EDITORIAL

Prof. Mamta Kurvey

Prof. Manisha Samant

Mrs. Priti Farkade

Mr. Pavan Koli

Mr. Shubham Sawant

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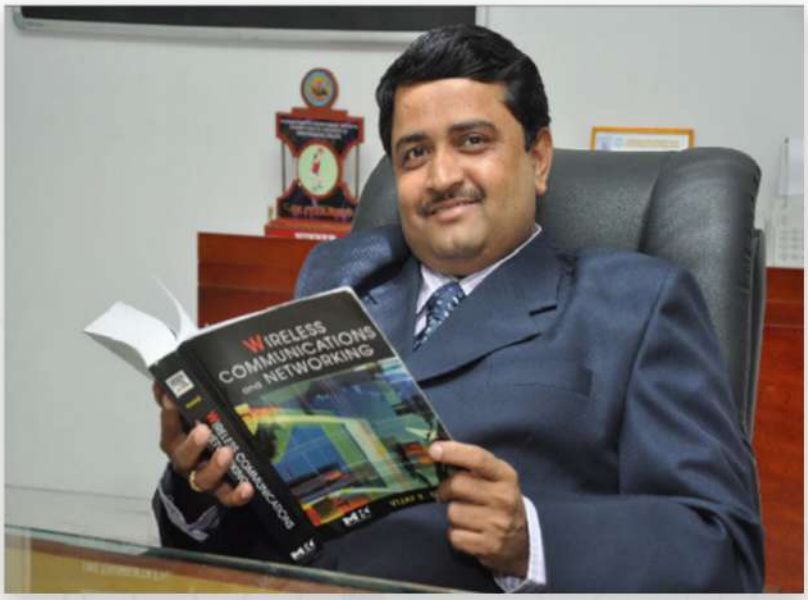
PRINCIPAL DESK



From, Principal's Desk

It is a matter of great pride and satisfaction for A.P. Shah Institute of Technology to bring out the newsletter "Nirmiti" released by the Department of Electronics & Telecommunication. The department aims to create a centre of professional learning in the field of Electronics and Telecommunication Engineering in sync with the technological progress to meet global industrial challenges and social requirements.

This newsletter is an eloquent expression of the progress and outstanding achievements that a department has to its credit. It highlights the quality of education and the extra curricular activities that the department has undertaken to develop the all round personality of the students.

The readers would be greatly benefitted as the contents are going to unfold for them new information on various scientific and literary topics.

I congratulate the Editorial Board of this newsletter who have played wonderful role in accomplishing this task. Also my heartfelt congratulations to the Head of Department and the faculties for their fruitful efforts.

Dr. Uttam D. Kolekar.

H.O.D. DESK

From, **HOD's Desk**

It gives me immense pleasure to present before our readers the first publication of the Electronics & Telecommunication Department's newsletter "Nirmiti".

Nirmiti is an amalgamation of all the events held in the department and it plays an instrumental role in providing a greater exposure of the achievements accomplished by the students and the faculties.

In the era of engineering and technology, Nirmiti, which is creation in Sanskrit, will motivate the teachers and students for sharing their creativity and new ideas with the world and will help in their overall development.

Even as we impart education to match the advancement in technology and globalization, we march our students ahead with APSIT's ethos of moral values and principles. We constantly endeavour to instil these qualities in our students. We feel proud to help them grow and develop into sensitive and responsible citizens of the next generation.

Learning becomes powerful and engaging with the combined efforts of students, parents, teachers and staff. Together, we work in inspiring the students to continually strive for excellence.

I congratulate the entire editorial team for their hard work and dedication and request everyone to go through this newsletter. Your feedback and suggestions would be appreciated. Thank you.

Prof. A. M. Deshpande

VISION

To create a centre of professional learning in the field of Electronics and Telecommunication Engineering in sync with the technological progress to meet global industrial challenges and social requirements.

MISSION

To provide facilities, infrastructure and training to students and faculty members and thereby create the ambience for excellent learning in Electronics and Telecommunication Engineering.
To provide project based and value added education.

ABOUT THE DEPARTMENT

Electronics and Telecommunication sector has revolutionised the world. World is moving towards the fifth generation of mobile communication, the backbone of smart cities is Wireless Communication. This has resulted into ever increasing demand for Electronics and Telecommunication Engineers in India and abroad.

To cater the requirements of the communication industries, the department offers excellent infrastructure and resources in the form of knowledgeable faculty and a library having a vast collection of informative books.

The Department is well-equipped with laboratories containing latest equipment's, along with software and hardware tools to cater to the need of advanced communication technologies.

The laboratories have state-of-the-art equipment like Spectrum Analysers, Digital Storage Oscilloscopes, High Frequency CRO and Radio Frequency Signal Generators and software tools like MATLAB, MultiSim, LabView etc.

The department is involved in a number of technical and co-curricular activities encouraging students to broaden their horizons of thought, innovate and implement their ideas.

