Raj Kumar Goel Institute Of Technology

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UDGHOSH

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WHATS INSIDE ?

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ONE WEEK FACULTY DEVELOPMENT PROGRAMME ON "EXPOSURE & REJUVENATION OF TECHNOLOGIES IN CHANGED ERA OF THE WORLD

One week faculty development programme was organized by the department from 6th July 2020 to 10th July 2020. Around 3000 participants registered for it from all across the globe. The Convener of the FDP was Dr. Pavan Kumar Shukla and the Co- Conveners were Ms. Richa Gupta and Mr. Kunal Lala.

Day-1
6 July, 2020(Monday)

Session-1
Prof. Rajiv Kapoor (Professor, DTU Delhi)
Time:-11:15 a.m. to 12 p.m.
Topic:- Object Tracking

Object tracking is a well-studied problem within the area of image processing. The ability to track objects has improved drastically during the last decades, however, it is still considered a complex problem to solve. The importance of object tracking is reflected by the broad area of applications such as video surveillance, human-computer interaction, and robot navigation.

The purpose of object tracking was to examine, evaluate, and make a summary of the most common object tracking methods. This includes selection of object representation, object features, methods for object detection, and methods for tracking the object over succeeding frames.

The application of object tracking has witnessed explosive increase in tracking techniques and algorithms for different sensors, cameras etc. The data which we obtain from these sources is considerably large. But some of these sources and data are less important. By picking out the most credible sources and efficiently merging data from different data sources like cameras in our case, we can eliminate redundancy issues and obtain accuracy and efficiency in object tracking also data. To deal with this we propose two confidence degrees-Internal confidence & External confidence for prediction of credibility level in every camera.

Object tracking is an area within computer vision which has many practical applications such as video surveillance, human-computer interaction, and robot navigation. It is a well-studied problem, and in many cases a complex problem to solve. The problem of object tracking in video can be summarized as the task of finding the position of an object in every frame. The ability to track an

object in a video depend on multiple factors, like knowledge about the target object, type of parameters being tracked and type of video showing the object.

Object tracking is an important part of a human-computer collaboration in a continuous environment, in the sense of allowing the computer to obtain a better model of the real world. For instance in the application area of autonomous vehicles where it is not possible for a human to communicate the state of the environment accurately and quickly enough given the requirements of the agent. The broad area of application reflects the importance of reliable, exact, and effective object tracking. There are several important steps towards effective object tracking, including the choice of model to represent the object, and object tracking method suitable for the task.

Session-2
Dr. Rahul Johri (Assistant Professor, USICT,IPU)
Time:- 12:00pm. To 1:00 p.m.
Topic: Opportunities Network: Concept and simulation using one simulator

In computer network research, network simulation is a technique whereby a software program models the behavior of a network by calculating the interaction between the different network entities (routers, switches, nodes, access points, links etc.). Most simulators use discrete event simulation - the modeling of systems in which state variables change at discrete points in time. The behavior of the network and the various applications and services it supports can then be observed in a test lab; various attributes of the environment can also be modified in a controlled manner to assess how the network / protocols would behave under different conditions.

Network Simulator (NS) is simply a discrete event-driven network simulation tool for studying the dynamic nature of communication networks. Network Simulator 2 (NS2) provides substantial support for simulation of different protocols over wired and wireless networks. It provides a highly modular platform for wired and wireless simulations supporting different network elements, protocols, traffic, and routing types.

A network simulator is software that predicts the behavior of a computer network. Since communication networks have become too complex for traditional analytical methods to provide an accurate understanding of system behavior, network simulators are used. In simulators, the computer network is modeled with devices,links, applications etc. and the network performance is reported. Simulators come with support for the most popular technologies and networks in use today such as 5G, Internet of Things (IoT), Wireless LANs, mobile ad hoc networks, wireless sensor networks, vehicular ad hoc networks, cognitive radio networks, LTE etc

Most of the commercial simulators are GUI driven, while some network simulators are CLI driven. The network model / configuration describes the network (nodes, routers, switches, links) and the events (data transmissions, packet error etc.). Output results would include network level metrics, link metrics, device metrics etc. Further, drill down in terms of simulations trace files

would also be available. Trace files log every packet, every event that occurred in the simulation and are used for analysis. Most network simulators use discrete event simulation, in which a list of pending "events" is stored, and those events are processed in order, with some events triggering future events—such as the event of the arrival of a packet at one node triggering the event of the arrival of that packet at a downstream node.

There are both free/open-source and proprietary network simulators available. Examples of notable network simulators / emulators include:
OPNET
Tetcos NetSim
NS2 / NS3

There are a wide variety of network simulators, ranging from the very simple to the very complex. Minimally, a network simulator must enable a user to

- Model the network topology specifying the nodes on the network and the links between those nodes
- Model the application flow (traffic) between the nodes
- Providing network performance metrics as output
- Visualization of the packet flow
- Technology / protocol evaluation and device designs
- Logging of packet/events for drill down analyses / debugging

Day-2
7th July, 2020(Tuesday)

Session-1
Dr. Anand Nayyar(Research & Scientist, Divy Tan university, Da Nang Vietnam)
Time:- 10:15a.m. to 11:30 a.m.
Topic:- Internet of Drone Things

Internet of Things (IoT) provides a strong platform to connect objects to the Internet for facilitating Machine to Machine (M2M) communication and transferring data using standard network protocols like TCP/IP. IoT is gaining rapidly day by day and till date, billions of devices are already connected and in the coming few years, the number can even touch trillions. With consistent advancements, lots of areas like Military, Agriculture, Industry, Healthcare, Robotics, Nanotechnology are adapting IoT for advanced solutions. The research paper proposes a comprehensive view of the new concept of IoT especially proposed for robotics i.e. Internet of Robotic Things (IoRT). IoRT is a mix of diverse technologies like Cloud Computing, Artificial Intelligence (AI), Machine Learning and Internet of Things (IoT). The paper also discusses architecture which plays a significant role in design of Multi-Role Robotic Systems for IoRT. In addition to this, enlists technologies behind IoRT, applications of IoRT and existing robotic systems based on Humanoid, Mobile, Flying and Swarm envisaged for future IoRT systems. The paper provides a strong base for researchers to envision the concept of IoRT and enable them to think out-of-the-box to design and implement IoRT based robotic systems in real-world applications.

Internet of Things and Robotics convergence can be observed in different types of heterogeneous and distributed robotic control system like Multirobot Systems, Autonomous Robots, Network Robots, Cloud Robots. The primary objective of IoT integration with Robotics is to improvise the movements, sensing, tracking and monitoring as well as autonomous behavior in robots. The concept of Internet of Robotic Things (IoRT) was coined by Dan Kara, practice director of robotics at ABI Research. According to Dan Kara, "Currently, most IoT initiatives are focused on using connected devices with simple, passive sensors to manage, monitor and optimize systems and their processes, usually as part of supply chain optimization efforts. The combination of advanced sensing, communication, local and distributed process, and actuation take the original vision for the IoT to a wholly different level, and one that opens up whole new classes of opportunities for IoT and robotics solution providers, as well as users of their products".

According to ABI Research, IoRT is defined as, "Intelligent devices that can monitor events, fuse sensor data from a variety of sources, use local and distributed 'intelligence' to determine a best course of action.

Mostly, the brain of robots and control mechanisms are local i.e. Microcontrollers or Microprocessors attached on Robotic systems themselves. But in IoRT, the computation and control can be performed in the cloud. Internet acts as the primary medium for IoRT robotic systems to get connected to the cloud. With advancements in robot operating systems framework, there is no longer any complexity in communication. All the communication can be performed with just a simple call of the API (Application programming interface).

Considering the viewpoint of technology, the following technologies will assist IoRT in performing complex tasks and operate in multi-dimensional environment.

- Communication Technology: Multiple radio access technology acts as a bridge to connect Intelligent devices at the edge and has given birth to heterogeneous mobile networks that require efficient configuration, management and regular update to cope up with next generation robotic things.
- Artificial Intelligence (AI): With Artificial Intelligence techniques, IoT based robotic systems can be integrated with diverse IoT applications without any hiccup and create optimized solutions for complex problems in real-world.
- Cognitive IoT Technologies: Cognitive IoT technologies will play a significant role in enhancing intelligence in systems to allow operational efficiency in all complex business operations and explore new business ventures.

So, IoRT systems should be able to efficiently handle all complex situations and challenges in IoT environments.

Session-2
Dr. Ashutosh Singh (Professor, NIT Kurukshetra)
Time:- 11:30 a.m. to 1:00 p.m.
Topic:- Internet of Things & Cloud Computing

When we talk about technological advancements in the last 3 to 5 years names like Artificial Intelligence, Chatbots, Augmented Reality, Machine Learning, etc. comes to our mind, but what this list is missing is "Cloud Computing" , even today there are many people, even some developers who have no idea what this actually means and how its changing the traditional way of computing, also there is still a wide misconception that cloud is another name for drive, storing data over the internet, well storage is a part of cloud computing but its more than that, so much more than that . When you actually understand what it is and how it has changed the way business is done and has enabled many people to reach goals and try new things that they've never done before in a way that they have never thought before, then you will acknowledge why every major IT company whether its Google, Amazon, Microsoft, Alibaba, IBM is investing in cloud computing and have released their own cloud computing services like Google Cloud, AWS, Alibaba Cloud, IBM Cloud, Azure to name a few.

The underlying idea behind IoT and the Cloud computing is increase efficiency in the day to day tasks, without disturbing the quality of the data being stored or transferred. Since the relationship is mutual, both the services complement each other effectively. The IoT becomes the source of the data, while the Cloud becomes the ultimate destination for it to be stored.

As we progress through the years, we will see a lot of changes happening; some of these changes will be gradual while others will be more rapid. Companies likes Amazon AWS, Google and Microsoft will become the undisputed leaders of Cloud IoT Services, making the challenge even more worthwhile.

As the Cloud gathers more attention and speed slowly, there are a multitude of Cloud service providers which are beginning to offer pay per use models to businesses. This way, businesses only need to pay for what the computer resources they use.

Some more Reasons which Highlight the Importance of the Cloud in the World of IoT are:

- Reduced cost of ownership: Inflation is a never ending menace which every business has to face sooner or later. The Cloud technology provides ample resources to businesses so that they do not have to spend through the nose on setting up their infrastructure. In the absence of on-site systems, hardware and software, the IT department is more focused on their day to day up keeping activities, which are often an evident benefit with the Cloud.
- Business continuity programs: The Cloud computing is capable of running businesses even in the midst of sudden disasters. Since the data is maintained on additional separate servers, there is no imminent danger to the private data, making the Cloud an indispensable part of Internet based firms.

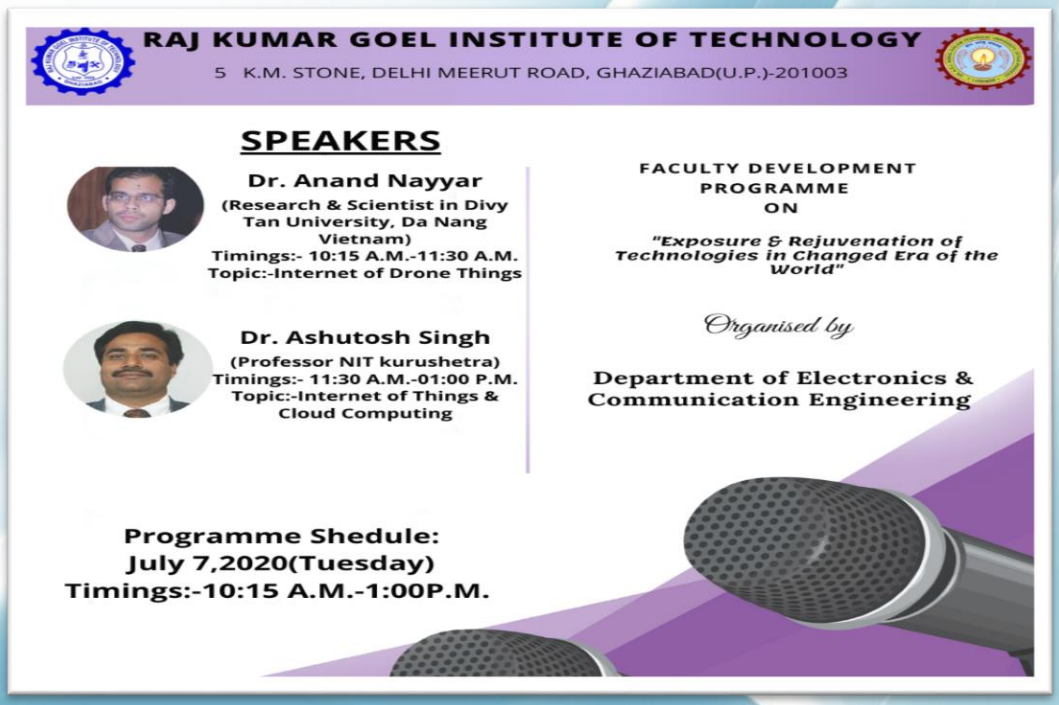
How will the IoT and the Cloud Expand?

- Startups: As more and more Cloud vendors pop up, startups will continue to evolve and become more efficient, making the technology flow stronger yet smoother. The transition from one source to another will become a cinch, making the Cloud a strong place to function.
- Developing countries: The strongest and biggest source of revenue for the Cloud comes from the developing countries, as they are trying to play catch up with the times. However, this revenue will drastically dip, once these countries are able to adopt their technology to the Cloud, marking the adaptation as complete.
- IoT and cloud computing for Future Internet:- The question however remains how will the devices remain interconnected throughout? The answer lies in the connectivity provided by the internet of things cloud service. Greater usage of the iot in cloud has acted as a

catalyst for the development and deployment of scalable Internet of Things applications and business models. The cloud computing and IoT have become two very closely affiliated future internet technologies with one providing the other a platform for success. There are numerous benefits which the convergence of IoT and Cloud computing has derived.

Poviding Infrastructure:

- Iot in cloud offers public cloud services can easily help the IoT area, by providing third party access to the infrastructure. Hence, the integration can help IoT data or computational components operating over IoT devices.
- Increased Scalability: IoT devices need a lot of storage to share information for valuable purposes. Iot in cloud, like the StoneFly Cloud Connect to Microsoft Azure can provide customers with greater space which can increase as per the users demand. Helping to resolve the storage needs of customers.
- Increased Performance: The large amounts of data produced by IoT devices need extreme performance to interact and connect with one another. Iot in cloud provides the connectivity which is necessary to share information between the devices and make meaning from it at a fast pace.
- Pay-as-you-go: Internet Cloud Computing infrastructures help IoT to give meaning to the greater amount of data generated. Users have no worry of buying greater or less storage. They can easily scale the storage as the data generated increases and pay for the amount of storage they consume with Internet Cloud Computing.



Day-3
8th July, 2020(Wedeneday)

Session-1
Dr. Praveen Kumar Malik (Professor, Lovely Professional University)
Time:- 10 a.m. to 11:30 p.m.
Topic:- Vehicular Communication: Latest trends

In recent years, there is an advancement towards the applications of vehicular communications and leading research area as there is a lot of scope regarding enhancing safety measures, mobility, security and comfort. As the technology is moving ahead towards the 5G, there is a direct impact on the future of vehicular communications.

