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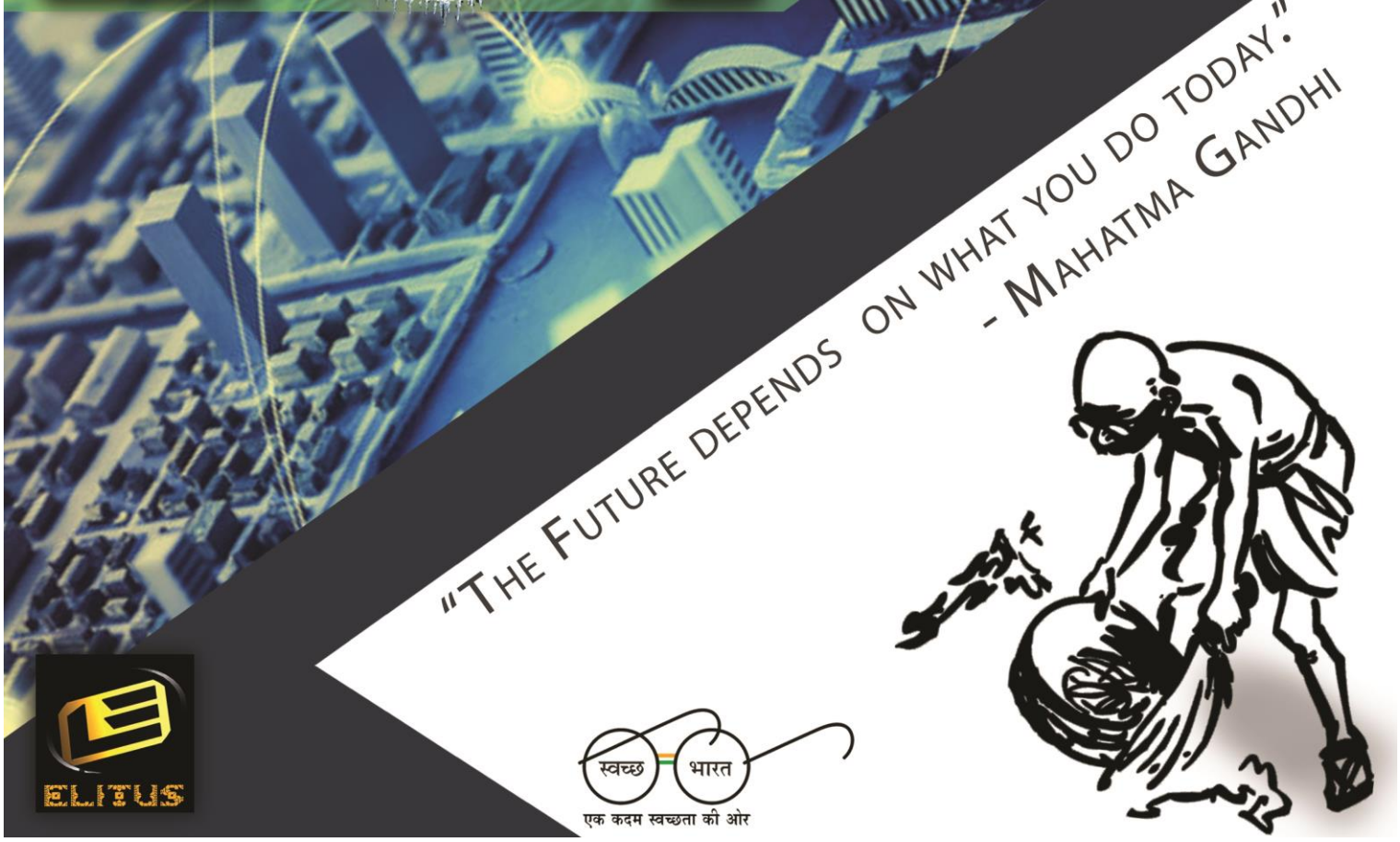
Department of MCA presents

ELITUS 8.0



"The Future depends on what you do today."
- Mahatma Gandhi

ELITUS

स्वच्छ भारत
एक कदम स्वच्छता की ओर

MESSAGES

DR. R N SHETTY
CHAIRMAN

I congratulate the students of MCA Department for bringing up the newsletter ELITUS. It shows their creativity, ability to think out-of-the-box and their mind-set for facing the challenges. I wish them the best in their endeavours.

DR. H N SHIVASHANKAR
DIRECTOR

I am happy to note that the students of MCA Department are bringing the 8th Edition of the newsletter ELITUS. I am of the opinion that this is a true platform for showcasing literary talents. I would like to congratulate the department for achieving consistently good results in University exams. I wish that the department will excel further.

DR. M K VENKATESHA
PRINCIPAL

Extra-curricular activities are essential part in a students' life for their overall growth. R N S Institute of Technology is one such institution which helps students to exhibit their talents in various modes. Bringing the 8th edition of a newsletter is a remarkable achievement by the students. I heartily congratulate them in all their endeavours and wish them all the success.

DR. N P KAVYA
HoD

My hearty congratulations to our students who were very active and enthusiastic in bringing up the 8th edition of the department newsletter ELITUS. ELITUS highlights the activities and achievements of the department annually. I'm sure that this tradition of team work among the students will reach department to greater heights.

EDITORIAL

The Department of MCA has a tradition of bringing up a newsletter viz. ELITUS from past eight years. The students of the department will be enthusiastic in designing and contributing to the newsletter. The aim of the newsletter is to showcase talents of our students and the achievements of the department.

Every year, the newsletter will be designed based on a theme. The theme of current edition is Technological Solutions to Environmental Problems. Maintaining and improving our environment is a biggest challenge as the population is growing and so is the usage of natural resources. It is not too far that we face the scarcity of pollution-free air, water etc. It is a challenge for technical community to find feasible solutions to such problems. To make our students to think in that direction, the theme of this newsletter is chosen so. Students were made to do ground-work on this concept and to pen-down their ideas. We hope our small effort in this direction will help everyone to understand the importance of keeping our environment clean, neat and tidy and also to preserve the natural resources.

