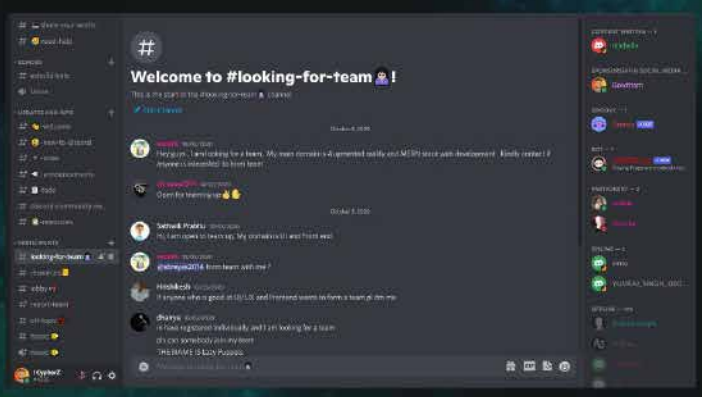
DEVHOST:20



Devhost :20 was conducted online online cause of the pandemic. It had speakers from throughout the world. The event had talks and workshops on various topics ranging from UI/UX design to Cybersecurity.

HACKNIGHT:20





HackNight:20 was the third edition of hackathons under SOSC. Because of the pandemic this event was conducted online. Since this was an online event, this event had participants from around the country. This event had 30+ teams from various top institutions throughout India.

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