History goes backwards to the first prototype of the automated highway system which was introduced for the improvement in safety, comfort, speed and efficiency. Back days these were the four basic objectives on which the entire automation system was developed. As the era changes, many more objectives were introduced such as road safety, time management, accident avoiding systems and smart traffic lights with ambulance priority.

To accommodate these many smart features for the vehicles, there is an immense need of the bandwidth and the latest technology for multi-band features. The vehicular system should accommodate in GSM-1800/1900, along with DCS-1800 (digital communication system), PCS-1900 (personal communication service), UMTS (Universal Mobile Telecommunications System), LTE2600 (Long-Term Evolution),radio band ISM 2.4G (Industrial, Scientific, and Medical), WLAN (wireless local area network), Bluetooth, Wi MAX (Worldwide Interoperability for Microwave Access), IEEE802.11p protocol based Vehicle-to-everything, DSRC (dedicated short-range communications) and WAVE (wireless access in vehicular environments)communication bands .As the communication can be handled between vehicles, vehicle to net-work/infrastructure, vehicle to devices and vehicle to everything, there is a need of direct communication as well as multi-hop communication. With the emerging concepts of millimetre wave, where the radio frequency spectrum ranges from 30 to300 GHz, which is much higher than the present spectrum range of below 6 GHz. As more number of features are to be accessed using the vehicular communication, a variety of compact and powerful antennas are required.

Vehicular Network Architecture (VNA):- The type of communication referred to vehicular networks is entitled as vehicle-to-everything communication which is sub-categorized as

(i) vehicle-to-vehicle (V2V)communication which is ad hoc and the communication can be established in two ways depending on the range of communication between the two vehicles. Multi-hop communication comes to existence when the vehicles

are notin the range . Most of the time this is useful at parking lots where the empty space can be detected way before the vehicle enter the parking area.

(ii) Vehicle-to-network (V2N) communication is used for transferring the data towards the cloud, fog and grid networks. This type of communication basically needs infrastructure where the nearest roadside units can be connected using hotspots and the data can be transferred to a cloud.

(iii) Few more communications are possible such as vehicle-to-pedestrian (V2P), vehicle-to-infrastructure (V2I) and vehicle-to-device(V2D) in vehicle-to-everything communication. Establishing these many varieties of communication, a powerful system architecture of the vehicular network is required which must provide in-vehicle domain, adhoc domain and infrastructure domain components.

(iv) In-vehicle domain is used for information of the vehicle like the fuel consumption, temperature in the vehicle, opening and closing of the sunroof using voice control, etc., and these can be achieved using human–machine interface along with microcontrollers in a controller area network (CAN) . Different wireless technologies such as Bluetooth, Wi-Fi and GPS are used to achieve the in-vehicle domain.

Session-2
Dr. Rajiv Kumar Tripathi(Assistant Professor, NIT Delhi)
Time:- 11:30 a.m. to 1:00 p.m.
Topic: Different Transform in Signals & Systems

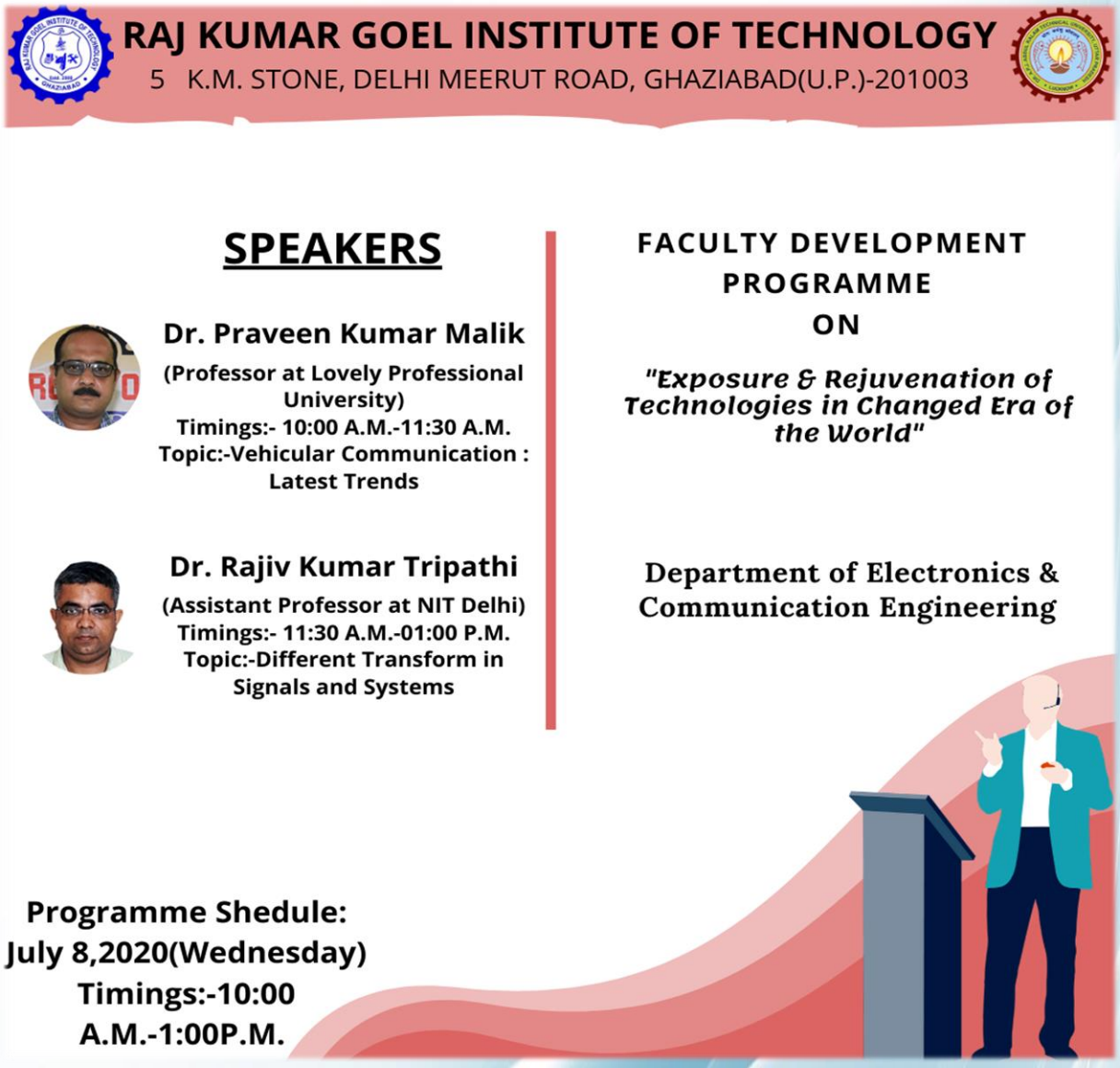
Almost any physical setup can take on a "system" view. Engineers model the system using mathematics. The main goal of system analysis is to be able predict its behaviour under different conditions. One of the most useful mathematical tools to analyse and thus, predict, systems is the Laplace Transform.

- Signals in time-domain and frequency-domain views – This is fundamental to signal processing, Depending on what you want to do with the signal, processing in one of the two domain will proof beneficial. A good example is shown earlier when a sinewave is corrupt by large noise signal. In time-domain, it looks a mess. In frequency-domain, the energy is spread over the entire spectrum and therefore the sinewave is not "masked" by the noise.
- Any signal can be represented by weighted sum of sinusoids – This is the essence of Fourier transform, and it is how we convert from one domain to another.
- Sinusoid as sine, cosine or exponential functions – Sinusoids form the "building blocks" of signals in frequency domain. If you project a sinewave of one frequencyonto another

sinewave of a different frequency, no matter how close they are, the projection is zero. This implies that the two sinewaves are "orthogonal" and they have nothing in common. This is also why sinusoids form good building blocks.

- Fourier Transform – converts a time-limited signal with finite energy from time domain to frequency-domain
- Periodic signal uses Fourier series in frequency domain – The fundamental frequency f0 = 1/T0, the period of the signal, and all other components are called harmonics, and they are integral multiples of f0.
- Sampling theorem – One must sample at fs samples per second, which is at least TWICE that of the maximum frequency of the signal fmax: $fs \geq 2*fmax$.
- Spectrum of a sample signal – When you sample a signal, the spectrum of the continuous time signal get repeated indefinitely at multiple of fs, i.e. at ±nfs, where n is all integers except 0: ±1, ±2 ….
- Sampling a signal too slowly corrupts it through aliasing – If you use a sampling frequency fs which is lower than 2*fmax, aliasing, or spectral folding occurs and this will corrupt the signal in a way that you cannot go back to continuous time without error.
- Rectangular windows – When extracting a portion of a signal to analyse, you are effectively multiplying the signal with a rectangular window. This results in leakages – signal energy leaked to its neighbouring frequency components.
- Better to use window functions with smooth edges – Leakages can be reduced significantly by using other they of windowing functions, such as Hamming and Hanning windows.

One of the most important property of any system is linearity. A linear system exhibits two important properties: 1) additive: if x1 leads to y1, x2 leads to y2, then x1+x2 leads to y1+y2; 2) scaling: if x leads to y, kx leads to ky. These two property can be combined to form the general form of superposition, a principle that we have already covered extensively last year. Many physical systems are NOT inherently linear. For example, we have already considered that our ears are sensitive to sound volume in a logarithmic manner. An incandescent light bulb produce light output as a quadratic function (i.e. square) of the input voltage. However, we can usually approximate a non-linear system as linear over a range of signal, particularly if the range is small. Therefore we often perform the so-called "small signal analysis", restricting the signal to perturbation around a certain operating point.



Day-4
9th July, 2020

Session-1
Dr. Niketa Sharma (Assiciate Prof., SKITM Jaipur)
Time:- 10:00 a.m. to 11:30 a.m.
Topic:- Bio-FET Sensor Technology: A clinical Prospective

A field-effect transistor-based biosensor, also known as a biosensor field-effect transistor (Bio-FET or BioFET), field-effect biosensor (FEB),or biosensor MOSFET, is a field-effect transistor (based on the MOSFET structure)that is gated by changes in the surface potential induced by the binding of molecules. When charged molecules, such as biomolecules, bind to the FET gate, which is usually a dielectric material, they can change the charge distribution of the underlying semiconductor material resulting in a change in conductance of the FET channel. A Bio-FET consists of two main compartments: one is the biological recognition element and the other is the field-effect transistor. The BioFET structure is largely based on the ion-sensitive field-effect transistor (ISFET), a type of metal-oxide-semiconductor field-effect transistor (MOSFET) where the metal gate is replaced by an ion-sensitive membrane, electrolyte solution and reference electrode.

FET-based devices are semiconductor devices comprised of metal-oxide-semiconductor (MOS) structure. When a metal potential (ψm) is changed, the electric field induces the band bending of the semiconductor channel accordingly. It results in channel carrier concentration changes, such as accumulation, depletion or invertion. In conventional MOSFET, we intentionally apply gate voltage to invert the channel (i.e. $VG > Vth$) and turn on the transistor. Similarly, the gate potential can be given by other factors, such as solution potentials (e.g. pH value) or charge of biomolecules. These factors influence the status of channel carriers and make the current-voltage characteristics shift positively or negatively. Then the characteristic change is presented by the difference of threshold voltage. Therefore, the difference of threshold voltages (ΔVth) can be calculated as an indicator of sensitivity.

Biosensing element is the other crucial factor that needs to be taken into account in designing FET biosensors. In the dawn of these FET-based devices, antibodies and DNAs/RNAs are prevailing candidates mainly because they are simple, low-cost to synthesize, can be immobilized on a wide range of various surfaces and provide fast detection via high specificity and affinity binding with the target molecules, which are usually protein and nucleic acids in most of biomedical applications. Nevertheless, on one hand, not only is synthesizing antibodies from animals expensive and inappropriately commercialized but also coverage of immobilization areas is far less than full due to stearic hindrances from bulky structure of antibodies . On the other hand, DNA and RNA probes require high ionic strength conditions to shield their intermolecular repulsive force for hybridizations. Both of them weaken or mislead detected signal by FETs in physiological environments with high screening effect (also known as Debye length).

Besides, guanine–cytosine-rich sequences on nucleic acid structures, which form stem-loop structures as well as self- and cross-dimers, also contribute to false detection results from nonspecific binding. The subsequent periods thus have witnessed an exploration of new generations including antibody fragments (Fab, Fab' and scFv), aptamers, peptide nucleic acids (PNA), locked nucleic acids (LNA) and neutralized DNA (nDNA) as bio-probes in order to subjugate these drawbacks.

During the most recent years, efforts primarily concentrate on improving sensitivity of FET devices via breakthrough of nanotransducers and/or probe design. The former approach includes inventing novel fabrication methods as well as discovering new materials for nanotransducers whereas the latter strategy focuses on continuing exploiting compact-structured recognition elements (aptamer and antibody fragments) within controlling immobilized orientation and optimizing probe density as well as incredible strategies of signal enhancements in order to overcome limitations of screening effect in high ionic strength of physiological environments. This review centralizes on notable advances in FET research and development of FET biosensors for biomedical applications from 2016 to early 2019, dividing into three categories: Evolutions of nanotransducers, antibody and its fragments as bio-probes, and nucleic acid as bio-probes. References are limited to published articles and the others reported before this period are also exploited as additional resources in order to provide the fundamental knowledge in this field as well as depict the explosion of FET-biosensors before this period.

Session-2
Dr. Raghvendra Chaudhary (Assistant Professor, IIT Dhanbad)
Time:- 11:30 a.m. to 1:00 p.m.
Topic: How can 5G communicate benefit from Cognitive Radio

There is an ever growing need for improved data transfer over the smart network device which exists. 5G is a futuristic technology which tries to achieve high data rates with reduced latency through wireless worldwide interconnections. There are many limitations related to the implementation of 5G technology. Cognitive Radio is a smart radio which addresses problems related to Spectrum Allocation where allocation is carried out dynamically. Cognitive Radio is capable of learning and adapting its operating and functional parameters according to the environment in which it operates. In order to make the concept of 5G realistic and to overcome the challenges in 5G, the flexibility and adaptability of Cognitive Radio can be of use. The limitation of the radio spectrum and the rapid growth of communication applications make optimal usage of radio resources essential. Cognitive radio (CR) is an attractive research area for 4G/5G wireless communication systems, which enables unlicensed users to access the spectrum. Delivering higher spectral efficiency, supporting the higher number of users, and achieving higher coverage and throughput are the main advantages of CR-based networks compared to conventional ones. The main goal of this book is to provide highlights of current research topics in the field of CR-based systems. The book consists of six chapters in three sections focusing on primary and secondary users, spectrum sensing, spectrum sharing, CR-based IoT, emulation attack, and interference alignment.