- Dr. Chetana Hegde

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Internet of Robotic Things

Mushahid Faizan
(4th Sem B' Section)

Robotic system has brought tremendous changes in various socio-economical aspects of human society during the past decades.Industrial robot manipulators have been widely deployed and used in all sorts of industries to perform repetitive, tedious, critical, and/or dangerous tasks, such as product assembly, car painting, box packaging, and shield welding.

These preprogrammed robots have always been very successful at their accomplishments in several structured industrial applications due to their high accuracy, precision, endurance, and speed.Robotic technologies have been integrated with existing network technologies to extend the range of functional values of these robots when deployed in unstructured environments while fostering the emergence of networked robotics during 90's.

IEEE Society of Robotics and Automation's Technical Committee on Networked Robots has defined the networked robotic system as a collection of robotic devices that are connected via wired and/or wireless communication network. The "Mars Rover" sent to the Mars for exploration is a kind of former type where as Soccer playing robots.

Networked robotics suffer from inherent physical constraints such as,low speed on-board instruction execution, small size of memory , network latency, variable quality of service, downtime, and lack of intelligence.The limitations have motivated the researchers to think of new form of efficient robotic systems i.e., "Cloud Robotics". Cloud robotics may be described as a system that relies on the "Cloud Computing" infrastructure to access vast amount of processing power and data to support its operation.

Although, Cloud Robotics is benefited from big data analytics, cloud computing, human computation, and collaborative robot learning, it suffers from various issues such as interoperability, heterogeneity, time-varying network latency, security, multi-robot management, common infrastructure design, Quality-of-Service (QoS).

This article describes Internet of Robotic Things architecture, key concepts, characteristics, and some of the technical challenges. The main aim is to provide a better understanding of the architectural design challenges of IoRT, validation of the proposed concept, and identify mportant research directions in this fascinating topic.

Lighting: India's smart IoT solution

Akshay Gulaganji
(4th Sem B' Section)

As street lighting continue to be operated and maintained manually by local municipalities in India, power consumption and transmission losses are getting too high to ignore. While some are making a shift to LED lights to save power, automation is the surest way to real savings.

The need for automation

Different municipalities have different budgets and vendors for street lighting, raw materials and installation. Of the millions of streetlights currently installed, only a small percentage use LED lights, while others might be CFLs, metal halide or sodium vapour. Thus an automation solution must work with the current infrastructure, without needing major overhaul.

Automation considerations

Remote monitoring: A street lighting automation system must allow supervisors to view streetlight statuses from the Internet. Important data such as operational hours, energy consumption, and faulty equipment must be made available at the click of a button.

Integration with existing infrastructure: It's not feasible to change the millions of existing streetlights to suit an automation system. Instead, it is essential for any automation system to work with the existing infrastructure.

Fail-safe nature: Automation systems must be designed to work without a continuous Internet connection, and in all weather. It is imperative that streetlights are not affected, even if the solution itself fails.

Schedule: An automation system must have schedules to operate lights according to the time of day. The schedules must be flexible enough to account for changing sunrise and sunset timings throughout the year.

Manual override: While the system should run without human intervention, of course the final authority to switch a streetlight on or off must rest with a human being. Under certain circumstances, it may be important for supervisors to control the lights—for example, switching off streetlights when under maintenance.

Sensor integration: Automation systems would be more efficient if they could sense the intensity of surrounding light. For example, in foggy, stormy or smoggy conditions, it would be essential for the street-lights to activate, regardless of the time of day.

Automation models and solutions using IoT

Automation systems for streetlights cannot have a one-size-fits-all model. Existing hardware, budgets and installation efforts must be considered before moving forward. So let's talk about two broad categories of the automation system: phase wise control and individual light control.

Phase wise control: This solution would control streetlights based on phases. A feeder panel (switching point), along with a gateway device and possibly an energy meter, would work perfectly in this situation. The energy meter would be used to find the phase consumption, and the gateway would upload it to the Internet.

Individual lighting control: This solution would control each light individually. Each streetlight will have circuit board installed to control the light, read the consumption, and transmit all data wirelessly. For the high range of data transmission, the chip must use a far-reach technology and a mesh protocol to maintain robust connectivity. A gateway device would be needed to collect data from and control streetlights, upload the data to the Internet, and control the lights based on either the schedule, if-then rules or manual control. The solution would be able to pinpoint faulty lights and track energy consumption by individual light.

The time of streetlight automation is upon us If we envision smart cities initiatives being launched around the globe, smart streetlights should be a part. Internet of Things automation systems are still in their early days. But smart streetlights will bring a number of benefits to communities and their governments. They will provide baseline data to help governments make informed policy decisions. They help reduce energy consumption and eliminate the need for staff dedicated to streetlight operation. The positive potential of modernizing the lighting industry is just too big to ignore.

NarrowBand-Internet of Things (NB-IoT) is a standards-based low power wide area (LPWA) technology developed to enable a wide range of new IoT devices and services. NB-IoT significantly improves the power consumption of user devices, system capacity and spectrum efficiency, especially in deep coverage.Battery life of more than 10 years can be supported for a wide range of use cases.

New physical layer signals and channels are designed to meet the demanding requirement of extended coverage – rural and deep indoors – and ultra-low device complexity. Initial cost of the NB-IoT modules is expected to be comparable to GSM/GPRS. The underlying technology is however much simpler than today's GSM/GPRS and its cost is expected to decrease rapidly as demand increases.

Business Benefits

1. Power Efficiency

Efficiently powering IoT devices is critical. Think about it: who wants to be out there changing the batteries on 20 billion devices every six months? While nearly all IoT technologies are developed to save power when they aren't operating, they do draw energy when the modem is running and handling signal processing.

2. Cost Savings

Technologies with simpler wave for like NB-IoT will consume less power.A 200 kHz NB-IoT front-end and digitizer offers reduced complexity of analog-to-digital (A/D) and digital-to-analog (D/A) conversion, buffering, and channel estimation. Power savings = cost savings. Plus, NB-IoT chips will be simpler to create and thus come cheaper.

3. Reliability

Rolling out NB-IoT on a licensed spectrum means improved reliability for users as well as the guaranteed resource allocation needed for managed Quality of Service (QoS).

4. Wider Deployment

Compared to LTE-M1, NB-IoT has lower bitrates and better link budgets. Additionally, per Huawei's Emmanuel Coehlo Alves in an IoT Hub article, NB-IoT doesn't need gateways to provide connectivity.