The department has acquired expertise in the area of Electronic devices and circuits, Embedded System Design, Analog and Digital communication, Wireless Communication and Networks, Optical Communication and Networks, Antenna and RF System Design. Faculty members are actively involved in research activities and have many research publications in international & national journals and international conferences to their credit.

The department also offers consultancy services to the industries and R&D organizations in the area of the expertise.

STUDENT ACHIEVEMENTS

1. Previous Examination Result (BE, TE, SE) in percentage

   BE : 94.59 TE : 71.43 SE : 68.09

2. Placement record of students.

   Out of 39 students of 2018 batch, 22 students secured placement in different reputed companies and 5 students from 2019 batch got placement in Capgemini, LTI, Hexaware and Wipro

3. Student Achievements Academic (Topper)
   BE : Ms. Archana Chauhan
   TE: Ms. Sayali Gurav
   SE : Ms. Archana Gajula

4. Student's Achievements in various Project Competitions, Workshops, & Seminars.

a) One team cleared qualifying round of eYantra Ideas Competition-2018 and team members are Shreyas Somani, Ishwar Prajapati, Guruprasad Singh.
b) One team reached country level quarterfinals of India Innovation Challenge design contest – 2018, will receive $ 200 worth funding from Texas Instruments and team members are Yash Dedhiya, Yash Chopra, Deep Darji, manish Mishra.
c) 26 students from SE, TE and BE participated in DrishTI online Competition conducted by Texas Instrument. Ms. Disha Sharma, Ms. Pranjali Karjawkar and Sayyed Altamash secured Ist, 2nd and 3rd position.

5. Student's Achievements in sports (intercollegiate/University level)

6. Student Training Programs/I.V. organized by various departments.
   Industrial visit was organised on 10th August-2018 to Giant Meter wave Radio Telescope (GMRT), where 32 dish antennas were placed in T shape. Astronomers from all over the world regularly use this telescope to observe many different astronomical objects. There were 29 students and 4 faculties for this visit.

STUDENT ACHIEVEMENTS

7. Value Added Courses organized by the department

8. C, C++ and Java courses are organized for TE and BE students for preparing them to be industry read
9. Tie up or MOU of department with various external foundations

Tie-up with Cisco –Networking Academy for conducting CCNA Routing & Switching & CCNA IOT Courses for students.

Tie-up with Texas Instruments for setting up innovation lab in APSIT campus, and training students and faculties on Texas Tools like MSP430 and Tiva C for IoT Applications.

Tie-up with IIT Bombay for setting up eYantra Robotics Lab in APSIT campus, students will be introduced and trained on FireBird and Spark Robotics platform.

FACULTY ACHIEVEMENT

1. Prof. M. P. Kurvey has filed the patent on “Antenna for RF energy harvesting”

   Prof. Jay Mehta and Mrs. Priti Farkade Successfully completed CCNA Routing & Switching Course

2. Research Papers Published by Faculty

   Prof. M. P. Kurvey has published paper in Springer journal on “RF energy harvesting”

3. Participation of faculty in STTP/Workshop/Conference/Seminar

   Prof. M. P. Kurvey and Prof. M. M. Samant attended one week AICTE-ISTE approved STTP on IOT: Fundamentals and recent advances with practical approach.

   Prof. J. S. Mehta, Prof. S. V. Furtado and Prof. Sonal Jain attended two days Introductory workshop on Robotics in IIT Bombay.

   Prof. S. V. Furtado, Prof. Sonal Jain and Prof. M. C. Pawaskar attended Task based Training on eYantra robotics Lab setup and secured grade A, cash prize of Rs. 8000 and two firebird 5 robots.

4. Faculty Development Programs/Workshop/ organized by Department in APSIT

   Texas Instruments had conducted Faculty Development Programs on MSP430 and TIVA- C platform.

TRAINING & PLACEMENT

BATCH 2018

Sr. No.	Name of student	Company name
1	Zaid Kadri	DSE CXC
2	Suraj Ghadge	Epsilon Controls and Automation
3	Rohit Chauhan	Hikvision
4	Ashish Lohar	Hikvision
5	Anil Singh	Hikvision
6	Sampada Shelar	HP
7	Aniket Dange	Illusion Dental Laboratory
8	Bhagyashri Ghavne	Media Service
9	Ajay Badhe	Paytm
10	Joseph Nadar	Paytm
11	Bhavika Bhanushali	Qspider
12	Jyoti Kale	Mindspace
13	Ruchi Rane	Reliance
14	Vaibhav Gupta	Sankey Solutions
15	Ankita Jadhav	Sankey Solutions
16	Bhupen Kulkarni	Skandha Media services
17	Pooja Pawar	Skandha Media services
18	Bhoir Virendra	Tata Tele service
19	Chetan Kadam	Tata Tele Service
20	Kanchan Toraskar	Tata Tele Service
21	Ashish Ubale	Tata Tele Service
22	Ankita Vaity	Tata Tele Service

BATCH 2019

Sr. No.	Name of student	Company name
1	Shrutika Shinde	Capgemini
2	Sonam Mathur	LTI
3	Swara Vaidya	Hexaware
4	Shalvi Dalvi	Hexaware
5	Siddhesh Nikam	Wipro