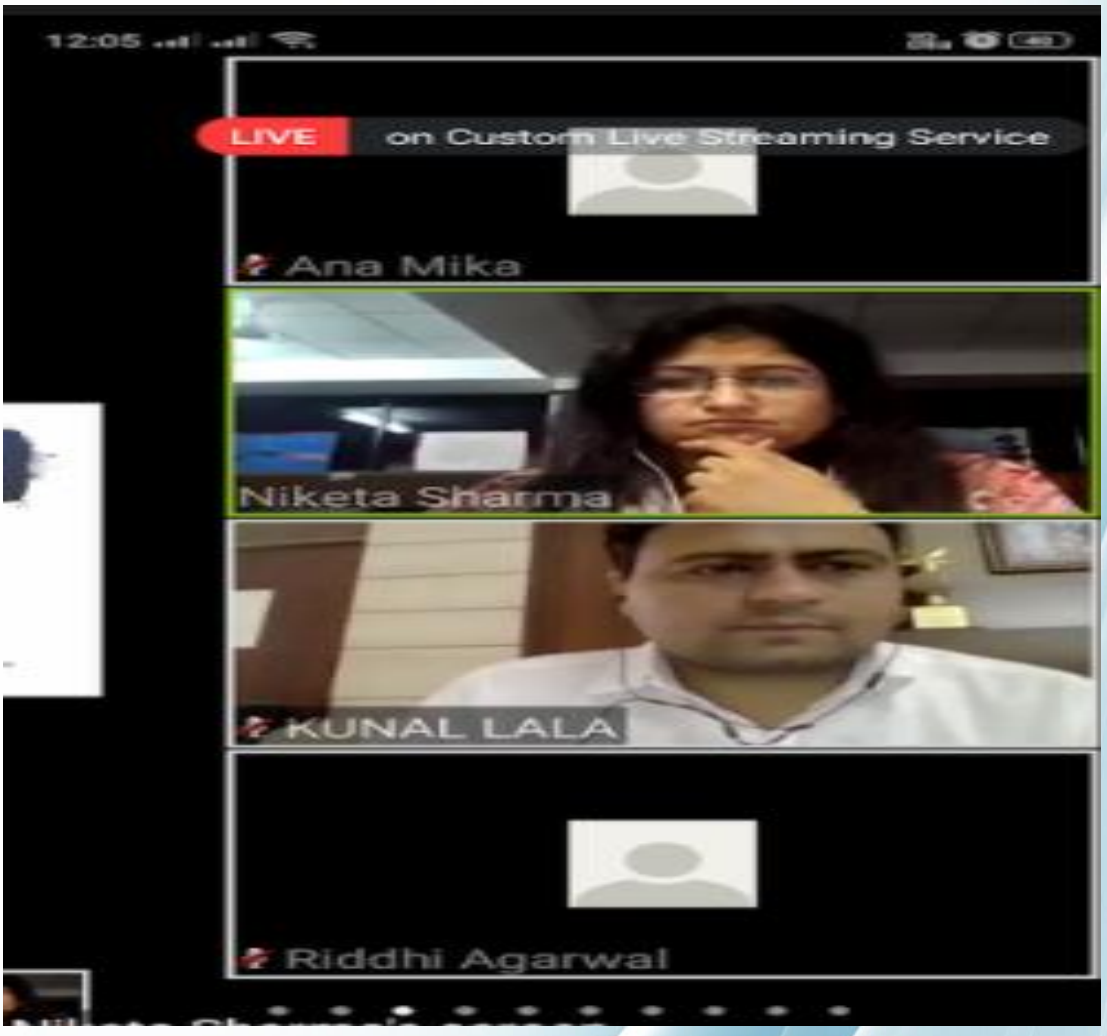
With the increase in the number of communication devices, the requirement for higher bandwidth is essential. To achieve this goal, research and industrial communities have both

suggested that future wireless systems will take advantage of the numerous emerging technologies. Utilization of Cognitive Radio (CR) for the next-generation Fifth Generation (5G) communication technology is the major advancement for getting a higher bandwidth in a cellular communication network. Considering the fact that CR technology can potentially maximize the utilization of bulk of the unused communication spectrum bands for the future 5G of wireless network.

With increasing desire to make life easy, the number of smart devices is increasing every day. The available bandwidth allocation in 4G technology cannot handle such large number of devices. Further the services offered by these mobile devices also increase the mobile traffic and there is need to provide the fast and efficient services at low cost. There is an exponentially swelling in the count of devices which are hungry for bandwidth as well as there is a huge shortage in the vacant spectrum. Also, the availability of broadband access to remote areas and integration of varied networks on a common platform remains elusive. All the above mentioned factors have led to the advent of next generation mobile network technology, namely 5G technology . In this technology, it is possible to achieve high data rates with minimum latency and reduced energy consumption. This technology is capable of handling heterogeneous devices. In spite of its many advantages, there are many challenges and implementation issues in 5G.

Apart from the humongous increase in the mobile traffic, the nature of traffic is not only random but also diverse. The diverse variation in traffic in terms of periods of time poses difficulties in the planning of network infrastructure. The networks are unable to handle huge loads during peak traffic and become underutilized when traffic is less. Further, the services offered are also diverse such as browsing, multimedia and gaming and hence the Quality of Service requirements are different for various services. The existing cellular network are ineffective to handle high volume multimedia downloads. The major challenge is to look into aspects to make the futuristic technology of 5G real. Utilization of spectrum, consumption of energy and efficiency of cost are three major performance measures that should be majorly looked into in the development of a 5G system. In spite of the many advantages, 5G gravely experience difficult performance issues.

Cognitive Radio (CR) offers scope for optimum utilization of spectrum by secondary users who use the vacant spectrum holes. Cognitive Radio is essentially developed for Dynamic Spectrum Allocation which makes the radio smart. This radio is adaptable and flexible and has ability to change its operating parameters according to the environment in which it operates. This Cognitive Radio seems to be a capable expertise which can handle the challenges associated with 5G technologies. Cognitive radio has the ability to utilize the underutilized vacant band of frequencies while not creating any damage or intrusion to the existing users. The expenses involved in leasing the spectrum will be much lower than purchasing the spectrum. Hence the concept of spectrum on demand is popularly implemented by Cognitive Radio at a very low cost. Hence we can say that Cognitive Radio offers a potential solution to the exploding traffic woes, with random and diverse traffic which is to be tackled by 5G technology.



Day-5
10th July,2020(Friday)

Session-1
Dr. Om Mishra(Assistant Professor, KIT, GGSIPU Delhi)
Time:- 10:00 a.m. to 11:30 a.m.
Topic:- Human Motion Analysis

The study of motion is one of the most interesting and active areas in Computational Vision, particularly considering the human motion. Human motion analysis usually follows a general framework: feature extraction, where the identification of the objects characteristics to be analyzed in the image frames is made; feature correspondence, where the problem of matching

features between consecutive frames is approached; and finally high level processing can be considered, for instance, in the recognition of human movements, activities or poses.

In the areas of medicine, sports, video surveillance, physical therapy, and kinesiology, human motion analysis has become an investigative and diagnostic tool. See the section on motion capture for more detail on the technologies. Human motion analysis can be divided into three categories: human activity recognition, human motion tracking, and analysis of body and body part movement.

Human activity recognition is most commonly used for video surveillance, specifically automatic motion monitoring for security purposes. Most efforts in this area rely on state-space approaches, in which sequences of static postures are statistically analyzed and compared to modeled movements. Template-matching is an alternative method whereby static shape patterns are compared to pre-existing prototypes.

Human motion tracking can be performed in two or three dimensions. Depending on the complexity of analysis, representations of the human body range from basic stick figures to volumetric models. Tracking relies on the correspondence of image features between consecutive frames of video, taking into consideration information such as position, color, shape, and texture. Edge detection can be performed by comparing the color and/or contrast of adjacent pixels, looking specifically for discontinuities or rapid changes. Three-dimensional tracking is fundamentally identical to two-dimensional tracking, with the added factor of spatial calibration.

Motion analysis of body parts is critical in the medical field. In postural and gait analysis, joint angles are used to track the location and orientation of body parts. Gait analysis is also used in sports to optimize athletic performance or to identify motions that may cause injury or strain. Tracking software that does not require the use of optical markers is especially important in these fields, where the use of markers may impede natural movement.

Human Motion Methodologies: Most methods developed for human motion analysis use models to fit human body parts to the given images. The geometric structure of human body can be represented as stick figures, 2D contours or volumetric models. They developed a matching algorithm based on Dynamic Programming to establish a mapping between postures from different motion cycles. Then, the model is trained, a mean walking performance is automatically learnt and the statistics about the observed variability of the postures and motion direction are also computed. 2D contours are often used to detect humans in image sequences; for example, in an algorithm was presented that consists in three main steps: detecting human candidates, validating the model of a human and tracking of the model in consequent frames. The model adopted is a six-link model with an articulated head that can cope with a frontal view of a person. It starts using simple means to find a human candidate within a region of interest and afterward validates it using an extended biped human model. The system performs the tracking on the 3D voxel reconstructions computed from the 2D foreground silhouettes, the human body model used consists of ellipsoids and cylinders and is described using the twists framework resulting.

Other type of methodology consists in using the appearance to construct the human model. In moving people are modeled with the assumption that, while configuration can vary substantially from frame to frame, appearance does not. An algorithm that first builds a model of the appearance of the body of each individual by clustering candidate body segments and then uses this model to find all individual in each frame. A different possibility is to use a motion model to accomplish human tracking. For example, in a motion model was built from the semi-automatically acquired training data and motion constraints were explored by analyzing the dependency of joints. Both of them were then integrated into a dynamic model in order to reduce the size of the sample set.

Session-2
Dr. R.P. Tewari (Professor MNIT, Prayagraj)
Time:- 11:30 to 1:00 p.m.
Topic:- Emerging Trends in Robotics

The growing need for advanced automation solutions in numerous industries and the mounting demand from the IT industry due to increasing work speed of employees are driving the global IT robotic automation market. The requirements for automation in big data analytics and for saving times in various companies are fueling the stipulation in the global IT robotic automation market.

A trend in advancing the business procedures for enhancing productivity along with providing satisfaction to the customers is expected to drive the demand in the global IT robotic automation market. Automation is highly adopted in the IT industry for developing business methods along with its financial management. It holds the key factor to thrust the global IT robotic automation market. Even in the infrastructural management and BPO services, robotic automation is widely adopted, as it helps in query handling, task allocation, automating invoicing, and payment processing

Robotics Evolving The Manufacturing Sector:-

The evolution of technology into robotics, artificial intelligence, and machine learning has drastically improved factory production capabilities and product quality. These machines can be programmed to perform a variety of tasks with superior precision and repetition. Integrating robotics technology into a business may raise the upfront and maintenance costs, but it greatly reduces operational and labor costs.

Today, assembly operations enclose 10 percent of robotics in manufacturing technology. Integrating of assembly robots in the manufacturing sector has reduced operational rates, thereby revolutionizing production lines and computing power. Manufacturing technology employing robotics deliver an enhanced reach, load capacity, speed and performance in a wide variety of intelligent functions. The introduction of sensors has further simplified robotic applications with

greater precision and control. These sensing technologies make assembly robots, even more, cost-efficient.

As the manufacturing landscape evolves, robotics is called upon to carry out tasks faster, smarter and cheaper — robotics is reshaping the manufacturing sector. The new generation of collaborative robots offers a variety of "human" capabilities and traits such as memory, sensing, trainability and finesse with great efficiency and repetition. These robots can be fully automated and controlled by the human workforce, thus influencing the manufacturers and driving global competitiveness. Moving quickly and accurately through the processes, robots can adapt and carry out tasks faster than humans without error.

With force sensing fast becoming a standard among robots, the need for expensive fixtures and tooling is reduced. A recent survey of manufacturers conducted by PwC indicates almost 59 percent of global manufacturers have integrated robotics into their manufacturing technology. This new phase of manufacturing has piqued the interest of manufacturers of all stripes and even the firms outside traditional industrial manufacturing have begun to adopt robotics.

Robotics will continue to transform manufacturing in numerous ways, but there are 6 trends in robotic automation that will play a key role in the near future.

1. Adoption of Industrial Internet of Things (IIoT) Technology

Robots will increasingly deploy smart sensors at the edge of production to collect data previously inaccessible to manufacturers. This trend is currently underway and will lead to new levels of productivity and efficiency.

2. Industrial Cybersecurity as a Priority

As robots become more connected to internal systems for data collection, the cybersecurity risks increase. Manufacturers will be forced to address vulnerabilities in their processes and invest heavily in cybersecurity to ensure safe, reliable production.

3. Big Data Analysis Becomes a Competitive Differentiator

Robots will become a key source of information on the factory floor. The collection of data, however, is just one piece of the puzzle. Manufacturers will have to implement systems to organize and analyze all of this information in order to act on it.

4. Open Automation Architectures Will Be Implemented

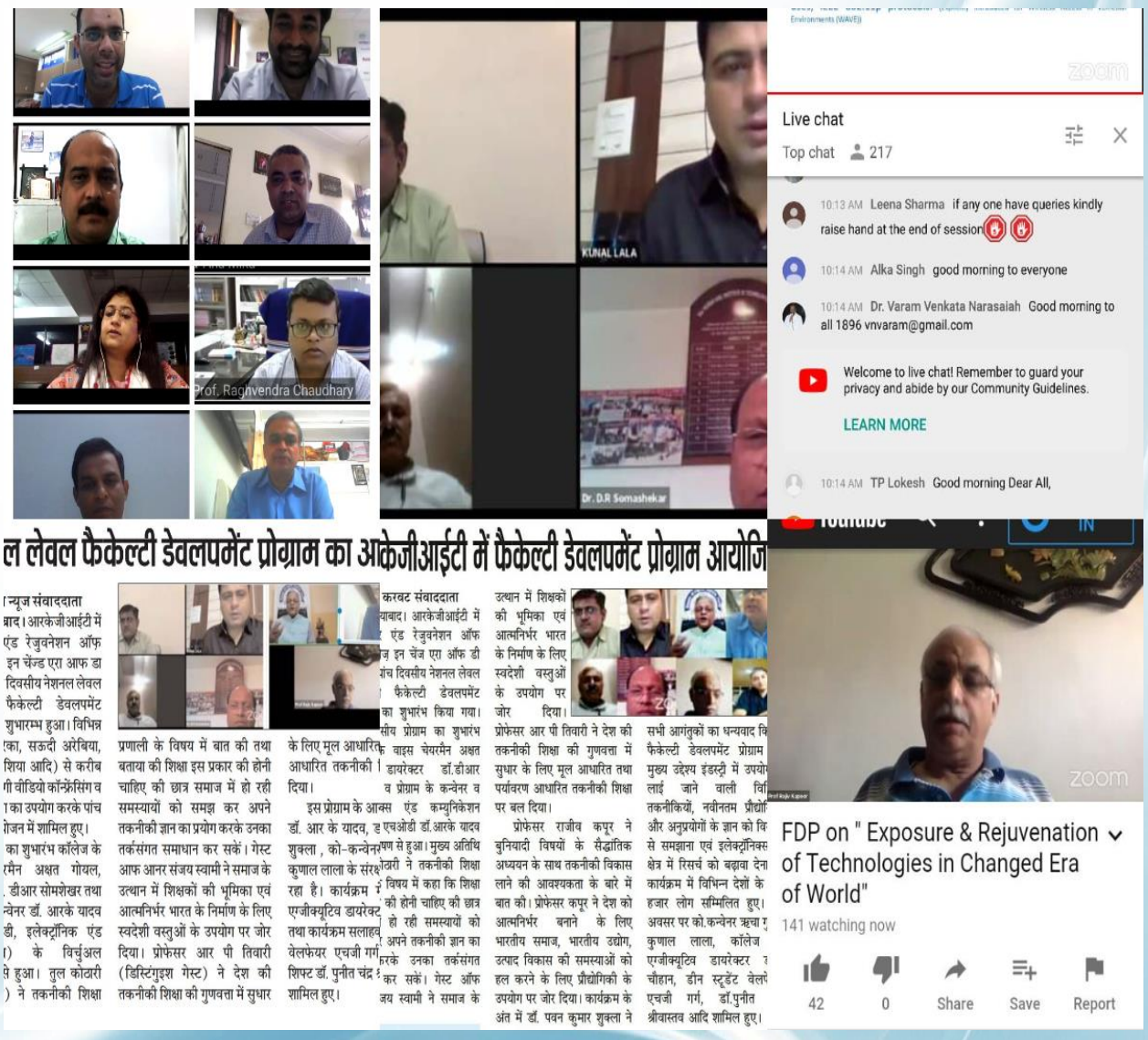
As robotic automation gains widespread adoption, the need for open automation architectures grows. Large industry players will work with industry organizations to produce standards and open documentation that make robotic integration easier while improving product compatibility.