5. Global Reach

While heavy hitters in the U.S have already invested billions into LTE networks, there are many areas around the world with less LTE. Outside of the U.S., there are larger GSM deployments on which to find unused bands to leverage for NB-IoT. NB-IoT then could help IoT innovators find affordable entry points in new markets globally. Even in the U.S. , smaller carriers such as Sprint or T-Mobile might also deploy NB-IoT on existing GSM spectrum to expand connectivity without the LTE.

Source - https://www.gsma.com/iot/narrow-band-internet-of-things-nb-iot

Electric Vehicles are Boon to our Environment

Electric vehicles have evolved in the 21st Century, Electric vehicles such as cars, bikes, skateboards are popularly used. Although indirectly we are burning fuel for generating electricity, the pollution generated by these electric vehicles are none.

Developed cities like New-York and San Francisco are using electric vehicles to reduce pollution and save the enviroment, some instance of electric vehicle usage are, the New-York city Police. Department have started using Electric Cars for patrolling. Some CEO's and Founder in the Silicon Valley are regularly using Boosted Board (electric skate board) or other electric gadgets for their daily commute.

Electric Car Giant,Tesla Motors have come up with modern Electric car which are being widely used in America, they have also recently introduced Electric Trucks which are going to change the world as Trucks are the most polluted vehicles.

In India the electric vehicle revolution was initiated by Reva which was then continued by Mahindra Groups , Although you can see a few electric vehicles running on the streets of India, it is not widely popular, neither are electric cycles. India and china are one of the most polluted countries in the world and they should take the initiative to implement more modern and electric vehicles in their environment.

One instance which shows that India is moving toward reducing vehicular pollution is that, recently Ola are collaborating with Mahindra Reva to integrate more Electric and Echo friendly Taxi's.

Even after the Government and other companies taking initiative to save the enviroment, I believe that it is our duty to save our environment and that can be achieved only by reducing the pollution and each individual should take responsibilty to reduce pollution and use Echo-Friendly means of Transport.

Aloka & Anvesh
(4th Sem B' Section)

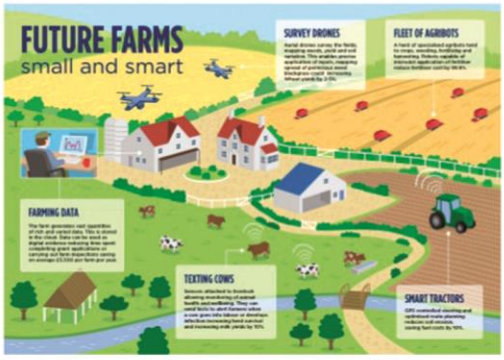
ROLE OF IOT IN AGRICULTURE

Introduction

Now a days there is vast enhancement in technologies, different tools and techniques are available in agriculture sector. To improve efficiency, productivity, global market and to reduce human intervention, time and cost there is a need to divert towards new technology named Internet of Things.IoT is the network of devices to transfer the information without human involvement. Hence, to gain high productivity, IoT works in synergy with agriculture to obtain smart farming. This will focuses on role of IoT in agriculture that leads to smart framing. Today many agricultural industries turned to adopt IoT technology for smart farming to enhance efficiency, productivity, global market and other features such as minimum human intervention, time and cost etc.

The advancement in the technology ensures that the sensors are getting smaller, sophisticated and more economic. Focusing on encouraging innovation in agriculture, smart farming is the answer to the problems that this industry is currently facing. All this can be done using smart phones and IoT devices. Farmer can get any required data or information as well can monitor his agricultural sector.

Agriculture is the main backbone of India's Economical growth. The most important barrier that arises in traditional farming is climatic change. The number of effects of climatic change includes heavy rainfall, most intense storm and heat waves, less rainfall etc. Due to these the productivity decreases to major extent. Climatic change also raises the environmental consequences such as seasonal changes in life cycle of plants. Today, the Internet of Things (IoT) is transforming towards agriculture industry and enabling farmers to compete with the enormous challenges they face. Farmers can get huge information and knowledge about recent trends and technology using IoT.The smart agriculture market is expected to reach $18.45 Billion in 2022, at a CAGR of 13.8%. BI estimates that 75 million IoT devices will be shipped for agricultural uses in 2020, at a CAGR of 20%. IoT devices can be of great help in enhancing the production and yield in the agriculture sector since these devices can be used to monitor soil acidity level, temperature, and other variables. IoT sensors are capable of providing farmers with information about crop yields, rainfall, pest infestation, and soil nutrition are invaluable to production and offer precise data which can be used to improve farming techniques over time.



Conclusion

Farming will play vital role in next few years in country. Thus there is need of smart farming. Internet of Things will help to enhance smart farming. IoT works in different domains of farming to improve time efficiency, water management, crop monitoring, soil managemen. It also minimizes human efforts, simplifies techniques of farming and helps to gain smart farming. Along with these featuressmart farming can help to grow the market for farmer with single touch and minimum efforts.

- Nagaraj E G.
(4th Sem B' Section)

BEAN
Internet of Things

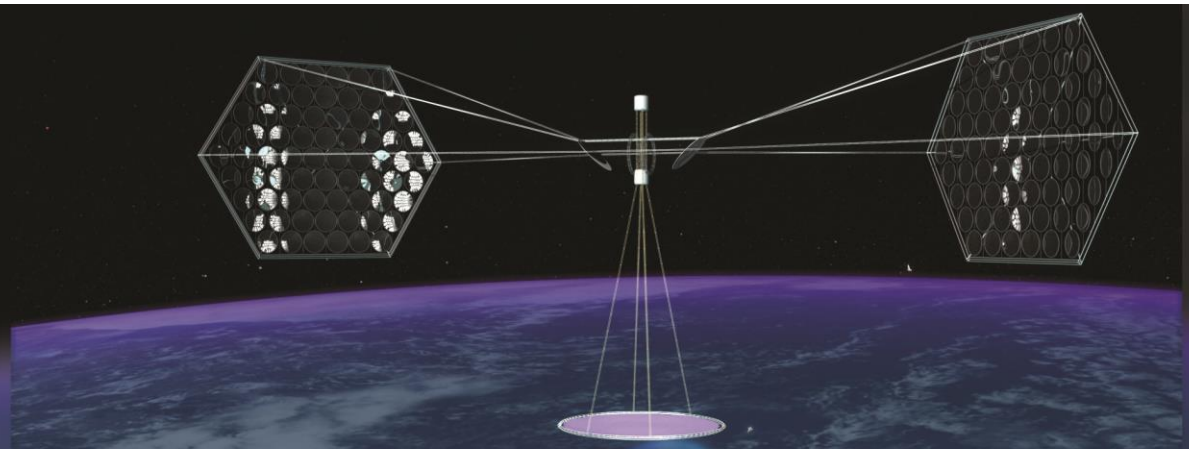
Thumb-sized "plastic beans" are being filled with sensors and tossed into grain bins and storage facilities for precision agriculture, getting rid of the need for handheld devices or elaborate moisture monitoring. The beans are able to send out a signal when they read measurements outside of normal conditions.