INTERNSHIP DETAILS OF STUDENTS

Company Name	Student Name	Time Period
Bharat Sanchar Nigam Limited, Yeur Thane	Ms. Ghoshita Nerurkar	2 weeks
Bharat Sanchar Nigam Limited, Yeur Thane	Mr. Shubham Kank	1 week
Bharat Sanchar Nigam Limited	Nimisha Kadam	1 week
Doordarshan Kendra	Devendra Garud	1 week
Headstrait Software	Aakash Agarwal	2 weeks
Doordarshan Kendra	Guruprasad Singh	1 week
Doordarshan Kendra	Tanuj Shukla	1 week
Bhabha Automatic Research Centre	Yash Koli	4 weeks

IETE STUDENT FORUM

An IETE Student Forum (ISF) was formed and inaugurated on 22nd August, 2017 to provide the students with a platform to explore and display their technical skills.

The dignitaries for the inauguration of ISF were:
1) Prof. Uttara Gogate, Secretary of IETE Mumbai Chapter
2) Prof. Madhuri Rodge, Convenor of IETE Mumbai Chapter
3) Dr. U. D. Kolekar, Principal APSIT
4) Prof. A. M. Deshpande, Vice Principal and HOD of EXTC, APSIT
5) Dr. S. S. Nanivadekar, Dean Administration, APSIT

The elected members of ISF are:
1) President: MR. Shubham Sawant
2) Vice President: Mr. Pavan Koli
3) Secretary: Mr. Rohan Shetty
4) Treasurer: Mr. Salman Qureshi


A. P. SHAH INSTITUTE OF TECHNOLOGY
DEPARTMENT


A. P. SHAH INSTITUTE OF TECHNOLOGY
THINK GREEN
Remember to
Turn Off
Electrical
Appliances
Before Leaving
Classroom!


A. P. SHAH INSTITUTE OF TECHNOLOGY
DEPARTMENT
OF
ELECTRONICS & TELECOMMUNICATION
ENGINEERING
IETE STUDENT FORUM (ISF) Mumbai Chapter
PSIT

INAUGURATION OF IEEE APSIT STUDENT BRANCH

A. P. SHAH INSTITUTE OF TECHNOLOGY organised an event for the inauguration of IEEE APSIT Student branch, on 22nd January, 2019, at the College seminar hall

The keynote speaker was Dr. Hussain Falih Mahdi, (Ph.D) Department of Electrical and Electronic and System Engineering National University of Malaysia. The other guest of honour were Mr. Vinit Kotak, Mr. Abhay Phansikar and Mr. Kiran Talele.

The guest of honour Dr. Hussain Mahdi was welcomed in the college with a traditional lezim performance and a traditional dance, performed by the students.

We then started the project showcase where various innovative projects made by the students were viewed by him. He also shared his expertise in the domain, which inspired students to further enhance their projects and improve them. The projects included display of Solar Car as well as projects based on Raspberry Pi like demonstration of Farmer buddy, Quadcopter, etc.

The guest speeches were preceded by a short talk , by the principal of A. P. Shah Institute of Technology, Dr. Uttam D. Kolekar. In his talk, he greeted the dignitaries on the dias and emphasized on the endless opportunities the college provides to the students through various workshops and events The event started with a prayer and lighting the lamp, followed by a welcome spech.

The event started with a prayer and lighting the lamp, followed by a welcome address Mr. Vinit Kotak and Mr. Abhay Phansikar delivered a short speech on the opportunities in IEEE and how students should broaden their perspective and think out of the box to use the technical knowledge to serve humanity. This was followed by the grand inauguration of IEEE by Dr. Hussain Mahdi. He then conducted an one hour session, in which he gave a brief description of IEEE and the amount of hard work the members put into, to make this a successful organization.

He also explained about Power and Energy Society (PES) and Industry Application Society (IAS). PES provides the world's largest forum for sharing the latest technological developments in the electric power industry, for developing standards that guide the development and construction of equipment and systems, for educating members of the industry and the general public. IAS will be a world leader in the advancement of technology and dissemination of technical information to support professionals engaged in the applications of electrical and electronic engineering to industry. He explained how IEEE gives a wide opportunity to the students who are interested in both social work and technology.

Dr. Hussain Mahdi, who is IEEE PES SB region 10 coordinator, IEEE IAS chapter Area chair R10 Southeast Asia, Australia and Pacific and many more, explained the international opportunities IEEE provides to students. He also showcased his tremendous achievements which he gained with the help of his team members, which inspired many students.

Another dignitary on the dias was Mr. Ali Mustafa, who is the chairperson of the student branch IEEE, who delivered a 45-minutes motivational speech on how students should broaden their view and start thinking differently. He emphasized on bringing a change in oneself and believing in oneself. The event conducted with honorarium to the guests and vote of thanks by the Dean of Administration of A. P. Shah Institute of Technology, Dr. Sameer Nanivadekar.