5. Virtual Solutions Will Invade Physical Processes

Virtual solutions will become an integral part of industrial robotics. One current growing application is the virtual representation of robotic systems for proof of concept and offline programming.

6. Collaborative Robots Will Continue to Grow in Popularity

Collaborative robots can work safely alongside humans and are often far cheaper than their industrial counterparts. As collaborative robots become more capable in tough industrial settings, they will see greater adoption by manufacturers with strict ROI requirements.



INTERNATIONAL WEBINAR TALK SERIES

Raj Kumar Goel Institute of Technology, Ghaziabad organized an International webinar talk series in collaboration with State project Implementation Unit – Uttar Pradesh (SPIU- UP) , AKTU Lucknow and Technical Education Quality Improvement Programme- III (TEQIIP –III – A world bank assisted project under ministry of HRD. Govt. of India) from 25th June to 16th July 2020. The valedictory program of this series is scheduled on 23rd July 2020 at 7 pm to 8 pm.

The Department of Electronics and Communication Engg. of RKGIT has taken an initiative to arrange the technical and informative talks of different eminent persons across the world to share their engineering and technical expertise with our engineering graduates, Faculty members and Industrial technocrats to motivate them and inspire for some innovations in different field of Technology specially under the influence of the consequences of this duration of pandemic covid-19 effects. The details of this talk series are given as:

Theme: Technical and Social Changes as the consequences of Covid -19 in Engineering and Technology

With the entire Covid-19 situation going around the world, the most hit parameter of any country is its economy due to all the lockdown and shut down across the country. Everyone has been affected due to this situation in either way. The talk series is specially designed in a sequence to understand the way outs and solutions to move ahead after these circumstances. The upcoming engineering graduates and all technical persons either from education sector or industry can be motivated and get the zeal to engross them in a positive manner. The details are as follows:

1) Day 1 : Schedule : 25th June 2020 at 7:00 pm to 8:00 pm .

Topic: Creating opportunities in the face of adversity.

Speaker: Mr. Pankaj Srivastava

Profile: Mr. Pankaj Srivastava is working as The CEO of PracticalSpeak, California, USA. He launched one of the world's first email marketing programs to build and nurture online customers. He built the world's first "brick and click" loyalty program. He helped scale a sub $100 Million business to over $600 Million in 5 years. He helped build one of the first Software subscription businesses and write the rule-book for subscription renewals. He turned around a failing tech business and developed it into a multi-million-dollar operation with profits.

Highlights of the talk: Speaker addressed the adversity of the time and advised to focus on the opportunities which are creating due to this situation. He narrated his own story to establish some innovative ideas in USA to develop from very small level to a very large scale. Some of the scientific and managerial tools have been discussed by him to create opportunities.

2) Day 2 : Schedule : 2nd July 2020 at 7:00 pm to 8:00 pm .

Topic : Technology of Sustainability : Potential of Technology in shaping the World.
Speaker : Ms. Shweta Srivastava
Profile: Ms. Shweta Srivastava is an experienced Director with a demonstrated history of working in the Telecom industry. She is skilled in Negotiation, Team Management, Project Management, finance & accounting, treasury management and Microsoft Office. She has emerged as a strong professional with a Master's Degree from Delhi University. She is also the Chief operating officer and founding Director of Telenoetica, Lagos, Nigeria.
High lights of the Talk: Speaker discussed the concept and importance of sustainability in the technological world. She is an environmentalist & technocrat who is serving her country with multiple ideas of technical sustainability and got huge success in its implementation. She shared her views and experiences on this topic and suggested the young engineers to take care of sustainability in the upcoming up gradation of Technology.

3) Day 3 : Schedule : 9th July 2020 at 7:00 pm to 8:00 pm.

Topic : Challenges of Cyber world – Relevance of Emerging Technologies.
Speaker : Mr. Avneesh Vats
Profile : He is an experienced and visionary team leader in IT with over 16 years of experience in Information Technological development , Management & Business, IT alignment and leading implementation. He is currently working as the AGM (IT) at Energy Efficiencies Services Ltd. (Govt. of India) New Delhi, India.
Highlights of the talk: Speaker explained briefly about all types of cyber challenges worldwide to the young budding engineers, faculty members and technocrats. He also discussed the future of cyber world and the requirements of the technology which will be included in every field of life and everything in the world will be connected with this. He also suggested the pros and cons, boons and banes which must be taken into account when using such Technologies.

4) Day 4 : Schedule: 16th July 2020 at 7:00 pm to 8:00 pm

Topic : Design Thinking in Engineering and Technology.
Speaker : Mr. Indresh Singh Saluja

Profile : Mr. Indresh Singh Saluja is Chief officer Property Operations, Acorn Holdings Kenya, Nairobi. Highlights of the talk: Explore the empathy, create the requirement and implement it by design thinking were the key ideas of his talk. Every crisis is an opportunity to assess and innovate for a better tomorrow. As organizations and businesses start to think of opening, there is a clear need to think differently. Entrepreneurs need to re assess their business models again, and CEOs and functional heads need to ask the pertinent question "What will be the new normal?" The new normal will also provide opportunities for new businesses, new products, new processes, new systems, and new people capabilities and strategies. As entrepreneurs, business leaders and working professionals, we need to focus on Innovation to drive our business models and ways of working? Businesses which are designed to continuously evolve to fulfil the implied needs of their customers will overcome any crisis. This talk was to demystify and introduce 'Design Thinking' for the new normal, and provide practical ways to implement the tools of Design Thinking in your business, function or daily life.

5) Day 5 : Schedule : 23rd July 2020 at 7:00 pm to 8:00 pm.

Topic : New Ideas and Innovations in the technology and Use of IOT in Telecommunications.
Speaker :. Mr. Abhishek Srivastava
Profile : Mr Abhishek Srivastava is currently the Managing Director and CEO of Telenoetica, Lagos, Nigeria- A Telecom company working within the Telecom and Energy domain across more than 15 countries.
Brief Report:
The Inaugural ceremony was held on 25th July 2020 in the gracious presence of Prof. Vinay Kumar Pathak, Vice Chancellor, AKTU, Lucknow. In this International webinar talk series, we got more than 2000 registrations across the world which includes Rwanda, Indonesia, Kingdom of Saudi Arabia, Kuwait, Nigeria, Malaysia, Sultanate of Oman, South Africa, Iraq etc. more than 15 countries. We used zoom platform along with YouTube and Facebook live streaming for publicizing it and giving the benefit to maximum number of engineering and technical persons. In every talk of this International webinar talk series We got huge responses more than 1000 participants with a positive and applauding feedback along with a request to organize such international webinar talk series in future also.The Closing ceremony/Valedictory program of this talk series will be held on 23rd July 2020 with the small and concluding talk of Mr. Abhishek Shrivastava , MD and CEO of Telenoetica, Lagos , Nigeria in the presence of all the speakers of this series. We have requested all the speakers of the series to speak their concluding remarks during closing ceremony.

SPIU
UTTAR PRADESH

RAJ KUMAR GOEL INSTITUTE OF TECHNOLOGY

Jointly Organized by

State Project Implementation Unit-Uttar Pradesh

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME-III

(A WORLD BANK ASSISTED PROJECT UNDER MINSTRY OF HRD, GOVT. OF INDIA)

Invites

Students, Faculties & Industry Technocrats

for

International Webinar Talk Series

Closing ceremony on 23rd July 2020, 7pm onwards

Chief Guest

Prof. S.K. KAK JI
Founder, Vice Chancellor
Mahamaya Technical University
Noida, Uttar Pradesh, India

SPEAKERS

PANKAJ SRIVASTAVA
COO &CMO,
FigLeaf App,
San Francisco Bay Area
[25th June, 2020]

SHWETA SRIVASTAVA
Director &COO,
Telenoetica,
Lagos, Nigeria
[2nd July, 2020]

AVNISH VATS
AGM-IT
E.E.S.L.,Govt. of India,
New Delhi
[9th July, 2020]

INDRESH SINGH SALUJA
Chief Officer
Property Operations,
Acorn Holdings Kenya
[16th July, 2020]

ABHISHEK SRIVASTAVA
MD & CEO,
Telenoetica,
Lagos,Nigeria
[23rd July, 2020]

powered by Telenoetica ...where intellect drives excellence

Dr. Pavan Kumar Shukla
Professor,
ECE Department, RKGIT

Dr. Mahavir Singh Naruka
Nodal Officer-Academic,
SPIU-UP

Dr. R. K. Yadav
Professor and Head,,
ECE Department, RKGIT

Prof. (Dr.) D.R. Somashekar
Director,
RKGIT, Gzb.

Registration link: forms.gle/9AXAESNUyEtE67V79

इंजीनियरिंग के छात्रों के लिए वेबीनार

गाजियाबाद,28 जून (नवोदय टाइम्स): आरकेजी तकनीकी संस्थान ने छात्रों, शिक्षकोंएवं देश-विदेश के तमाम इंजीनियरिंग क्षेत्र से जुड़े लोगों के लिए अंतरराष्ट्रीय वेबीनार श्रृंखला का आयोजन किया। श्रृंखला का शुभारंभ डॉ एपीजे अब्दुल कलाम टेक्निकल यूनिवर्सिटी के कुलपति प्रो विनय पाठक, आरकेजी ग्रुप के चेयरमैन दिनेश

गोयल और यूपी स्टेट प्रोजेक्ट इंप्लीमेंटेशन कमेटी के कार्यकारी अधिकारी डॉ अनिल कुमार के द्वारा किया गया। आयोजन के मुख्य वक्ता अमेरिका से पंकज श्रीवास्तव ने पूरी दुनिया में होने वाले तकनीकी बदलावों एवं कोविड-19 की वजह से आने वाले समय में आने वाले मौकों पर अपना मत रखा। इस आयोजन में डॉ लक्ष्मण प्रसाद, डॉ.डीआर सोमशेखर, अभिषेक श्रीवास्तव व डॉ.महावीर सिंह नरूका आदि उपस्थित रहे।

आरकेजेआईटी में अंतर्राष्ट्रीय वेबिनार का आयोजन

गाजियाबाद। आरकेजीआईटी में अंतर्राष्ट्रीय वेबिनार श्रंखला में टॉक का आयोजन हुआ। वक्ताओं ने भावी इंजीनियरिंग को ऐसी टेक्नालॉजी बनाने के लिए प्रेरित किया जिससे प्रकृति को कोई नुकसान न पहुंचे।

वेबिनार में टेलेनो एटिका कंपनी की डायरेक्टर श्वेता श्रीवास्वत ने टेक्नोलॉजी ऑफ सस्टेनेबिलिटी के विषय पर अपना व्याख्यान दिया। उन्होंने भावी इंजीनियर्स को ऐसी टेक्नोलॉजी विकसित करने के लिए प्रेरित किया जिससे प्रकृति को कोई नुकसान न पहुंचे। मुख्य अतिथि दिल्ली टेक्नोलॉजी यूनिवर्सिटी के प्रोफेसर डॉ.राजीव कपूर ने प्रतिभागियों को बदलते दौर में आ रहे तकनीकी बदलाव के विषय में जानकारी दी। इस टॉक में करीब देश-विदेश से एक हजार से अधिक छात्र-छात्राओं और शिक्षकों ने प्रतिभाग किया। इलेक्ट्रोनिक्स एंड कम्युनिकेशन डिपार्टमेंट के विभागध्यक्ष डॉ.आर के यादव ने सभी का आभार व्यक्त किया। कन्वीनर डॉ.पवन कुमार शुक्ला और संचालन कुणाल लाला ने किया। संस्था के डायरेक्टर डॉ.डीआर सोमशंकर, वाइस चेयरमैन अक्षत गोयल ने सभी का आभार जताया।

आरकेजीआईटी की टॉक सीरीज़ में साइबर वर्ल्ड पर हुई चर्चा

युग करवट संवाददाता

गाजियाबाद। आरकेजीआईटी में चल रहे अंतर्राष्ट्रीय वेबीनार टॉक सीरीज़ में चैलेंजस ऑफ साइबर वर्ल्ड पर चर्चा हुई।

एनर्जी एफिशिएंसी सर्विसेज लिमिटेड के डायरेक्टर अवनीश वत्स ने चैलेंजेस ऑफ साइबर वर्ल्ड विषय पर विस्तार से जानकारी दी। उन्होंने भावी इंजीनियर्स को रेलेवंश ऑफ इमर्जिंग टेक्नोलॉजी की भी जानकारी प्रदान की। अन्य वक्ताओं ने भी भावी इंजीनियर्स को प्रोत्साहन देते हुए साइबर क्षेत्र में अपने विचार रखे। इस टॉक में विभिन्न देशों के नौ सौ से अधिक छात्रों ने हिस्सा लिया। यह टॉक सीरीज़ एसपीआईयू कार्यकारी अधिकारी डॉ.अनिल कुमार और नोडल अधिकारी डॉ.महावीर सिंह नरूका के सहयोग से की गई। संस्था के डायरेक्टर डॉ.डी.आर सोमशेखर ने प्रतिभागियों को प्रोत्साहित किया। इलेक्ट्रॉनिक्स एंड कम्युनिकेशन विभाग के अध्यक्ष डॉ.आरके यादव ने सभी का आभार व्यक्त किया। कन्वीनर डॉ.पवन कुमार शुक्ला व संचालन कुणाल लाला ने किया। अंत में कार्यक्रम की सफलता के लिए संस्था के वाइस चेयरमैन अक्षत गोयल ने सभी को बधाई दीं।