Currently in testing, Bean IoT uses sensors and wireless connectivity for practical farm applications. It measures temperature, humidity, air quality, altitude, gasses including CO2 – and movement in bulk-storage grain. Designed to be worn, carried or deployed throughout the home or factory, each bean contains a bluetooth radio, electronic compass, gyroscope and sensors. All the components "speak" with one another using an adaptive wireless mesh network of static or moving nodes. Each device has a common array of environmental sensors, which, when combined with low-power wide-area networks, collects big data and works with cloud services for analysis, according to Bean IoT. The beans are not only a fit for grain bins. Holland said a producer can reassign the sensors for use in a livestock barn, chemical shed, honeybee hive or agricultural equipment. Using location tracking, a bean could be placed in or under equipment so if machinery leaves the farm property, the remaining beans sound the alarm and send the owner instant alerts. The beans are not only a fit for grain bins. Holland said a producer can reassign the sensors for use in a livestock barn, chemical shed, honeybee hive or agricultural equipment.

Using location tracking, a bean could be placed in or under equipment so if machinery leaves the farm property, the remaining beans sound the alarm and send the owner instant alerts. The beans can be configured individually or in groups to measure different parameters and limits as a user requires.

Once beans are in place, a producer has multiple monitoring options. The data shows up on a tablet or Smartphone as a layered sensory map visualization. The battery charge lasts 14 months and recharges in a few hours. Bean IoT functionality is not limited to agriculture. It is designed to present a number of use cases within several markets. Bean IoT functionality is not limited to agriculture. It is designed topresent a number of use cases within several markets. The goal is to make these bean sensors at scale, cheap for everyone.

Subramani.U
(4th Sem B' Section)



Space Based Solar Power Satellite

Srikanth M
(4th Sem B' Section)

In 1941 science fiction writer Issac Assimov spoke of space stations that could transport energy gathered from the sun to various planets with the microwave beams in his short story "Reason." Today, science fiction could become science fact within the next quarter of a century.

History of Space Based Solar Power

The idea of collecting solar power in space is nothing new. It did not take long after the invention of the first silicon-based solar cells and the advent of space exploration for someone to realize that the two technologies would make a happy marriage. American aerospace engineer Peter Glaser penned the first formal proposal for a space based solar power system in 1968, just a year shy of Neil Armstrong's stroll across the moon. He was granted patent number 3,781,647 for a satellite solar-power system (SSPS) in 1973 for a method of transporting solar power over long distances by beaming microwaves from an antenna in space onto a much larger one on the ground. The ground receiver would later be called a rectenna.

The Goal

Every roadmap needs a destination, and for space based solar power, JAXA has proposed a commercially viable 1 gigawatt space based solar power system.The system would consist of a geosynchronous orbiting satellite outfitted with state of the art silicon based solar cells. Orbital mirrors ensure that sunlight is always concentrated onto the satellite's solar panels as it orbits with the Earth's rotation, even when it resides on the side of Earth opposite the sun. On the surface a 3 kilometer long man-made island outfitted with 5 billion miniature rectifying antennas receives the microwaves beamed down from a satellite 36,000 kilometers above, converting them back into DC current. An on-island substation routes electricity through an undersea cable directly to Tokyo's bustling electrical grid. An ambitious project, Dr. Sasaki highlights six areas of development: wireless power transmission, space transportation, space construction, satellite control, power generation and power management.

The Future of Space Based Solar

Critics of a space based solar power system are primarily concerned with the inherent loss of efficiency incurred by the conversion path from a photon to DC current on the ground. The overall losses in efficiency add up at each step of the conversion process. First there is the loss associated with our ability to utilize the photovoltaic effect shared by all solar photovoltaic systems. Then there is the loss of energy from converting DC current into a microwave onboard the satellite, converting into AC current at the rectenna, rectifying it into DC current again to be absorbed by the substation and then finally reconverting it into AC current for distribution to the city grid. Still, the atmosphere coupled with intermittency issues from weather and nightfall is enormous, and could be greater than the power lost from wireless power transmission.. Time will cheaper to harvest solar energy using space based solar power systems tell whether technological advances can make it.

Big Data Analytics for Electric Vehicle Integration in green Smart cities

The huge amount of data generated by devices, vehicles, buildings, the power grid, and many other connected devices, coupled with increased rates of data transmissions, constitute the big data challenge. Among many areas associated with the Internet of Things, smart grid and electric vehicles have their share of this challenge by being both producers and consumers (ie., prosumers) of big data. Electric vehicles can significantly help smart cities to become greener by reducing emissions of the transportation sector and play an important role in green smart cities. The data analytics techniques used for handling the big data of smart grid and electric vehicles. This article provides a comprehensive overview of the data analytics landscape on the electric vehicle integration to green smart cities. It serves as a roadmap to the future data analytics needs and solutions for electric vehicle integration to smart cities.

Smart grid is the modernized electrical grid that integrates advanced sensing, communication and control functionality for the purpose of enhanced efficiency, reliability, and security in the operation of the utility grid. EVs are either completely or partially powered by their onboard batteries, which are charged by the power grid. Plug-in EVs use less fossil fuels and emit much less CO2 compared to conventional vehicles and therefore are incentivized by many governments to improve air quality and reduce greenhouse gas emissions. EVGI plays a vital role for healthy integration of these new technology vehicles into the future green smart cities.