The event inspired many students to look forward to have a membership in IEEE.

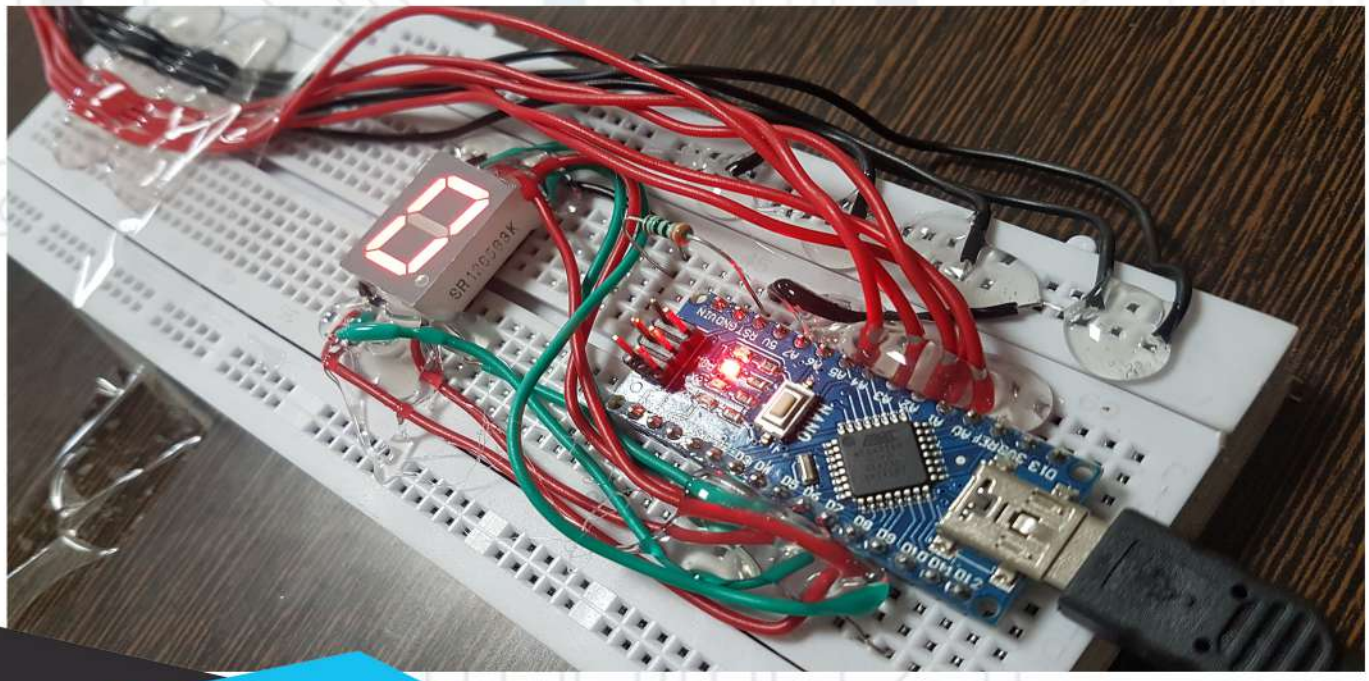
Aarohi Joshi
TE EXTC

REPORT ON CIRCUIT BUILDING COMPETITION

The "Circuit Building Competition" event was organized by the ISF faculty co-ordinator of EXTC Department Prof. M. P. Kurvey on 1st March, 2018 at A. P. Shah Institute of Technology at 10.30 am. The following faculty members have worked hard for successful completion of event:

1) Prof. Sonia Aneesh
2) Prof. Manisha Samant
3) Prof. Tejashri Kolhe
4) Prof. Veena Gawade
5) Prof. Jay Mehta
6) Prof. Adesh Hardas
7) Prof. Selvin Furtado
8) Mrs. Priti Farkade
9) Mr. Avdhut Patil, last but not the least our laboratory assistant Mr. Vinod Shinde.

The competition was open to all students of SE, TE and BE EXTC. The registration for the competition started from 16th to 28th February, 2018. The ISF members Sonam Mathur and Yash Chopra had taken the initiative for registration. A Total of 27 groups participated in the competition. Each group was of two members.



DEPARTMENTAL ACTIVITIES

e-Yantra

1. One team cleared qualifying round of e-Yantra Ideas Competition-2018, team members are Shreyas Somani, Ishwar Prajapati and Guruprasad Singh.
2. Faculties completed task based training under e-Yantra and scored grade-A and received Rs. 8000 as cash prize and two "Firebird 5" robots and faculties are Prof. Selvin Furtado, Prof. Sonal Jain, Prof. Mahesh Pawaskar and Prof. Swapnil Kondawar (Mechanical).
3. One team cleared second round of e-Yantra Robotics competition-2018, and won mobile controlled drone and wide angled camera and the team members are Sujoy Dev (SE IT), Suyash patil (SE MECH), Vidyabhushan Singh (SE MECH), Prem Parde (SE MECH)

Texas Instruments

1. One team reached country level quarterfinals of India Innovation Challenge design contest – 2018, will receive $ 200 worth funding from Texas Instruments and team members are Yash Dedhiya, Yash Chopra, Deep Darzi, manish Mishra.
2. Texas Instruments had conducted training program on MSP430 and TIVA- C platform. 50 students and 18 faculties have attended the training.
3. DrishTI Texas Instruments Online Competition was successfully conducted for SE, TE and BE students.