आरकेजीआईटी में अंतराष्ट्रीय वेबिनार श्रंखला की चतुर्थ टॉक का आयोजन संपन्न

प्रलयंकर संवाददाता
गाजियाबाद।

आरकेजीआईटी में अंतराष्ट्रीय वेबिनार टॉक सीरीज का आयोजन किया जा रहा है। इसमें तकनीकी क्षेत्र के दिग्गज और तमाम मल्टीनेशनल कम्पनीज के बड़े अधिकारी, देश- विदेश के भावी इंजीनियरस के लिए प्रोत्साहन एवं मार्गदर्शन वार्ता करते हैं। दिनांक 25 जून से प्रत्येक गुरुवार शाम 7 बजे से 8 बजे तक इस टॉक का आयोजन किया जा रहा है।

16 जुलाई को संपन्न हुई इस टॉक में एकोर्न होल्डिंग, केन्या के चीफ अफसर प्रॉपर्टी ऑपरेशन्स इंद्रेश सिंह सलूजा ने इनोवेशन इन इंजीनियरिंग एंड टेक्नोलॉजी के विषय पर अपना व्याख्यान दिया। इस विषय पर बोलते हुए उन्होंने भावी इंजीनियरस को इनोवेशन करने के गुर सिखाये।

इस टॉक में देश विदेश के 850 से अधिक छात्र - छात्राओं और अध्यापकों ने हिस्सा लिया।

यह टॉक सीरीज एसपीआइयू कार्यकारी अधिकारी डॉ अनिल कुमार और नोडल अधिकारी डॉ.महावीर सिंह नरूका के सहयोग से आयोजित की जा रही है। कार्यक्रम में संस्था के वाईस चेयरमैन अक्षत गोयल, डायरेक्टर डॉ डॉ.आर सोमशेखर ने प्रतिभागियों को प्रोत्साहित किया। इलेक्ट्रॉनिक्स एंड कम्युनिकेशन डिपार्टमेंट के विभागाध्यक्ष डॉ आर के यादव ने सभी का आभार व्यक्त किया। कार्यक्रम के कन्वीनर रहे डॉक्टर पवन कुमार शुकला और संचालन कुणाल लाला ने किया।

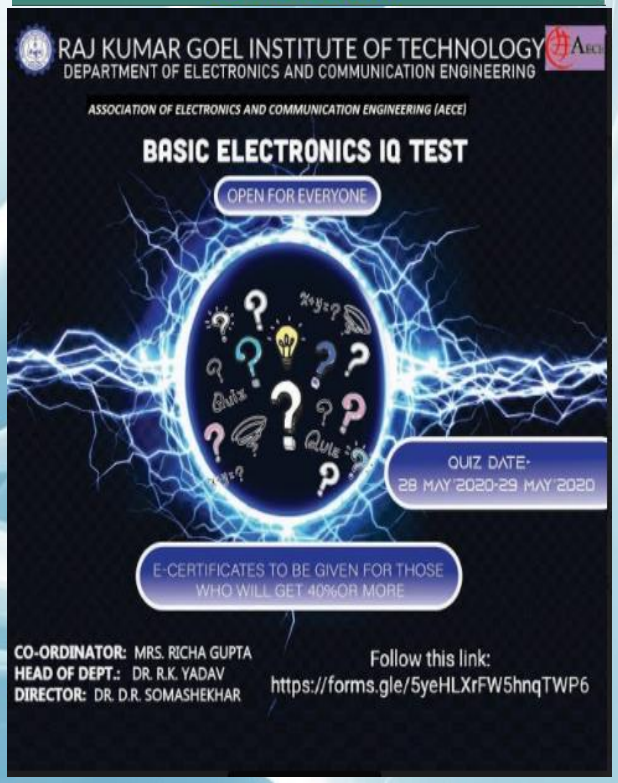
संस्था के डीन सेकंड शिफ्ट डॉ. पुनीत चंद्र श्रीवास्तव ने कार्यक्रम की सफलता के लिए ने सभी को बधाइयां दी।

WEBINARS/ OTHER ONLINE EVENTS CONDUCTED BY THE DEPARTMENT

S.No.	Event /Activity	Date	Resource person/ Event coordinator
1	Webinar on Machine Learning with MATLAB Https://www.youtube.com/playlist?List=pl-cox7v-ujrgrmflehlo4viwzdbb7tgkm	05th May 2020	Mr. Akhilesh Kumar Assistant Manager Application Engineer Designtech Systems Pvt. Ltd.
2	Workshop on Virtual lab Https://youtu.be/8pxw_boyivg	06th May 2020	Prof. Ranjan Bose , IIT, DELHI
3	WAC Webinar on Internet of Things Https://www.youtube.com/watch?V=-ykm8cfhsfo	09th May 2020	Mr.Rohit & Mr. Saksham Madan
4	Webinar to Fight Covid -19 using Robotics & iot	23th May 2020	Mr. Ajay Kumar Godara , Founder & Ceo Enovate Skill
5	Webinar on VLSI Technologies Https://drive.google.com/file/d/1tjalgntayrql_giejxtqn9j2owrhd2zd/view?Usp=sharing	28th May 2020	Mr. Vaibhav Mishra Pine.Training.Academy

6	Workshop on Machine Learning in association with Cetpa Infotech. Https://transcripts.gotomeeting.com/#/s/8d524237ef39f58a8f59100ce0f76510a5ce922fafdc73f3620de43426c94b52	13th June 2020	Mr. Rahul Pathak Cetpa Infotech
7	Career Options and Opportunities for B.E/M.E Electronics/E&TC Graduates Https://drive.google.com/drive/u/1/folders/0b8ju0kkgta07fk1qndbtmnv2nnpdn2hjbmi4owd3mmv0rxa1dmfdrxhyywv0v1vvx29wckk	14th June 2020	Mr. Renjith C. V. Philips India Ltd.
8	International Webinar talk on Creating Opportunities in the Face of Adversities	25th June 2020	Mr. Pankaj Srivastava, Ceo Of Practicalspeak, California, USA.
9	International Webinar talk on Recent Trends in Telecommunications and Association with iot	02nd July 2020	Ms. Shweta Srivastava, Coo And Founding Director Of Telenoetica.

10	Online quiz on Basic Electronics IQ Test	28th -29th May 2020	Ms. Richa Gupta



FACULTY ACHIEVEMENTS

1. **Mr. Deepak Kumar** attended 5 Days FDP on "**Research Methodology: Tools & Techniques**" organized by **IILM College of Engineering and Technology, Knowledge Park - II, Greater Noida,** from 18th – 22nd May, 2020.

2. **Mr. Sandeep Bhatia** attended five days **Online Faculty Development Programme on Internet of Things (ofdpiot-20) from May 7-11, 2020** Organized by Department of Electronics and Communication Engineering National Institute of Technology, Jamshedpur in collaboration with **AICTE Training And Learning (ATAL) Academy, Kolkata.**

3. **Mr. Sandeep Bhatia** attended a six days Faculty Development Programme on **"Computer and Communication Networks''** from **May 21-27, 2020** Organized by Sri Sai Ram Institute of Technology West Tembaram Chennai.

4. **Mr. Sandeep Bhatia** attended two days **"Virtually International Workshop on Education 4.0: Transformation of learning environment"** organized by the Rajkiya Engineering College Banda in collaboration with Consilio intelligence Research lab. Noida during **May 29-30 2020.**

5. **Hashmat Usmani** attended a 5 day (18th may 2020 to 22nd may 2020.) Online FDP(training) on Python 3.4.3 conducted by IIT Bombay spoken Tutorials and funded by the National Mission on Education through ICT, MHRD, Govt. Of India.

6. **Mr. Anil Verma** attended a 5 days- STTP on IOT application and IOT security aspects at ALTTC Ghaziabad from 9th-13th Dec-2019.

7. **Mr. Anil Verma** attended a 5 days -FDP on OBE & Accreditation organized by iilm college of engineering & Technology. From 25th-29th may, 2020 (online).

8. **Mr. Anil Verma** attended a one week -FDP On **"Engineering Education & the Industry: A Post COVID-19 Perspective** By RGIT, Mumbai from 01 june to 5 june, 2020 (online).

9. **Anamika Gupta** attended a 5 day(18th may 2020 to 22nd may 2020.) Online FDP(training) on Python 3.4.3 conducted by IIT Bombay spoken Tutorials and funded by the National Mission on Education through ICT, MHRD, Govt. Of India.

10. **Dr. R. K. Yadav** attended FDP for 5 days on **"Role of Engineer in Uplifting the Industry Post COVID -19 Lock Down in India** " from 11-15 May 2020. Conducted by Department of Mechanical Engineering, Sandip Foundation's, Sandip Institute of Engineering & Management, Nashik-Day Global E-Symposium through online mode on "Global Pandemic Outbreak: Role of Technology & Automation" organized from 1st June,2020 – 5th June 2020 by Department of Computer Science and Engineering, JSS Academy of Technical Education, Noida.

11. **Dr. R. K. Yadav** attended FDP for 3 days on **"Preparing for NBA Accreditation with a Case Study of Course and Program Outcomes Attainment"** in session 1 i.e. From 28th to 30th May 2020. Conducted by AISSMS's Institute of Information Technology (IOIT), Pune and Association of Managements of Un-aided Engineering Colleges, Maharashtra.

12. **Dr. Himani Mittal** attended F.D.P. 5-days Online Faculty Development Program on Artificial Intelligence from 22nd to 26th May 2020 organised by the Department of Computer Engineering in collaboration with National Youth Council of India and Brainovision Solutions India Pvt.Ltd.

13. **Dr. Himani Mittal** attended 3 Days Online FDP on "Preparing for NBA Accreditation with a Case Study of Course and Program Outcomes Attainment" during 28th May to 30th May 2020 jointly organised by IQAC of AISSMS IOIT, Pune and Association of Managements of Un-aided Engineering Colleges (Mah.)

14. **Dr. Himani Mittal** attended a 5 days online Workshop on Game Development and Augmented Reality during 18th May to 22nd May by Misplaced Minds, Hyderabad, Telangana.

15. **Ms. Farah Naz** attended a 5 Ms. Farah Naz attended a One Week Faculty Development Programme (FDP) on **"Computational Tools on Engineering & Research"**through online mode during 1st-6th June,2020. Organised by RR Group of Institutions, Lucknow.

16. **Mr. Rajneesh** attended a **"5-days Online MIET-QLP-FDP"** on **"LATEX Programming"** organized by Department of Information Technology, MIET, Meerut, from 18th May to 22rd May, 2020.

17. **Mr. Rajneesh** attended One Week Faculty Development Programme on **"Computational Tools on Engineering & Research: Opportunities and Challenges"** organized by R.R. Institute of Modern Technology, Lucknow, in the duration 1st-6th June,2020.

18. **Mr. Rajneesh** attended a **"5-days Online National Faculty Development Programme"** on "Applications of Machine Learning and Deep Learning" organized by Department of Computer Science and Engineering, Raj Kumar Goel Institute of Technology, Ghaziabad, U.P. India, from 24th June to 28th June, 2020.

19. **Mr. Rajneesh** attended a **"One Week Faculty Development Programme" on "Exposure & Rejuvenation of Technologies in changed Era of the World"** organized by Department of Electronics & Communication Engineering, Raj Kumar Goel Institute of Technology, Ghaziabad, U.P. India, from 24th June to 28th June, 2020.

20. **Mr. Rajneesh** attended a **"One Week Online International Faculty Development Programme"** on **"Recent Trends in Computer Science & IT"** organized by Department of Computer Science and Engineering, Raj Kumar Goel Institute of Technology, Ghaziabad, U.P. India, from 13th July to 17th July, 2020.

21. **Mr. Kunal Lala** attended 5 days Online Faculty Development Programme on "**Big Data Engineering" from 1st- 5th June, 2020** organized by **Kings Engineering College , Chennai.**

22. **Mr. Kunal Lala** attended **5 days** Online Faculty Development Programme on**"Impact of Data in Information Technology and its Applications" from 28th May- 1st June, 2020** organized by **Immaculate College for Women , Tamil Nadu".**

23. **Dr. Neha Goel,** attended 6-days FDP on "**Computational tools on engineering and research : opportunities and challenges"**,organized from **01-06 June 2020 by R.R. institute of Modern technology, lucknow.**

24. **. Rakesh Kumar ,** attended 5-days FDP on "**Recent Innovations and Technologies in Electric Vehicles "**,organized from **08-012 June 2020 by GATES institute of technology,Anantapuramu,Andhra Pradesh.**

25. **Ms. ANAMIKA GUPTA** attended Five Days online Faculty Development Program on the topic " Neural Network and Deep learning" from 1 June 2020 to 5 June 2020 organized by school of computing and information technology,Reva University ,Bengaluru.(Timing 10:00am to 1:30pm)

26. **Anamika Gupta** attended a One Week Faculty Development Programme (FDP) on "Computational Tools on Engineering & Research"through online mode during 1st-6th June,2020. Organised by RR Group of Institutions, Lucknow.

27. **Anamika Gupta** attended a Two days Faculty Development Programme (FDP) on "Artificial Intelligence in Healthcare "through online mode during 10th-11th June,2020. Organised by the Department of Electronics and Telecommunication,R.C. Patel Institute of Technology, Shirpur.

28. **Dr. Neha Goel,** attended 5-Day Online STTP on "Internet of Things(iot) and its Applications in Industry", jointly organised from 8-12 june 2020 by Department of Instrumentation Engineering, RAIT, Nerul, Navi Mumbai and B & R Industrial Automation Pvt. Ltd, Pune

29. **Ms. Renu Rani** attended Five Days online Faculty Development Program on the topic " Engineering Education & the Industry :A Post COVID-19 Perspective" from 1 June 2020 to 5 June 2020 organized by Rajiv Gandhi Institute of Technology, Mumbai in association with Indian Institution of Industrial Engineering.

30. **Ms. Renu Rani** attended one week online Faculty Development Program on the topic " COMPUTATIONAL TOOLS ON ENGINEERING AND RESEARCH :OPPORTUNITIES AND CHALLANGES" from 1 June 2020 to 6 June 2020 organized by RR Group of Institute of modern Technology,Lucknow.

31. **Mr Anuj Kumar** attended Five Days online Faculty Development Program on the topic " Engineering Education & the Industry :A Post COVID-19 Perspective" from 1 June 2020 to 5 June 2020 organized by Rajiv Gandhi Institute of Technology, Mumbai in association with Indian Institution of Industrial Engineering.

32. **Mr Anuj Kumar** attended one week online Faculty Development Program on the topic " COMPUTATIONAL TOOLS ON ENGINEERING AND RESEARCH :OPPORTUNITIES AND CHALLANGES" from 1 June 2020 to 6 June 2020 organized by RR Group of Institute of modern Technology,Lucknow.

33. **Mr Anuj Kumar** attended Two days online Faculty Development Program on the topic "Artificial Intelligence in Healthcare" organized by Department of Electronics and Telecommunication, RC. Patel Institute of Technology, Shirpur on 10 and 11th June 2020

34. **Ms. Hashmat Usmani** attended Five Days online Faculty Development Program on the topic " Engineering Education & the Industry :A Post COVID-19 Perspective" from 1 June 2020 to 5 June 2020 organized by Rajiv Gandhi Institute of Technology, Mumbai in association with Indian Institution of Industrial Engineering.