New generation autonomous self-driving cars, whether electric or not, are equipped with hundreds of sensors and surrounded by smart technologies. Furthermore, road infrastructure is also underway with large deployment of connected technologies (i.e., traffic lights, signs, and road cameras). The advances in wireless and vehicular communications enable these smart cars to be able to communicate with the infrastructure and other smart cars .The data collected from EVs are various, and the volume is huge; therefore, traditional statistical ways to build a model may not work very well. Big data analytics have been useful for EV integration in a variety of ways such as optimized charging, battery management, and EV status tracking. In this section, we group the existing studies based on the platform used. The first subsection focuses on Hadoop-based techniques that allow parallel processing of EV big data. The second subsection presents a study that uses the Weka data mining tool. These subsystems include transportation mobility and grid service requirements, EVSE and user behavior models, and onboard

power electronics and battery system modeling for charging operation. In order for the utility to be spared the impact of the large number of EV connections and to utilize already available mass energy storage capacity in EVs, communication design of the EVGI framework and decision making through big data analytics play important roles. The utility-privacy trade-off has been explored in several studies, but there are open issues on how much uncertainty can be handled for EV integration to smart grid and green smart cities. In summary, fast and effective data analytics approaches are required for real-time interaction of the EVs with the smart grid and smart city. Those approaches can benefit from the advances in mobile edge computing.

Source: IEEE Article On Green Communications And Computing Networks
By: Boyang Li, Mithat C.Kisacikoglu,Chen Liu,Navjoth Singh And Melike Erol-Kantarci

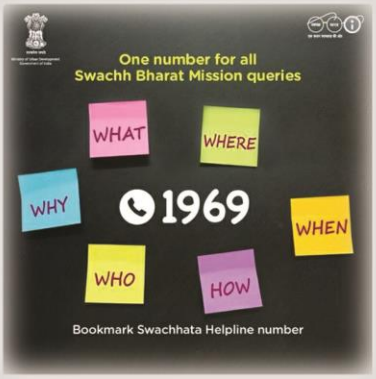
Sushmitha H R
(2th Sem A' Section)

Aditya Kr. Dubey
(4th Sem A' Section)

Swach Bharat Abhiyan using Technology

1. Spreading Swachhagrahi Through Swachhta App By Ministry Of Urban Development: Have a problem with your city's cleanliness and related issues? All these issues can be solved in a tap! To make it easy for the citizens to report a cleanliness related issues, Ministry of Urban Development launched an app - Swachhta App to connect citizens with their respective urban local bodies to solve a host of deficiencies in the respective area. The app is launched on a national basis but is urban local body specific. Meaning – any person living in any part of India can register complains using the app, the app will recognise the location and will ask local or urban bodies to take required actions. So, what complains are included in the app – The citizens can nitpick about the following – garbage vehicle not arriving, lack of water supply in public toilets, dead animals, public toilet blockage, cleaning of public toilets and uncleaned.

Usage: The app is user friendly, to register a complaint all a user needs to do is click its picture, enter a landmark or a location and submit the complaint. Talking about the deadlines, complaints have a set timeline for the authoritiesto act on. A local body has to attend to an issue of garbage vehicle not arrivingwithin 12 hours, dead animals within 48 hours and garbage dumping in 12 hours.



- Apart from this national app, many cities and civic authorities have come out with their own app to address the civic issues on priority.

2. One Number For All Swachh Bharat Mission Queries – The Swachhta Helpline: Do garbage collection vehicles show up in your locality? Are the waste bins in your locality cleaned regularly? All this and many more Swachh Bharat related complains can now be addressed through just one simple number and that's the Swachhta Helpline: 1969. This has been introduced across the country and it not only for complaints but also includes any query/questions related to Swachh Bharat Urban.

3. Locate A Toilet Through Apps: Google toilet locator and Find X Toilet are few of the apps that help the user locate the nearby loo. Google toilet locator data is available in New Delhi and Madhya Pradesh whereas Find X Toilet is there just for the citizens of New Delhi.

Google Toilet Locator: The service is available both in Hindi and English and data covers more than four thousand toilets in Delhi NCR including Ghaziabad, and Indore. Coming to Find X Toilet, the app provides location and information on 1,000 toilets in Delhi and that's about 80 percent of the total toilets in the national capital.

Google Maps Toilet Locator

GREEN COMPUTING.-

What is the meaning of Green Computing?

Green computing is the environmentally responsible and eco-friendly use of computers and their resources. In broader terms, it is also defined as the study of designing, manufacturing/engineering, using and disposing of computing devices in a way that reduces their environmental impact. Such practices include the implementation of energy-efficient central processing units (CPUs), servers and peripherals as well as reduced resource consumption and proper disposal of electronic waste (e-waste).

Goals of Green Computing

There are other goals of green information technology, most notably at the design and manufacturing stages. In all cases, four main aims are:

- To minimize the inclusion of harmful materials.
- To use as many biodegradable materials as possible.
- To extend as far as possible the life of the equipment.
- To cut down to as little as possible the amount of energy used.

Green Computing in India

In India, green computing has not yet had a major impact, even though it has been a topic of keen interest and research among scholars. Many papers have been published in international journals regarding green computing by Indian scientists, but little application can be seen in practice. There has been no special course dedicated to green computing in Indian universities, though recently, some of them have added green computing as a part of the curriculum. Large data centers, for example, may adopt alternate methods like using renewable energy.

Air conditioning has become a necessity to keep the servers cool. As we know, air-conditioners are a major source of chlorofluoro carbons (CFCs) which contribute to the green house effect and deplete the protective ozone layer. Innovative ideas like using mineral oil based cooling systems can be tried out wherever possible.Incentives must be given to companies that adopt. The work habits of computer users and businesses can be modified to minimize adverse impact on the global environment.

Here are some steps that can be taken:

- Checking product information for energy-efficiency before buying
- Use notebook computers rather than desktop computers whenever possible.
- Power-down the CPU and all peripherals during extended periods of inactivity.
- Use liquid-crystal-display (LCD) monitors rather than cathode-ray-tube (CRT) monitors.
- Power-up and power-down energy-intensive peripherals such as laser printers according to need.
- Employ alternative energy sources for computing workstations, servers, networks and data centers.
- Use the power-management features to turn off hard drives and displays after several minutes of inactivity.