SOFTWARE PURCHASE

MATLAB

Multisim

python

ARDUINO OPEN-SOURCE COMMUNITY

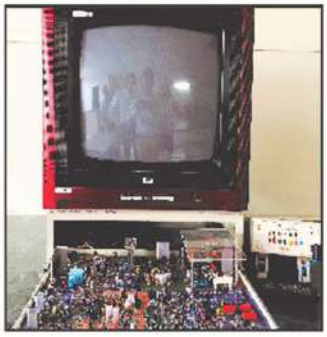
CS EAGLE

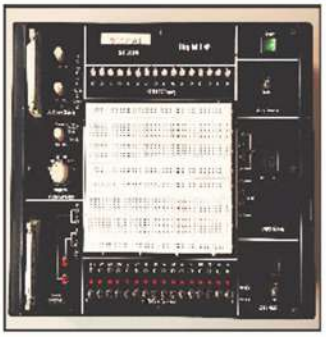
Proteus

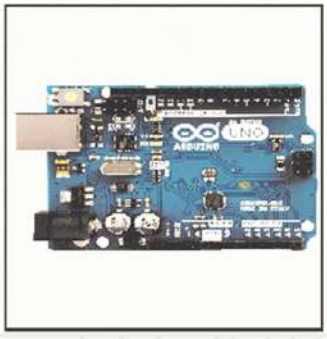
NGSPICE

Sprint Layout Version 6.0

TEST SETUP IN EXTC

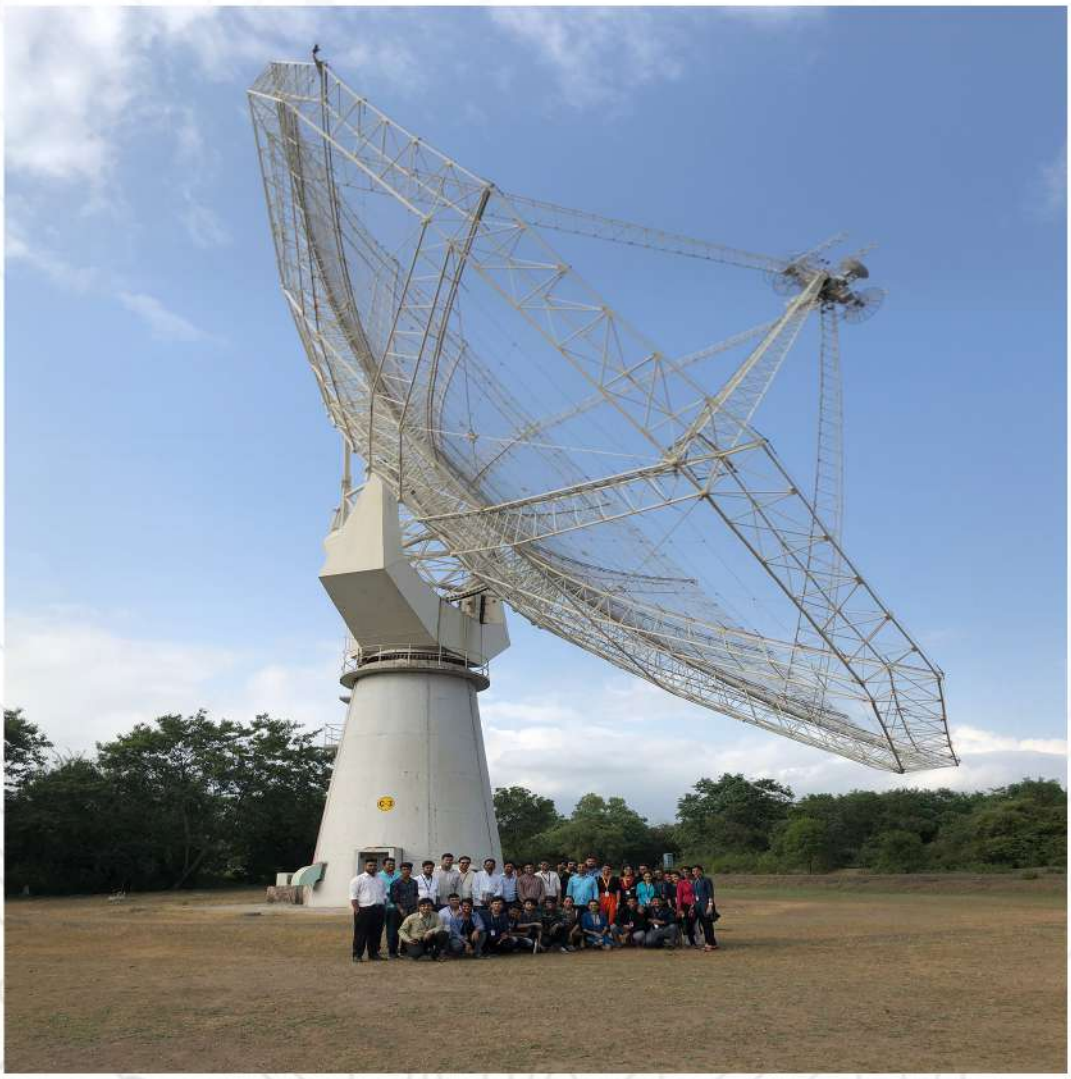




INDUSTRIAL VISITS

An Industrial visit to GMRT Narayangaon was organized for Final year students on 10th August, 2018.

The Giant Metrewave Radio Telescope (GMRT), located near Pune in India, is an array of thirty fully steerable parabolic radio telescopes of 45 metre diameter, observing at metre wavelengths. It is operated by the National Centre for Radio Astrophysics, a part of the Tata Institute of Fundamental Research, Mumbai. At the time it was built, it was the world's largest interferometric array offering a baseline of up to 25 kilometres.



An Industrial visit to GMRT Narayangaon for BE EXTC students on 10th August,2018

Report on Industrial Visit To GMRT-Tata Institute of Fundamental Research (2018-2019)

The Industrial visit was carried out at GMRT on 10th August, 2018 for SEM VII Electronics and Telecommunication Engineering Students. Prof. Adesh Hardas, Prof. Veena Gawde, Prof. Selvin Furtado, Mrs. Priti Farkade along with 27 students visited GMRT.

The main objective of this visit was that, as a part of the Electronics and Telecommunication Engineering, the students need to know practical fundamentals, implementation, functionality, and mechanism of antennas and also to get the knowledge of the Radio Telescope, different components involved, hardware and software co-design, etc.

The site for GMRT, about 10 km east of Narayangaon town on the Pune-Nasik highway, was selected after an extensive search in many parts of India, considering criteria such as low man-made radio noise, availability of good communication, vicinity of industrial, educational and other infrastructure and, a geographical latitude sufficiently north of the geomagnetic equator in order to have a reasonably quiet ionosphere and yet be able to observe a good part of the southern sky as well.

After reaching, students were guided by the staff member towards one of the big antennas. It was great to know that GMRT consists of 30 fully steerable gigantic parabolic dishes of 45m diameter each spread over distances of up to 25km.

After introduction all students were shown the big antenna and were told about how it works and were guided about its various functionalities. The metre wavelength part of the radio spectrum has been particularly chosen for study with GMRT because man-made radio interference is considerably lower in this part of the spectrum in India. Fourteen of the thirty dishes are located more or less randomly in a compact central array in a region of about 1 sq.km. The remaining sixteen dishes are spread out along the 3 arms of an approximately 'Y'-shaped configuration over a much larger region, with the longest interferometric baseline of about 25 km.