35. **Ms. Riju Jindal** attended Five Days online Faculty Development Program on the topic " Engineering Education & the Industry :A Post COVID-19 Perspective" from 1 June 2020 to 5 June 2020 organized by Rajiv Gandhi Institute of Technology, Mumbai in association with Indian Institution of Industrial Engineering.

36. **Ms. Riju Jindal** attended one week Faculty Development Program on the topic " Python 3.4.3" from 1 June 2020 to 5 June 2020 in association with Spoken Tutorial, IIT Bombay organised by Department of Computer Engineering, Anantrao Pawar College of Engineering & Research,Pune.

37. **Ms. Riju Jindal** has successfully participated in Five Days Online National Level FDP On "PCB Design by Department of ECE, VVIET, Mysuru in association with Sienna ECAD Technologies and ESSCI from 29th June 2020 to 03rd July 2020.

38. **Ms. Riju Jindal** has successfully participated in One Week Faculty Development Programme on "Exposure & Rejuvenation of Technologies in changed Era of the World" from July 6, 2020 to July 10, 2020 organized by Department of Electronics & Communication Engineering, Raj Kumar Goel Institute of Technology, Ghaziabad, U.P. India.

39. Richa Gupta, has actively participated in one day Faculty Development Program on **"Out Come based Education System"** organized by vmedulife software services on 4th june 2020.

40. Richa Gupta, has actively participated in **one day** Faculty Development Program on **"AWS Cloud Computing Services"** organized by Department of Computer Science & Engineering JOGINPALLY B.R Engineering College (JBREC) on 3rd June 2020.

41. Richa Gupta, has actively participated in **one day** Faculty Development Program on **"Role of Technology in a post COVID world"** Organized by Department of Electronics & Communication Engineering RMK Engineering College on 12th june 2020.

42. Richa Gupta, has actively participated in **Two days** Faculty Development Program on **"Artificial Intellegence in Health Care"** conducted by Dr. Anand Nayar Organized by Department of Electronics & Communication Engineering R.C Patel Institute of Technology Shirpur ob 10th & 11th june 2020.

43. Richa Gupta, has actively participated in **Three days** Faculty Development Program on **"Recent Trends in Computer Science and Technology"** from 4th to 6th June, 2020 organized by Department of Computer Science Engineering, KLE College of Engineering & Technology, Chikodi, Karnataka.

44. Richa Gupta, has actively participated in **One Week** Faculty Development Program on **"Neural Network and Deep Learning using Python"** held from 1st to 5th june 2020 organized by school of computing and Information Technnology, Reva University Bengaluru.

45. Richa Gupta, has actively participated in **One Week** Faculty Development Program on "**Engineering Education & the Industry: A Post COVID-19 Perspective"** held during 1st to 5th June, 2020 organized Rajeev Gandhi Institute of Technology, Mumbai in association with Indian Institute of Industrial Engineering.

46. Richa Gupta, has actively participated in **One Week** Faculty Development Program on "**Recent Innovations and technologies in Electric Vehicles"** held during 8th to 12th June, 2020 organized by Department of Electrical and Electronics Engineering Gates Institute of Technology, Andhra Pradesh.

47. Richa Gupta, has actively participated in **One Week** Faculty Development Program on "**Recent trends in Electronics & Communication Engineering"** held during 8th to 12th June, 2020 organized by Chennai Institute of Technology, Chennai.

48. Richa Gupta, has actively participated in **One Week** Faculty Development Program on "**Computational Tools on Engineering & Research: Opportunities & Challenges"** held during 1st to 6th June, 2020 organized by R.R Institute of Modern Technology, Lucknow

49. Dr. Himani Mittal attended one week F.D.P on Operation management in the era of during 30th May to 4th June by MIT, Meerut.

50. Dr. Himani Mittal has participated the One Week Online Faculty Development Program on "Engineering Education & the Industry: A Post COVID-19 Perspective" held during 1 June, 2020 to 5 June, 2020.

51. Mr. Rakesh Kumar attended five days online Faculty Development Program on "Artificial Intelligence and Data Science" from 10th June to 14th June,2020 organized by the department of Information Technology, Oriental Institute of Science and Technology, Bhopal .

52. Ms. Hashmat Usmani attended Seven Days online Faculty Development Program on the topic Emerging Technologies: Research Issues and Challenges" Organised By "Seth Vishambhar Nath Institute of Engineering & Technology, Barabanki" from 10th June to 16th June, 2020. (Timing: 10:00am to 1:00pm)

53. **Ms. Hashmat Usmani** attended Five Days online Faculty Development Program on the topic " Neural Network and Deep learning" from 1 June 2020 to 5 June 2020 organized by school of computing and information technology,Reva University ,Bengaluru.(Timing 10:00am to 1:30pm)

54. **Ms. Hashmat Usmani** attended Five Days online Faculty Development Program on the topic Artificial Intelligence and Data Science from 10th-14th June'2020(Timing:4:00pm - 5:30pm) organized by the Department of Information Technology Oriental Institute of Science & Technology, Bhopal.

55. **Ms. Hashmat Usmani** completed One week Faculty Development Programme on PHP & mysql from 8th-12th June organized by Department of Information Technology, Sridevi Women's Engineering College, Hyderabad in association with **spoken tutorial IIT Bombay.**

56. **Ms. Anamika Gupta** attended Five Days online Faculty Development Program on the topic " Engineering Education & the Industry :A Post COVID-19 Perspective" from 1 June 2020 to 5 June 2020 organized by Rajiv Gandhi Institute of Technology, Mumbai in association with Indian Institution of Industrial Engineering.

57. **Ms. Anamika Gupta** attended Seven Days online Faculty Development Program on the topic Emerging Technologies: Research Issues and Challenges" Organised By "Seth Vishambhar Nath Institute of Engineering & Technology, Barabanki" from 10th June to 16th June, 2020. (Timing: 10:00am to 1:00pm)

58. **Ms. Anamika Gupta** attended Five Days online Faculty Development Program on the topic Artificial Intelligence and Data Science from 10th-14th June'2020(Timing:4:00pm - 5:30pm) organized by the Department of Information Technology Oriental Institute of Science & Technology, Bhopal.

59. **Ms. Anamika Gupta** completed One week Faculty Development Programme on PHP & mysql from 8th-12th June organized by Department of Information Technology, Sridevi Women's Engineering College, Hyderabad in association with **spoken tutorial IIT Bombay.**

60. **Ms. Anamika Gupta** attended Five Days online Faculty Development Program on "Applications of Machine Learning and Deep Learning" held from 24th June to 28th June, 2020 at Raj Kumar Goel Institute of Technology, Ghaziabad organized by the Department of Computer Science and Engineering.

61. **Ms. Farah Naz** has actively participated in a Two Day Online National level Faculty Development Program on " Virtual Physics Labs" organized by Malla Reddy Institute of Engineering and Technology on 4th & 5th June 2020.

62. **Mr. Rakesh Kumar** attended Four days online Faculty Development Program on "Evolution of RF Technology-Role of Academia" from 22th June to 25th June,2020 organized by the department of Electrical and Electronics Engineering , JSS academy of Technical Education, Noida.

63. **Mr. Rakesh Kumar** attended Seven days online Faculty Development Program on "Future Materials: Nanocomposites " from 15th June to 21th June,2020 organized by the department of Mechanical Engineering , Bharti Vidyapeeth College of Engineering, Pune.

64. **Mr. Rakesh Kumar** attended Two days online Faculty Development Program on "Recent Technologies and Trends in Computer Science and Information Technology " from 04th July to 05th July,2020 organized by the department of Computer Science and Information Technology, Oriental Institute of Science and Technology, Bhopal.

65. **Ms. Farah Naz** has successfully attended "One week FDP on Computational Tools in Engineering & Research: Opportunities & Challenges" organized by RR Group of Institutions, Lucknow in the duration 1-6 June,2020

66. **Ms. Farah Naz** has participated in FIVE DAYS NATIONAL LEVEL Online Faculty Development Program on PERL SCRIPTING organized by the Department of Computer Science and Engineering, in association with Spoken Tutorial IIT-Bombay from 10th June to 14th June 2020.

67. **Ms. Farah Naz** has successfully attended in the 5 Days online Faculty development program on "Artificial Intelligence & Data Science" organised by Department of Information Technology, Oriental Institute of Science & Technology, Bhopal MP from 10 June- 14 June,2020

68. **Ms. Farah Naz** has participated in Two days Faculty Development Program on "Artificial Intelligence in Healthcare" conducted by Dr. Anand Nayyar organized by Department of Electronics and Telecommunication Engineering R. C. Patel Institute of Technology, Shirpur, Dist-Dhule(MS) on 10th and 11th June, 2020.

69. **Ms. Farah Naz** has successfully completed One Week Faculty Development Programme on PHP & mysql from 08.06.2020 to 12.06.2020 organized by Department of Information

Technology, Sridevi Women's Engineering College, Hyderabad in association with Spoken Tutorial IIT-Bombay.

70. **Ms. Farah Naz** has participated in Two days online Faculty Development Programme on "Cybersecurity and its Practices ", organised by Department of Computer Science and Engineering,St.Joseph's College of Engineering from 20th June 2020 to 21st June 2020. The session was handled by Mr Krishnaprakash Thangadurai, IAM Technical Architect,Cognizant, Chennai & Ms Sharada Murthy, Senior Product Marketing Specialist, Zoho Corporation.

71. **Ms. Farah Naz has** attend the online FDP on "Role of Technology in a Post Covid World", by Mr.Ratnakar Rao, B.E., M.Tech.,MBA., Senior Director, Engineering Samsung R&D Institute, Bengaluru. Organized by the Department of Electronics and Communication Engineering, R.M.K. ENGINEERING COLLEGE on 12 June,2020

72. **Ms. Farah Naz** has participated and completed One Week Faculty Development Programme on 'Future Materials: Nanocomposites' from 15th June, 2020 to 21st June, 2020 organized by Department of Mechanical Engineering, BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY), COLLEGE OF ENGINEERING, PUNE

73. **Ms. Farah Naz** has successfully participated in A National Level 3 Day Virtual faculty development program on "Moving to Master Science in Technology (MMST:2020)", Organized by Freshmen Engineering from 18th -20th June 2020**.**

74. **Ms. Farah Naz** has participated in One Week Online Faculty Development Program on Recent Advances in Electrical Engineering -from 22nd to 27th June - 2020 , Organized by the Department of Electrical and Electronics Engineering, Bharat Institute of Engineering and Technology (BIET).

75. **Ms. Farah Naz** has actively participated in FDP on Fuzzy Clustering Techniques and its Applications (27th -29th JUNE 2020) Organized by Committee, Department of Mathematics, St.Mother Theresa Engineering College, Thoothukudi – Tamil Nadu

76. **Ms. Farah Naz** has attended the Five Days Online National Faculty Development Program on "Applications of Machin Learning and Deep Learning" held from 24th June to 28th June, 2020 at Raj Kumar Goel Institute of Technology, Ghaziabad organized by the Department of Computer Science and Engineering.

77. **Ms. Farah Naz** has participated in the FDP on "Active Learning and Advanced Scientific Computing Methods (ALASCM-2020)" conducted by Loyola College between 15-06-2020 and 19-06-2020

78. **Ms. Farah Naz** has participated in Two days FDP on "Developing E-Content for Effective Teaching Learning Process" organized by Department of Computer Science and Engineering, St. Joseph's College of Engineering from 01.07.2020 to 02.07.2020.

79. **Ms. Farah Naz** has successfully participated in the National Level Faculty Development Program on by Department of ECE, VVIET, Mysuru in association with Sienna ECAD Technologies and ESSCI from Sienna ECAD of Engineering and Technology, Dr. Lokesh C of Vidyavardhaka College of Five Days Online "PCB Design" technologies 29th June 2020 to 03rd July 2020.

80. **Ms. Farah Naz h**as successfully attended the 2 days National Faculty Development Program on "Recent Technologies & Trends in Computer Science & Information Technology" on 4th and 5th Jul 2020, organized by the Department of Information Technology of Oriental Institute of Science & Technology, Bhopal.

81. **Ms. Farah Naz** has successfully participated in the 5 day international online FDP on ADVANCEMENT IN COMMUNICATION ENGINEERING TECHNOLOGIES WITH SIMULATION TOOLS organised by Vishnu Institute of Technology , Bhimavarm , Andhra Pradesh from 1 July to 5 July,2020

82. **Ms. Farah Naz has** participating in the 3-Day Staff Development Programme on "Soft Skills and Cloud Technologies" organized by Dept. Of MCA, MS Ramaiah Institute of Technology, Bengaluru from 29th June 2020 to 1st July 2020.

83. **Ms. Farah Naz** has successfully participated the One Week FDP on " Developing Potentials - Emerging Technologies of Computer Science " organized by the Department of CSE, Vidya Jyothi Institute of Technology, Hyderabad from 1st - 7th July 2020.

84. **Ms. Farah Naz** has attended the 3 Days FDP on "Recent Advances in Material science" organized by Greetings from the Department of Mechanical Engineering, St.Joseph's Institute of Technology from 8-10 July, 2020.

85. **Ms. Farah Naz** has participated and completed Faculty Development Program on" Handgrip between iot and Machine Learning" organized by the Department of ECE& BME held on 06.07.2020 to 07.07.2020 through online pedagogy.

86. **Ms. Farah Naz** has participated in online Faculty Development Program on Nano Science and Technology from 29 June to 7 July, 2020 organised by Satyamaba Institute of science & technology in Association with IIITDM.

87. **Farah Naz** has actively participated in One Week Faculty Development Programme on "Exposure & Rejuvenation of Technologies in changed Era of the World" from July 6, 2020 to July 10, 2020 organized by Department of Electronics & Communication Engineering, Raj Kumar Goel Institute of Technology, Ghaziabad.

88. **Farah Naz** has actively attended the Six Days Online Faculty Development Programme (FDP) on "Nanomaterial Synthesis, Process, Characterization and its Functional Applications" Organized by the Department of Automobile Engineering, HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, Coimbatore. From 6th - 11th July 2020**.**

89. **Ms. Anamika Gupta** has successfully participated in Five Days Online National Level FDP On "PCB Design by Department of ECE, VVIET, Mysuru in association with Sienna ECAD Technologies and ESSCI from 29th June 2020 to 03rd July 2020.

90. **Ms. ANAMIKA GUPTA** has successfully participated in One Week Faculty Development Programme on "Exposure & Rejuvenation of Technologies in changed Era of the World" from July 6, 2020 to July 10, 2020 organized by Department of Electronics & Communication Engineering, Raj Kumar Goel Institute of Technology, Ghaziabad, U.P. India.

91. **Ms. Farah Naz** has participated in one week STTP on "A Practical Approach Towards Engineering for Technical Persons - Technovators 2020" from 07th July 2020 to 13th July 2020 organised by Pimpri Chinchwad Education Trust's Pimpri Chinchwad College of Engineering, Sector No.26, Pradhikaran, Nigdi, Pune

92. **Ms. Farah Naz** has participated in International Faculty Development Program on "World of Cyber Physical Systems and Future Robotics of Industry: Cobotics" conducted by Dr. Anand Nayyar organised by Department of Electronics and Telecommunication Engineering R. C. Patel Institute of Technology, Shirpur, Dist-Dhule(MS) on 11th and 12th July, 2020.