- Mehul Patel
(4th Sem B' Section)

स्वच्छ भारत

एक कदम स्वच्छता की ओर

Cyber Swachhta Kendra

Lakshmisha A.K & Murali P
(4th Sem B' Section)

Swachhta, cleanliness should be inside out. So why should your computers and mobiles be any different? The Ministry of IT has taken the Swachh Bharat Mission to a wider horizon. It has launched the Cyber Swachhta Kendra – taking the virtual reality for a cleaning spree.

As more Indians start to use internet services, more they face the risk of virus and malware attack on their devices. The Prime Minister of India has also compared cyber threat to a bloodless war IT Minister Ravi Shankar Prasad has initiated Cyber Swachhta Kendra which will work on botnet cleaning and fight against malware.

This 90-crore Botnet Cleaning and Malware Analysis Centre is providing antivirus software for computer, laptop, and mobile devices. Most of the antivirus available in the market are either trial packs or must be bought. But this institution is giving away free antivirus and is available for anyone to download and use.

Internet Service Providers have been told to spread the message among their consumers to use this free service.

The Cyber Swachhta Kendra will be working closely with Cert-In.Cert-In is the Indian Computer Emergency Response Team – it deals with the cyber security threats like hacking and phishing in the country. Cert-In is a Government organization under Ministry of Electronics and Information Techno- logy.Cert-In collects data from all over the world on cyber-attacks, especially ones happening in India. Analysing this data, it sends the hacker data and links to the banks and ISPs (Internet Service Providers).Cyber Swachhta Kendra will provide antivirus software to users to specifically fight these cyber-attacks. 13 banks and 58 ISPs have already boarded this method.

Along with this also comes M-Kavach – an anti-theft solution for smart phones.

USB Pratirodh controls the usage of removable storage media like pendrives, external hard drives, cell phones and other supported USB mass storage devices. Only authenticated users can access the removable storage media.

Features:

1. Device Control:

All USB devices are uniquely identified. User can add or remove the devices to the database.

2. User Authentication:

Only authenticated user can access the device. If the user fails to authenticate, user gets access denied messages.

E-Waste Management

Megha Banakar
(4th Sem A' Section)

E-waste refers to electronic waste. E-waste recycling is the reuse and reprocessing of electrical and electronic equipment of any type that has been discarded or regarded as obsolete. Some of the common E-wastes include: home appliances such as televisions, air conditioners, electric cookers and heaters,air condioners among others; information technology equipments such as computers,mobile phones, laptops, batteries, circuit boards, among others, and other electronic utilities such as leisure, lighting, and sporting equipments. Recycling of e-waste is a growing trend and was initiated to protect human and environmental health mainly due to the widespread environmentalpollution impacts of e-waste.

Electronic waste or e-waste describes discarded electrical or electronic devices.Used electronics which are destined for reuse, resale, salvage, recycling or disposal are also considered e-waste. Informal processing of electronic waste in developing countries may cause serious health and pollution problems, as these countries have limited regulatory oversight of e-waste processing."

E-cycle components re-use

1. Plastic. All the plastic materials retrieved are sent to recyclers who use them to manufacture items such as fence posts, plastic, and equipment holders or insulators among other plastic products.
2. Metal. Scrap metals materials retrieved are sent to recyclers to manufacture new steel and other metallic materials.
3. Glass is retrieved from the Cathode Ray Tubes (CRTs) mostly found in televisions and computer monitors. Extracting glass for recycling from CRTs is a more complicated task since CRTs are composed of several hazardous materials. Lead is the most dangerous and can adversely harm human health and the environment.
4. Mercury containing devices are sent to mercury recycling facilities that uses a specialized technology for elimination for use in dental amalgams and metric instruments, and for fluorescent lighting.
5. Printed Circuit Boards. Circuit boards are sent to specialized and accredited companies where they are smelted to recover non-renewable resources such as tin, gold, palladium and other valuable metals.
6. Hard drives are shredded in whole and processed into aluminum ingots for use in automotive industry.
7. Ink and Toner Cartridges. Ink and toner cartridges are taken back to respective manufacturing industries for recycling.
8. Batteries are taken to specialized recyclers where they are hulled to take out plastic.

Batteries are taken to specialized recyclers where they are hulled to take out plastic. The metals are smelted is specialized conditions to recover nickel, steel, cadmium and cobalt that are re-used for new battery production and fabrication of stainless steel.

Recycling E-waste

Research and innovation play a critical role in environment protection by (a) providing assessments of current environmental status and future trends to identify pressures on our environment; (b) generating evidence, reviewing practices and building models toinform policy development and implementation; and (c) using novel technologies and methods to assist in the development of solutions that both address environmental challenges and realize opportunities in the green economy. Technologies for environment protection address to achieve clean air, clean water and clean land. Recycling is an important part of sustainable lifestyle and it helps in preserving the resources used by us. Paper, plastic, steel, electronics, food and clothing can all be recycled. The electronic item is broken down, materials are sorted and broken down further to be made into new electronics. Recycling those old electronics means helping prevent contamination from lead, cadmium and other toxic materials and reusing gold, copper, plastic and metals that would otherwise go waste. E-waste processing can be broken down into three major steps: (a) collection; (b) sorting / dismantling / mechanical processing (including shredding, magnetic separation, etc.) and (c) end-processing.

With megatons of obsolete personal computers, old cell phones, and other waste electrical and electronic equipment piling up every year, research and innovations are leading to the development to new recycling and recovering technologies. In general, the E-Waste technological innovation landscape can be divided into three key concepts: (a) material that are being recovered and recycled from e-waste streams, items such as plastics and metals; (b) source of e-waste and processing of these sources such as batteries, displays, cabling and printed circuit boards; and (c) the processing and logistics involved in e-waste treatment or recycling such as magnetic sorting, IT related management of recycling streams and similar items.

To live a sustainable life and uphold the values of sustainability, recycling must be a step performed in daily life. With energy and environment concerns at the doorstep of society, recycling is a promising first step in reducing the challenges and allowing for humanity to go on healthier and stronger. Recycling is an important piece in the puzzle of sustainable living and with strong efforts to participate in this action, we can all make a difference in our environment and the resources that we depend on.