The GMRT is the largest radio telescope in the whole world and hence has great appeal in astrophysics research. Astronomers from all over the world regularly use this telescope to observe many different astronomical objects such as galaxies, pulsars, supernovae, sun and solar winds.

The visit concluded with an interactive session for the students, where they got an opportunity to interact with the concerned authorities and gain more knowledge. It was a great learning experience for one and all.

FRIENDSHIP

क्यू मुष्कीलो मे साथ देते है दोस्त
क्यू गमको बाट लेते है दोस्त
न रीश्ता खून का न रिवाज से बंधा है
फिर भी जिंदगी भर साथ देते है दोस्त

It is an established fact that fragrance of friendship enriches our lives and we can face the challenges of life very swiftly in the company of friends. Several authors, poets have written extensively about this essential facet of human life. However, do we mistake it with other shallow relationships that we make and brake so often during the course of life? is a question worth dwelling into.

Usually we have wide choice of making friends in school and college days wherein we can avoid some classmates. This flexibility is not available to you, once you join job or business. You are forced to deal with people whom you have not chosen but you can not avoid, You still need to maintain relationship and try possibilities of friendships as you have to spend substantial amount of time with these people.

We need to check whether we are really friends or we are in a comfort zone provided by certain group of fellow colleagues. Among a group of friends, there is usually a common thread that binds everyone. If the thread is related to some virtue, the friendship is in the right direction but if it is related to some kind of addiction it leads to disaster.

FRIENDSHIP

Usually, like minded people attract each other therefore miserable attracts miserable and proactive attracts proactive. Sometimes people come together because they have a common enemy. People also come together when they have vested interest. Any kind of togetherness which is selfish is bound to be disastrous. Treating this kind of gathering as friendship is a mistake.

It is essential to ascertain whether we have true friends or we are in a company of people who enjoy laziness, avoid the things which are essential. If you are avoiding something in your life, you may be simply postponing which is inevitable and you are finding shelter in the company of so called friends, that makes your life miserable. Real friends are those who give you advice that you may not like at that moment but it turns out to be positive life changer in future. Any relationship is worth keeping if it turns out to be your strength, it is worth preserving and protecting, otherwise we only carry the burden which is totally unwanted.