93. **Ms. Farah Naz** has successfully participated the One Week FDP on " Developing Potentials - Emerging Technologies of Computer Science " organized by the Department of CSE, Vidya Jyothi Institute of Technology, Aziz Nagar Gate, C.B. post, Hyderabad from 1st - 7th July 2020.

94. **Ms. Farah Naz** has participated in the One Day Faculty Development Programme/Workshop on "Vulnerabilities Assessment while work from home" on 27th June,2020 organised by Amity Institute of Information Technology (AIIT) in collaboration with Sedulity Solutions and Technologies.

95. **Ms. Farah Naz** has successfully participated in the One Week Online FDP on "Future Nano Electronic Devices & Circuits" during 6-10 July 2020, organized by Department of ECE, MGIT, Hyderabad.

96. **Ms. Farah Naz** has participated in Day 5 FDP Cloud Computing with AWS organizing by Mahaveer Institute of Science & Technology, Hyderabad, Telangana. In collaboration with webtek Labs Pvt Ltd. From 30 June to 4 July,2020.

97. **Ms. Farah Naz** has participated in One day Fdp on "AI Implementation in Robots" organized by Dept. Of IT, Hindustan institute of technology in collaboration with CSI on 15th July, 2020.

98. **Ms Hashmat Usmani** attended Five Days online Faculty Development Program on "Applications of Machine Learning and Deep Learning" held from 24th June to 28th June, 2020 at Raj Kumar Goel Institute of Technology, Ghaziabad organized by the Department of Computer Science and Engineering.

99. **Ms. Farah Naz** has participated in Five day Faculty Development Program on "Sensors & Their Applications" held from 13/07/2020 to 17/07/2020 organised by Department of Electronics & Communication Engineering VEMANA INSTITUTE OF TECHNOLOGY Mahayogi Vemana Road, Koramangala, Bengaluru in association with IEEE Sensors Council, Bangalore Section.

FACULTY/ STUDENT RESEARCH PUBLICATIONS

1. Leena Sharma, Sandeep Bhatia,Vikrant Tiwari, Ujjwal Saxena, Pooja Tiwari publish the paper entitled" Smart Waste Management System using RFID" in International Research Journal of Engineering and Technology (IRJET) vol 7 issue5 May 2020 impact factor 7.529. https://irjet.net/archives/V7/i5/IRJET-V7I592.pdf

2. Rahul Singh, Leena Sharma, Vandana Singh, Vivek KR. Singh published the paper entitled " Automatic Railway track crack detection system" in International Research Journal of Engineering and Technology (IRJET) vol 7 issue5 May 2020 impact factor 7.529. https://irjet.net/archives/V7/i5/IRJET-V7I5319.pdf

3. Prakhar Srivastava, Mr.Kunal Lala, Mr. Sandeep Bhatia, Mayank Rao, Md. Shariq, Prashant Phulera published the paper titled " Room Automation using Arduino Uno and Electronic Sensors" in International Journal of Advanced Research in Electrical, Electronics and Instrumentation (IJAREEIE), Volume 9 , Issue 4, April 2020, Impact Factor :6.932. http://www.ijareeie.com/upload/2020/april/39_Room_NC.PDF

4. Kinjal Sinha, Mr.Kunal Lala, Himanshu Chaudhary, Aditya Chawla, Md. Imran Khan published the paper titled " Soldier Health and Positioning Tracking System Using GPS and GSM MODEM" in International Journal of Research and Analytical Reviews(IJRAR), Volume 7 , Issue 2, May 2020, Impact Factor :5.75 http://ijrar.org/viewfull.php?&p_id=IJRAR19L1444

5. Aftab Aalam, Shivansh Mishra, Satyam Sharma, Richa Gupta published the paper entitled "Study and Development of e commerce Website" in International Research Journal of Engineering and Technology (IRJET) vol 7 issue 5 May 2020, impactfactor7.529. https://www.irjet.net/archives/V7/i5/IRJET-V7I5269.pdf

6. Ashwani Kumar, Gaurav Jaiswal, Mohit kr. Nagar, Anuj Kumar published the paper titled "Embedded Based Milk Adulteration Detection & Live Monitoring Using Internet of Things (IoT) in International Research Journal of Engineering and Technology (IRJET), Vol. 7 issue 5 May 2020. Impact factor 7.529. https://irjet.net/archives/V7/i5/IRJET-V7I5345.pdf

7. Arpit Awasthi , Deepak Kumar , Sandeep Bhatia , Sonali Singh , Apoorv Tyagi , Prasoon Gaur published the paper entitled *"Automatic Vehicle Accident Detection and Messaging System"* in International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE), Volume 9, Issue 4, April 2020 , e-ISSN: 2278 – 8875, p-ISSN: 2320 – 3765 , Impact Factor: 6.392.

8. Sandeep Bhatia, Deepak Kumar, Atul Pundir, Saurav Kumar, Shashank Kumar Mishra, Pankaj Kumar Sharma published the paper entitled *"Reward Based Intelligent Garbage Management System"* in International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE), Volume 9, Issue 4, April 2020 , e-ISSN: 2278 – 8875, p-ISSN: 2320 – 3765 http://ijareeie.com/upload/2020/april/42_REWARD_NC.PDF

9. Mr. Maneesh Kumar Srivastava1 , Sandeep Bhatia2 , Mudit Dwivedi3 , Kritika Pandey4 , Kollur Ragini5 1, 2Asst. Prof., 3, 4, 5Student, Department of Electronics & Communication Engineering, Raj Kumar Goel Institute of Technology, Ghaziabad, Indiapublished the paper entitled *"*Solar based E-Uniform for Soldiers*"* in International Journal for Research in Applied Science & Engineering Technology (IJRASET) ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429 Volume 8 Issue V May 2020- Available at www.ijraset.com

10. Sandeep Bhatia, Sparsh Mathur, Sivesh Narayan Mishra, Divyansh published the paper entitled *"Automatic Street Lighting System using PIR Sensor and Arduino UNO"* in International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE), Volume 9, Issue 4, April 2020 , e-ISSN: 2278 – 8875, p-ISSN: 2320-3765, Impact factor: 6.392. https://www.ijareeie.com/upload/2020/april/37_Automatic.PDF
11. Sandeep Bhatia, Prashant Kumar, Pranjal Sharma, Ravindra Kumar published the paper entitled *"Off Grid Solar System"* in International Research Journal of Engineering and Technology (IRJET), Volume: 07, Issue: 05,May 2020, e-ISSN: 2395-0056, p-ISSN: 2395-0072, Impact factor: 7.529. https://www.irjet.net/archives/V7/i5/IRJET-V7I513.pdf

12. Sandeep Bhatia, Akash Chandel, Sameeksha Singh, Pankaj Kumar Singh, Shobit Rana Bhat published the paper entitled *"Green House Monitoring and Controlling"* in International Research Journal of Engineering and Technology (IRJET), Volume: 07, Issue: 05,May 2020, e-ISSN: 2395-0056, p-ISSN: 2395-0072, Impact factor: 7.529. https://www.irjet.net/archives/V7/i5/IRJET-V7I5280.pdf

13. Sandeep Bhatia, Maneesh Kumar Srivastava, Mudit Dwivedi, Kritika Pandey, Kollur Ragini published the paper entitled *"Solar based E-Uniform for Soldier"* in International Journal for Research in Applied Science & Engineering Technology (IJRASET) ISSN: 2321-9653, IC Value: 45.98, Volume 8, Issue V May 2020, SJ Impact Factor: 7.429. http://ijraset.com/fileserve.php?FID=28405

14. Sandeep Bhatia, Deepak Kumar, Atul Pundir, Saurav Kumar, Shashank Kumar Mishra, Pankaj Kumar Sharma published the paper entitled *"*Reward Based Intelligent Garbage Management System*"* in International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (IJAREEIE), Volume 9, Issue 4, April 2020 , e-ISSN: 2278 – 8875, p-ISSN: 2320 – 3765 , Impact Factor: 6.392.http://ijareeie.com/upload/2020/april/42_REWARD_NC.PDF

15. Aditya Tripathi,Ankit Kr. Maurya,Adarsh Pal,Anamika Gupta published the paper entitled "Smart Drip Irrigation System using IoT with Artificial Sensor" in International Research Journal of Engineering and Technology (IRJET) vol 7 issue 5 May 2020, impactfactor7.529. https://irjet.net/archives/V7/i5/IRJET-V7I5483.pdf

16. Mr. Abhinav Bansal, Aditya Sharma, Anuj Kumar Singh, Khushi Saxena published the paper entitled " Smart Health Monitoring System using IoT " in International Journal for Research in Applied Science and Engineering Technology (IJRASET) vol 5 issue8 May 2020 impact factor 7.429. https://www.ijraset.com/fileserve.php?FID=28389

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18. Arpita Gupta, Abhinav Bansal published the paper entitled " Digital Smart Pen : How it can help in hospitals" in National Conference on "Mechanical and Automation Engineering (MAAE-2020)" held on 7-8 February,2020 at Ajay Kumar Garg Engineering College , Ghaziabad ,(U.P.), India

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26. Anshumn Srivastava, Ashish Gangwar, Pranshu Srivastava, Hashmat Usmani, “ Smart Attendance system Using Face Recognition' International Journal of Scientific and Engineering Research (IJSER), Volume 11, Issue 5 May 2020, ISSN 2229-5518.https://irjet.net/archives/V7/i5/IRJET-V7I5741.pdf

27. Akash Kumar Gupta, Ankit Kumar Jaiswal, Anubhaw Mani Tripathi, Anuj kumar published the paper titled “HEALTH MONITORING SYSTEM with GPS” in International Research Journal of Engineering and Technology (IRJET),Volume: 07 Issue: 05 | May 2020, Imapct Factor: 7.529 https://irjet.net/archives/V7/i5/IRJET-V7I5702.pdf

28. One patent, "a smart cooking device" published by intellectual property Rights, design and trademark, government of India, application number is 202011006976 under the guidance of Dr. Neha Goel on 01/May/2020.

29. Utkarsh Gangwar, Priyanshi Panwar, Kanupriya, **Anil Verma**, "**SELF DRIVE LUGGAGE**", International Research Journal of Engineering and Technology ,Volume: 8, Issue: VI, JUNE 2020 , Impact Factor value: 7.429.

30. **R.K Yadav**, Mehak Singh,Arushi Verma published the paper entitled " **Remote Monitoring System for Cold Storage Warehouse using IOT**" in International Journal for Research in Applied Science and Engineering Technology (IJRASET) vol 5 issue 8 May 2020 impact factor 7.429. https://www.ijraset.com/fileserve.php?FID=29139

31. **Mr.Abhinav Bansal , P**riyanka Yadav, Kamal Chaubey, Vishal Rai published the paper entitled " Smart blind stick" in International Journal for Scientific Research & Development(IJSRD),vol8,issue3,2020 http://ijsrd.com/Article.php?manuscript=IJSRDV8I30655

32. Vishnu Kumaril Pandey, **Dr.Neha Goel**, Shubhanshi Srivastava, Utkarsh Rai. Published the paper entitled, "DIGITAL HEARING AID SYSTEM", in International Journal of Creative Research Thoughts (IJCRT), vol 8 issue 6,June 2020

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37. Hritik Tyagi, Harshit Gupta, Satyam Kasaudhan, **Richa Gupta** published the paper entitled "**Accident Alert System and Vehicle Tracking**" in International Journal for research in Applied Science & Engineering Technology (IJRASET) Vol 8 issue VII, July 2020, Page No. : 1245-1247 DOI : https://doi.org/10.22214/ijraset.2020.30466

STUDENT ACHIEVEMENTS

S.No.	Name of Students	Status	Event /Title	Venue	Date
1	Swarnima Verma	Participated	Nation level online Quiz on Electromagnetic Field	Online	19/7/2020
2	Jay Kumar	Participated	International Webinar Talk Series, MATLAB	Online	09/07/2020
3	Amit Yadav	Participated	Challenges Of Cyber World Relevance Of Emerging Technologies	Online	09/07/2020
4	Satish kumar	Participated	International Webinar organized by ECE department, RKGIT	Online	09/07/2020
5	Suyesh Pandey	Participated	Mean Stack Webinar	Online	08/07/2020
6	Ashutosh Prajapati	Participated	International Webinar Talk	Online	06/07/2020
7	Ayush Pandey	Participated	Hackveda Associated with Python	Hackveda Limited, Noida - Online	18/05/2020 - 30/06/2020
8	Amit Kumar	Participated	Design of Brain Controlled Application	Online	26/06/2020
9	Richa Sharma	Participated	Quiz on "Software Testing and Architecture"	Online	26/06/2020
10	Deepanshi Srivastava	Participated	3 Days Hands-On Experience With Arduino Using Virtual Tool	Online	25/06/2020
11	Sameeksha Singh	Participated	International Webinar Series	Online	25/06/2020
12	Richa Sharma	Participated	National Level Quiz on COVID-19	Online	19/06/2020

13	M.S.Kirtana	Participated	Webinar On Career Options	Online	14/06/2020
14	Ankit Gupta	Participated	Experts Lectures On "Career Options and Opportunities For B. E/M.E"	Online	14/06/2020
15	Richa Sharma	Participated	Quiz of "Three Phase Induction Motor"	Online	14/06/2020
16	Atul Pundir	Participated	National Webinar on "The Impact of Covid-19 on Social Life", Organized by LSSSK Trust, Chitrakoot	Online	14/06/2020
17	Anup Singh	Participated	Course on Introduction to Programming With MATLAB	Vanderbilt University (Online)	13/06/2020
18	Arpita Gupta	Participated	Biometrics	NPTEL (Online)	13/06/2020
19	Riddhi Singh	Participated	Prakartinama	Online	11/06/2020
20	Richa Sharma	Participated	Quiz on "JAVA and J2EE"	Online	09/06/2020
21	Richa Sharma	Participated	State level quiz on "Mobile Application Development"	Online	08/06/2020
22	Richa Sharma	Participated	State level quiz on "Road Transport and safety"	Online	08/06/2020
23	Richa Sharma	Participated	Quiz on "Mathematics"	Online	08/06/2020
24	Richa Sharma	Participated	Quiz on "Electrical DC Machine's"	Online	08/06/2020
25	Shristi Srivastava	Participated	Electrical DC machine quiz	Online	08/06/2020
26	Richa Sharma	Participated	Quiz on "Basic Machine Learning"	Online	08/06/2020
27	Atul Pundir	Participated	"Covid-19 Awareness Campaign" Online Quiz, Organized By Golden Group of Institutions, Gurdaspur	Online	08/06/2020