References:

1. Patent Landscape Report on E-Waste Recycling Technologies, World Intellectual Property Organization, 2013.
2. Environmental Protection through Research, Environmental Protection Agency, 2013
3. http://telecomrecycle.com/risks-associated-with-improper-ewaste-recycling
4. E-Waste: A Global Hazard, Annals of Global Health, 2014.

Rashmi R

(2th Sem A' Section)

SAVE OCEANS

Mrs. Rajatha S
(Assistant. Professor)

Water! The Vital part for all form of life on the planet Earth. Water covers about 71 % of Earth's surface. Water on Earth moves continually through the water-cycle of evaporation and transpiration (evapotranspiration), condensation, precipitation, and runoff, usually reaching the sea. Approximately 70% of the freshwater used by humans. Fishing in salt and fresh water bodies is a major source of food for many parts of the world. Saline water covers approximately 360,000,000 km2 (140,000,000 sq mi) and is customarily divided into several principal oceans and smaller seas, with the ocean covering approximately 71% of Earth's surface and 90% of the Earth's biosphere.

With the increase in Human Population and the usage of Non-Renewable energy the earth is getting warmer each year which constitutes to "Global Warming". On the same lines, there is a huge usage of Plastic throughout the globe which is creating Marine Debris. This is affecting the Marine Life and there is a rapid depletion of fishes and other Marine Species.
Things that can be done to save our Oceans:

1. MIND YOUR CARBON FOOTPRINT AND REDUCE ENERGY CONSUMPTION

Reduce the effects of climate change on the ocean by leaving the car at home when you can and being conscious of your energy use at home and work. A few things you can do to get started today: Switch to compact fluorecent light bulbs, take the stairs, and bundle up or use a fan to avoid oversetting your thermostat.

2. MAKE SAFE, SUSTAINABLE SEAFOOD CHOICES

Global fish populations are rapidly being depleted due to demand, loss of habitat, and unsustainable fishing practices. When shopping or dining out, help reduce the demand for overexploited species by choosing seafood that is both healthful and sustainable

3. USE FEWER PLASTIC PRODUCTS

Plastics that end up as ocean debris contribute to habitat destruction and entangle and kill tens of thousands of marine animals each year. To limit your impact, carry a reusable water bottle, store food in nondisposable containers, bring your own cloth tote or other reusable bag when shopping, and recycle whenever possible

4. TRAVEL THE OCEAN RESPONSIBLY

Practice responsible boating, kayaking, and other recreational activities on the water. Never throw anything overboard, and be aware of marine life in the waters around you. If you're set on taking a cruise for your next vacation, do some research to find the most eco-friendly option

5. EDUCATE YOURSELF ABOUT OCEANS AND MARINE LIFE

All life on Earth is connected to the ocean and its inhabitants. The more you learn about the issues facing this vital system, the more you'll want to help ensure its health-then share that knowledge to educate and inspire others.

Poems

काँप उठी.....धरती माता की कोख !!

-- मुशाहिद फैजान

कलयुग में अपराध का
बढ़ा अब इतना प्रकोप
आज फिर से काँप उठी
देखो धरती माता की कोख !!

समय समय पर प्रकृति
देती रही कोई न कोई चोट
लालच में इतना अँधा हुआ
मानव को नही रहा कोई खौफ !!

कही बाढ़, कही पर सूखा
कभी महामारी का प्रकोप
यदा कदा धरती हिलती
फिर भूकम्प से मरते बे मौत !!

मंदिर मस्जिद और गुरूद्वारे
चढ़ गए भेट राजनितिक के लोभ
वन सम्पदा, नदी पहाड़, झरने
इनको मिटा रहा इंसान हर रोज !!

सबको अपनी चाह लगी है
नहीं रहा प्रकृति का अब शौक
"धर्म" करे जब बाते जनमानस की
दुनिया वालो को लगता है जोक !!

कलयुग में अपराध का
बढ़ा अब इतना प्रकोप
आज फिर से काँप उठी
देखो धरती माता की कोख !!

ನವ್ಯ ಪರಿಸರ

- ಶ್ರೀಕಾಂತ್ ಎಂ

ಕುಗ್ಗುತಿರುವ ಗಿಡಮರ
ಹದಗೆಡಿಸುವ ಮನುಜನ ಆತುರ
ಹೊಸ ಅನ್ವೇಷಣೆಯ ಬಗೆಗಿನ ಕಾತುರ

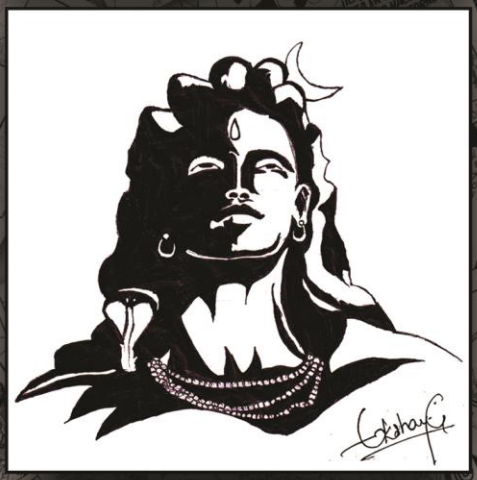
ಮಾಲಿನ್ಯಗಳು ಅನೆಕಥರ
ರಕ್ಷಿಸಲು ತಂತ್ರಜ್ಞಾನದ ನಿಯಮಾನುಸಾರ
ಎಲ್ಲಕಡೆ ಎಚ್ಚರಿಕೆಯ ರಾಯಭಾರ
ಆದರೆ...
ಯಾವಾಗಲೂ ಹಲವರಿಗೆ ತಿರಸ್ಕಾರ
ಇನ್ನು..
ಆಗಬೇಕು ಪ್ರಕೃತಿಯ ಉದ್ಧಾರ...