A true friend is the one with whom you can open your heart and share your failures and misery. Social media cannot give you this kind of support, on the contrary it can appreciate only so called success stories as if there are no failures in anybody's life.

For a true friendship to blossom sometimes closeness for some days may be essential but later on even if friends are physically at a long distance and not meeting frequently or even not talking regularly, does not matter. Only requirement is that the friend should be available when needed, may be for a word of solace, advice and company.

No doubt, life changes by the company we keep, but we can not forget that one has to perform as an individual to build relationship, earn degrees, perform at the work place and earn respect in society. Friendship is a support system that can not contribute in this area which is essential part of the life.

FRIENDSHIP

If you apply so many filters for friendship, you would end up with a few number of friends whose friendship is worth maintaining throughout life and majority of the pseudo friendship relations will be eliminated. All glorified sayings about friendship are pointing towards true friendships which are usually rare and those who have it are truly blessed.

Prof. A. M. Deshpande

ELECTRO INSPIRON

The Electronics and Telecommunication Engineering program encompasses areas such as Telecommunications, Data Networks, Signal Processing, Digital Systems, Embedded Systems, Microwave, Electronics, Optoelectronics, Solid-State Devices and a lot more.

Department of Electronics and Telecommunication Engineering of PCT's A. P. Shah Institute of Technology, Thane is one of its most vibrant Departments which is always successful not only in academics but also in other activities with support and great enthusiasm of qualified & dedicated staff members and students.

This magazine "NIRMITI" is also such a joint undertaking of faculty as well as students which give a complete tour of the department as you flip through its pages. This magazine also gives a glimpse of the achievements of the students on various academic and extra-curricular front. This magazine also unfolds various technological advancements in the field of Electronics & Telecommunication.

I congratulate the editors of this magazine for achieving this feat in much less time. I would also like to congratulate the HOD and the faculties for their immense efforts.

Faisal Khan
Head Training & Placement Officer
A. P. Shah Institute of Technology.

MOTION DETECTION USING BACKGROUND SUBTRACTION

Abstract:
Digital image processing is one of the fastest growing fields nowadays. Due to the easy accessibility of digital processing hardware around the globe, the field has been making great strides.

With its involvement in applications such as surveillance systems for monitoring and security purposes, consumers products such as smart phones for facial recognition, space applications such as identification or classification of various alien objects and much more, there is a great need of progress and advancements.

In this particular paper we are going to discuss "Motion detection using Background detection". Conventionally, this method involves the background to be identified and further differentiated with respect to objects moving in the foreground. It is also called as Foreground detection technique.

Introduction:
The detection of motion and objects is a very important task in surveillance systems, traffic monitoring systems, facial recognition systems, gesture recognition systems, and further more.

For example, if we need to monitor the number of cars passing by a certain toll booth, we could automate the process by just taking the surveillance videos from the CCTV cameras installed on the toll booth for counting the number of cars by using certain object detection and tracking technique or algorithm.

This would require us to initially differentiate the stationary background from moving objects and then use it as a reference frame. This reference frame is further compared to successive (following) frames of the surveillance video. In the conventional method, we would just subtract each frame with the reference frame, obtaining the difference that is the different objects that appear in the video. Then we draw a bounding box around each object and store this data in a database.

But this conventional method has some major drawbacks such as inaccuracy caused due to inability to differentiate between similar looking objects, need for a filter for noise reduction and mainly we need to tackle the issue of uneven background illumination.

MOTION DETECTION USING BACKGROUND SUBTRACTION

As discussed earlier, if we want to count the number of cars passing a toll booth, this would involve a technique that should work regardless of whether it is day time or night time. For example, if a black car passes the toll booth at night time, the conventional subtraction technique would fail, as it would end up subtracting both, dark background and dark shade of car. Similarly, if a bright shade car passes in day time, the technique should be able to recognize the car regardless of the glare caused by sunlight.

Thus, in this particular paper we discuss a very simple yet effective method to achieve motion or object detection with high accuracy without any use of noise reduction filters or complex algorithms, moreover also tackling the problem of uneven background illumination.

Methodology:
STEP 1-
In the First step, we are required to extract the background(stationary objects) from the given video. For this, we could simply choose a frame which has the least number of objects present in it (eg. first frame of the video).

But choosing the first frame for every video might decrease the accuracy, if the first frame of the video already consists an object, as this object might end up being unaccounted. So, to solve this problem we take few initial frames of the video and take an average of it, thus obtaining a reference frame with minimal objects.

Step 2-
Once we have obtained the reference frame, we can move forward to the second step, which involves solving the issue of uneven background illumination. For this, we use morphological top-hat filtering method which evens out the background completely.