28	Pushpendra Srivastava	Participated	Core Aurdino Programming and Interfacing	Online	07/06/2020
29	Richa Sharma	Participated	Google Digital Garage course on "The Fundamental of Digital Marketing"	Online	06/06/2020
30	Atul Pundir	Participated	"World Environment Day" Online Quiz ,Organized by BBA(FS) Department, Shree Damodar College of Commerce and Economics, Goa	Online	06/06/2020
31	Megha Agrawal	Participated	Core Arduino Course	Online	05/06/2020
32	Richa Sharma	Participated	Google Digital Unlocked course of "The fundamental of Digital Marketing"	Online	05/06/2020
33	Pratibha Kumari	Participated	YouTube Course	Online	04/06/2020
34	Mansi Singh	Participated	HCL- HACKATHON	Online	03/06/2020
35	AyushPandey	Participated	Course on "Programming Foundations with JAVA Scripts, HTML and CSS	Duke University (Online)	02/06/2020
36	Richa Sharma	Participated	Course on "Moralities Of Everyday Life"	Yale University (Online)	02/06/2020
37	Richa Sharma	Participated	Course on "Programming For Everybody (Getting Started With Python)"	University of Michigan (Online)	01/06/2020
38	Disha Srivastava	Participated	Expressomania	Online	01/06/2020
39	Richa Sharma	Participated	Incredible India Quiz	Online	30/5/2020
40	Prerit Kumar	Participated	Prakartinama	Online	30/5/2020

41	Gaurav Singh	Participated	National level basic electronics IQ TEST	Online	28/5/2020
42	Riddhi Singh	Participated	National level Basic electronics IQ test	Online	27/5/2020
43	Richa Sharma	Participated	National Level Basic IQ Test	Online	27/5/2020
44	Anmol Kukreja	Participated	Course on Programming For Everybody(Getting Started With Python)	University of Michigan (Online)	27/5/2020
45	Shaswat	Participated	Expresomania	Online	26/5/2020
46	Prakhar Verma	Participated	Expressomania	Online	26/5/2020
47	Arpita Gupta	Participated	Graph Theory	NPTEL (Online)	23/05/2020
48	Arpita Gupta	Participated	Computer Networks	NPTEL (Online)	22/05/2020
49	Ayush Pandey	Participated	Course on Career Edge - Knockdown The Lockdown	TCSiOn (Online)	18/05/2020 to 21/05/2020
50	Atul Pundir	Participated	National Level Quiz on Covid-19, Mohmed Sathak College Of Arts And Science	Online	20/5/2020
51	Ananya Sharan	Participated	Course on career edge - knockdown the lockdown	TCSiOn (Online)	19/5/2020
52	Nishant Srivastava	Participated	Scribble	Online	07/05/2020
53	Anmol Kukreja	Participated	TACvid (Content Writing Competition)	Online	03/05/2020

54	Vibhanshu Mishra	Participated	Course on Career Edge – Knockdown the Lockdown	Online	02/05/2020
55	Komal Yadav	Participated	Course on Career Edge – Knockdown the Lockdown	TCSiOn (Online)	25/04/2020
56	Suman Kumari	Participated	Prakritinama (Nature Justice) , LDL internship	Online	21/04/2020
57	Komal Yadav	Participated	Course on Career Edge – Knockdown the Lockdown	Online	15/4/2020
58	Namami Patairiya	Participated	Poster Making Competition	Online	12/4/2020
59	Rishabh Pal	Participated	TCS ION	Online	10/4/2020

PLACEMENT DATA (DURING LOCKDOWN PERIOD)

Sr. No.	*Roll Number*	*Name of students*	*Batch*	*Name of company*	*Salary Pkg / Stipend*
1	1603331025	Ankit Kumar Jaiswal	2020	Capgemini Technology Services	3.80 LPA
2	1603331040	Ashwani Kumar	2020	Capgemini Technology Services	3.80 LPA
3	1603331072	Mehak Singh	2020	Capgemini Technology Services	3.80 LPA
4	1603331078	Mudit Dwivedi	2020	Capgemini Technology Services	3.80 LPA
5	1603331119	Sakshi Khugshal	2020	Effectual Services	3.00 LPA
6	1603331022	Amrish Yadav	2020	Qualtechedge erstwhile 'Qualtech Consultants'	3.30 LPA

FACULTY TECHNICAL CORNER

- Outcome-based education (OBE) is an educational theory that bases each part of an educational system around goals (outcomes).
- By the end of the educational experience, each student should have achieved the goal.
- There is no single specified style of teaching or assessment in OBE; instead, classes, opportunities, and assessments should all help students achieve the specified outcomes.
- Outcome-based methods have been adopted in education systems around the world, at multiple levels.
- The role of the faculty adapts into instructor, trainer, facilitator, and/or mentor based on the outcomes targeted.

Here are four things which you need to know about Outcome-based education (OBE) and why it is important for engineering education in India.

1) What is OBE?

- Outcome based education (OBE) is student-centered instruction model that focuses on measuring student performance through outcomes.
- Outcomes include knowledge, skills and attitudes.
- Its focus remains on evaluation of outcomes of the program by stating the knowledge, skill and behavior a graduate is expected to attain upon completion of a program and after 4 – 5 years of graduation.
- In the OBE model, the required knowledge and skill sets for a particular engineering degree is predetermined and the students are evaluated for all the required parameters (Outcomes) during the course of the program.

2) Why institutions need to follow OBE?

The induction of India in the Washington Accord in 2014 with the permanent signatory status of The National Board of Accreditation (NBA) is considered a big leap forward for the higher-education system in India.

It means that an Engineering graduate from India can be employed in any one of the other countries who have signed the accord .

For Indian Engineering Institutions to get accredited by NBA according to the pacts of the accord, it is compulsory that engineering institutions follow the Outcome Based Education (OBE) model. So, for an Engineering Institution to be accredited by NBA it should compulsorily follow the OBE model.

3) How is it measured?

The OBE model measures the progress of the graduate in three parameters, which are:

- **Program Educational Objectives (PEO)**
- **Program Outcomes (PO)**
- **Course Outcomes (CO)**

➢ Program Educational Objectives (PEO) are broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve. PEO's are measured 4-5 years after graduation.

➢ Program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation.

➢ They must reflect the 12 Graduate attributes (PO) as described by NBA for under graduate engineering programs.

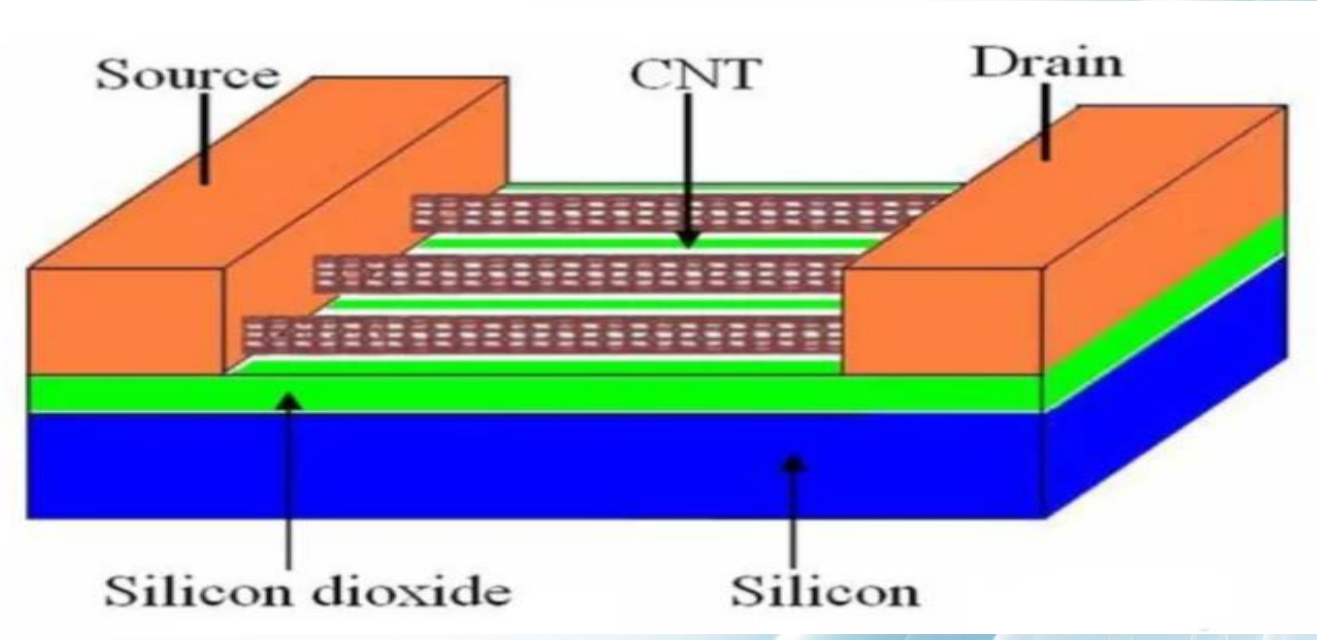
➢ Course outcomes are the measurable parameters which evaluates each students performance for each course that the student undertakes in every semester.

4) Methods of assessment

- The method of assessment of the candidates during the program is left for the institution to decide.
- The various assessment tools for measuring Course Outcomes include Mid -Semester and End Semester Examinations, Tutorials, Assignments, Project work, Labs ,Presentations , Employer/Alumni Feedback etc,.
- These course outcomes are mapped to Graduate attributes and Program outcomes based on relevance.
- This evaluation pattern helps Institutions to measure the Program Outcome.
- The Program Educational Objective is measure through Employer satisfaction survey (Yearly), Alumni survey (Yearly), Placement records and higher education records.
- The adoption of OBE at engineering institutions is considered to be a great step forward for higher education in India but the actual success lies in the effective adoption and stringent accreditation process to ensure the quality of education is maintained.

Mr. Anil Verma
(AP, ECE)

How Do CNTFETs Work, and Why Are They So Promising?



The structure of a carbon nanotube field-effect transistor (CNTFET).

New technologies require faster processors, smaller integrated circuits, and less power consumption. Technology advancements such as 5G networks increase the pressure to improve smartphone battery life, spectral efficiency, and more. One potential solution is the use of carbon nanotube field-effect transistors (CNTFETs).

A CNTFET is a nano-scaled device that can provide low-power integrated circuits with high performance and high power density. Instead of the bulk silicon material used in traditional metal-oxide semiconductor field-effect transistors (MOSFETs), CNTFETs use carbon nanotubes (CNTs) in between the source and the drain of a MOSFET structure. This enables higher current carrier mobility, enabling CNTFETs to provide a superior drive current density.

The first simple CNTFET, reported in 1998, was manufactured by depositing single-wall CNTs from solution onto oxidized silicon wafers. The CNTs were synthesized by laser ablation and Si wafers were prepatterned with gold or platinum electrodes. Over time, the process has improved. Previously, CNTs were laid down on the weak contacts of source and drain electrodes. Now, the improved process patterns the electrodes on top of previously laid CNTs.

The contact between metal and nanotubes can be improved by using gold, titanium and carbon with a thermal annealing step. The thermal processing leads to the formation of titanium carbide (TiC) at the metal/nanotube interface, significantly reducing the contact resistance from several megaohms to approximately 30kΩ.

P-Type, N-Type and Ambipolar CNTFETs

Previously, all CNTFETs were p-type (conducting positive charge carriers) because contact doping technology by the adsorption of oxygen from the atmosphere was not well understood. Later, n-type CNTFETs (conducting electrons) were developed by promoting electron conduction when CNTFETs were annealed in a vacuum. Atmospheric oxygen near the metal and nanotube contacts affects the local bending of the conduction and valence bands in the nanotube via charge transfer. The Fermi level is also near the valence band, which makes injection of holes easier. Oxygen desorption at high temperature adapts the Fermi level near the conduction band, allowing the injection of electrons. By using thermal annealing, there is no threshold voltage shift when making n-type from p-type (which is not the case during a bulk doping process).

Shrayansh Gupta

ECE 4th Year

ALUMNI SPEAK

Hi Everyone, I am Priyam Awasthy alumni of RKGIT (2014-18) Electronics and Communication Engineering batch. Currently I am working in Byju's. My 4 year experience with RKGIT was really awesome. The education, trainings and extracurricular activities provided by the college groomed my educational skills as well as management skills. The extracurricular activities of the college and hostel life taught me a lot to improve my interpersonal and extra personal skills that help me a lot in the growth of my career.

Teachers have always been very motivating and guiding. I am thankful to administration of RKGIT . Thank You RKGIT for making me what I am today.

Education is what transforms the life from dull lead to dazzling gold which not only shines in itself but brightens the beholder too.

Priyam Awasthy

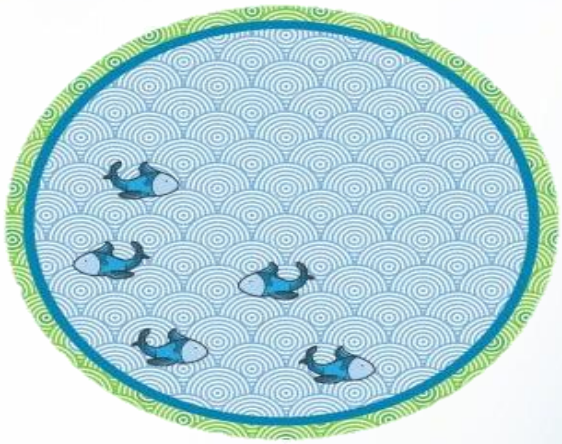
Byju's

Batch 2014-18

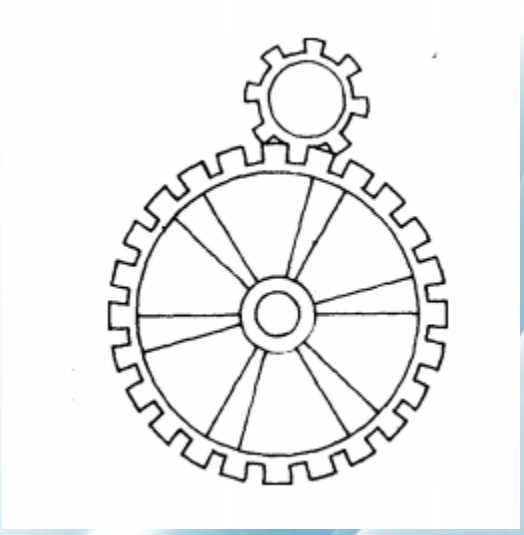
BRAIN TEASERS

1. There are three playing cards in a row. There is a two to the right of a king. There is a diamond to the left of a spade. There is an ace to the left of a heart. There is a heart to the left of a spade. Identify the three cards.
2. Cheryl's birthday is one of 10 possible dates:
   May15
   May16
   May19
   June17
   June 18
   July14
   July16
   August14
   August15
   August 17
   Cheryl tells the month to Albert and the day to Bernard.
   Albert: I don't know the birthday, but I know Bernard doesn't know either.
   Bernard: I didn't know at first, but now I do know.
   Albert: Now I also know Cheryl's birthday.
   When is Cheryl's birthday?

3. There are 5 fish in a pond. What is the probability that you can split the pond into 2 halves using a diameter, so that all fish end up in one half?



4. Here is a cog-wheel that has eight teeth. It is coupled with a cog-wheel of 24 teeth. Can you tell how many times the small cog-wheel must rotate on its axis to circle around the big one?



5. The sum of two numbers is ten. Their product is twenty. Can you find the sum of the reciprocals of the two numbers?