SKETCHES

Spurthy
(4th Sem "A" Section)

Akshay Gulaganji
(4th Sem "B" Section)

Spurthy
(4th Sem "A" Section)



Akshay Gulaganji
(4th Sem "B" Section)

Soujanya M.
(4th Sem "A" Section)

Spurthy
(4th Sem "A" Section)

Photography

Indrajeet Kumar
(4th Sem "B" Section)

Akshay Gulaganji
(4th Sem "B" Section)

Akshay Gulaganji
(4th Sem "B" Section)

Ashritha CR
(4th Sem "B" Section)

Ashritha CR
(4th Sem "B" Section)

Akshay Gulaganji
(4th Sem "B" Section)

High Clicks

Rajatha S.
(Assistant Professor)

Rajatha S.
(Assistant Professor)

Indrajeet Kumar
(4th Sem "B" Section)

Indrajeet Kumar
(4th Sem "B" Section)

Indrajeet Kumar
(4th Sem "B" Section)

Sandeep Jugali
(4th Sem "A" Section)

Activities in the Department

• One-day workshop on Python Certification Program with hands on sessions by Mr. Ramasatish K V , Asst.Prof., RNSIT and Mrs. Shreedevi Asst.Prof., RNSIT on 30th May 2017.

• One-day Seminar on Soft Skill Placement Training by Mr. Omkar B , Software Engineer, Cerner Pvt.Ltd on 19th August 2017.

• One-day Seminar on Preparedness for Placement Interview by Jai Balaji , Automation Engineer , Cerner Pvt.Ltd on 26th August 2017.

• One-day workshop on Meeting expectations of current industry trends Muralikrishna K Mysore Chief Liaison Officer, RNSIT on 8th Dec 2017.

Placement Activities

• The purpose of the Training and Placement is to guide students to choose right career and to provide knowledge, aptitude, skill and also to meet the manpower requirements of the Industry.

• The Training and Placement Department of RNSIT is facilitating the students of MCA department with an objective to assist students in obtaining placement in reputed companies.Apart from this, MCA department also strive hard to provide technical and non-technical training at department level by conducting sessions every week on Monday from 3:30-4:30pm.

• Technical and Non-Technical events are conducted like Code debugging, Technical quiz, Aptitude Test, Essay Writing, Group Discussion, CV Writing skills.

COE- Centre of Excellence

• One-day workshop on "Data Sciences in Cloud Avenues" by Mr. Prasad Joshi, CEO, Data Satva on 21st Feb 2018

• One-day workshop on Trending Technology in "Cloud APPS" by Mr. Srivatsa B V, Application Designer, Lenovo Technology on 03rd March 2018

• One-day workshop on "IoT and its Impact" by Mr. Arun J Rao, GM & Country Manager and Mr. Vivek Pandey, Sr Solutions Architect, ADLINK Technology Sgpe Pte Ltd on 07th April 2018

• One-day workshop on "Cloud Computing using Amazon Web Services" by Mr. Anil Bidari CEO , Cloud Enabled

Achievements

- Sagar G of 4th Sem MCA is adding a feather on the cap of MCA dept., by winning many prizes and awards.
    - Few of his achievements can be recalled as Won 2nd Place in Inter College VOLLEY Ball Tournament conducted by SAMARA 2018 AMC Engineering college.
    - 2nd Place in State level Engineering Volley Ball Tournament conducted by SAI LEO TROPHY 2018 Sai Ram Engineering College.
    - 1st Place in Volley Ball Tournament of Sanskrithi 2018, Dr. Ambedkar College of Engineering, 2nd Place in Volley Ball VTU Tournament of Gestione 2018, by the Department of MBA, RNSIT
    - 2nd Place in Volley Ball Tournament conducted at Arohana 2018 by the Department of Civil, RNSIT
- Vinod of 4th Sem MCA has won 2nd Place in Carrom Board Doubles conducted at Yantra 2018 by the Department of Mechanical , RNSIT,2nd Place in Treasure Hunt at Chiranoothana, RNSIT
- Susheel 4th Sem MCA has won Slow Drag Bike Race at Techno-Cultural Fest "Yantra-2018" by the Department of Mechanical, RNSIT
- Vinod Kumar of 4th sem MCA, won 1st place in Slow Drag Bike Race event at Techno-Cultural Fest "Arohana-2018" by the Department of Civil, RNSIT and also won 2nd place in Hagothon at Techno-Cultural Fest "Yantra-2018" by the Department of Mechanical, RNSIT.
- Chethan Kumar C of 4th Sem MCA won 2nd Place in Kabaddi at Techno-Cultural Fest "Gestione-2018" by the Department of MBA, RNSIT and he has also Participated in VTU South Zone Kabaddi Tournament.
- Susheel of 4th Sem MCA elected as CAT Committee Joint Secretary for Patheon -2018 and Vinod Kumar is elected as Co-ordinator for Patheon -2018
- Anuradha N and Mrutynjay Ganachari of 4th Sem MCA are runner ups in Signature Event at Techno-Cultural Fest "Gestione-2018" by the Department of MBA, RNSIT
- Anuradha N, Mrutynjay Ganachari and Akshay Gulaganji of 4th Sem MCA both worked as co-ordinators for Kannada Cultural team in Chiranootana .

Achievements

- Karthik V of II Sem MCA is runner up in kabaddi at Techno-Cultural Fest "Gestione-2018" by the Department of MBA, RNSIT and also Participated in VTU Kabaddi Tournament.

- A team consisting of Anuradha N, Ranjitha G R and Shri Raksha T S of 4th Sem MCA have won Dumb charades Event at Techno-Cultural Fest "Yantra-2018" by the Department of Mechanical, RNSIT.

- Rashmi S ,Shetty Samiksha and Priyanka Suresh shastri of 4th Sem MCA are runner up in Treasure Hunt Event at Techno-Cultural Fest "Yantra-2018" by the Department of Mechanical, RNSIT

- Dada khalander I. Rampur of IV Sem MCA has won first prize in Badminton Singles conducted at Sanskrithi 2018, at Dr. Ambedkar College of Engineering.

- Indrajeet Kumar and Srikanth M. of IV Sem MCA has secured First Place in Project Open House - 2017, Conducted by Department of MCA, RNSIT.

- A team consisting of Karthik, Amith, Chetan, Rakesh, Preetham, Pavan of 2nd Sem MCA, have Secured Runner-up in Cricket at "Vidyouth - 2018" by the Department of Electrical and Electronics, RNSIT.

- Rakesh and Praksh of 2nd Sem MCA represented State level NET-BALL conducted by Amature Net-Ball Association of Karnataka. on 14th and 15th March 2018.

- Somesh Hiremath of 4th Sem MCA has won the 2nd Prize in Dual Dance, Parichaya – 2017.