The results of top-hat filtering are shown below,
Before applying top-hat filtering technique in shown in fig 1.1

MOTION DETECTION USING BACKGROUND SUBTRACTION

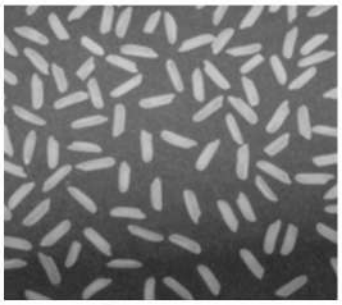


Fig 1.1
After applying top-hat filtering technique (fig 1.2)

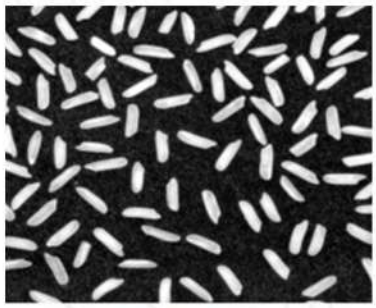


Fig 1.2

Step 3-
Now, as we have got a desired reference frame with an evened out background, we can move to Third step, similar to the step above we have to consider each frame from the video and even out the background in every single of them using the same top-hat filtering method as we used earlier. We consider this as the current frame.

Step 4-
Furthermore, we move on to Fourth step, which involves the subtraction of the current frame from the reference frame. But as we have mentioned earlier in this paper, the conventional subtraction method results in inefficient results. To tackle this, we use bit EX-OR function. This results in a highly accurate extraction of any objects or motion.

As we can observe in the above figure (fig. 2.1), the conventional subtraction method obtained just one significant object while the EX-OR function obtained 3 significant objects. (Here, car is referred as an object)

MOTION DETECTION USING BACKGROUND SUBTRACTION

Truth table for EX-OR function
Comparison of conventional subtraction and bit EX -OR method

Inputs		Outputs
X	Y	Z
0	0	0
0	1	1
1	0	1
1	1	0

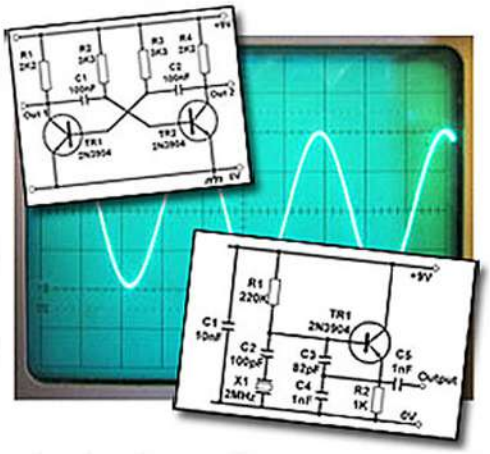
Step 5-
Now, we have entered the final stage, fifth step, here we have successfully obtained a resultant frame which consists of the object and with some noise. To get a more accurate result we need to get rid of the noise. For this, we simply convert the image from RGB to Grayscale and binarize it, further more we reduce the noise by filtering and consider only significant objects (ie. cars in the given example). Finally, we place a bounding box on the object (car) and further account it in the database.

Conclusion:-
As we can see the conventional background subtraction technique has drawbacks such as presence of noise, inefficiency due to uneven background illumination ultimately obtaining false results. To solve these issues, one has to resort to the use of a combination of complex algorithms and filters.

In this paper we have proposed a simpler and much efficient way than the conventional background subtraction method.

Aakash Agarwal
Nimisha Kadam
Shrinidhi Prabhu
Shweta Parab

OSCILLATOR



Microwave oscillator technology continues to make strides in the availability of new active devices and resonator technologies because circuit simulation and design techniques have advanced. Low frequency current noise sources are cyclostationary and are modulated not only by the DC current, but also by the time varying, large-signal RF current. Oscillators are the key components for virtually any communications, navigation, surveillance or test and measurement system which provide a critical clocking function for high speed digital systems. Transistor oscillators have made great developments in the last quarter of the century with silicon bipolar junction transistor dominating the oscillator field.

The oscillators are all governed by a common signal at desired frequency of operation, which can be distributed with a corporate feed network or optical carrier via photodetector. Two oscillator configurations can be generalized for microwave oscillator design using three-terminal transistors: series feedback and parallel feedback. The series feedback topology is more suitable for wideband oscillation generation while the parallel feedback topology is more suitable for narrowband signal generation like WPT system for its lower phase noise.

TYPES OF OSCILLATORS :-

1. Crystal Oscillator
2. Hartley Oscillator
3. RC Phase Shift Oscillator
4. Colpitts Oscillators

A LIFE LIVED WITH LOVE IS LIFE.

Look around.... What can we see?.....Need, pain, tragedy, suffering, ignorance, wars, the suicidal madness of terrorism, insatiable greed, not just for material things, but to rule the world with ideas, religions, government policies, militant actions so on and so forth ....the end result of all this EVIL is TEMPORARY GAIN. What can be done with the miseries happening all around us? But wait..... shouldn't we rephrase this question, as a great man once said " Don't ask, what the country can do for you, but ask what you can do for your country" . The answer to this question is 'TO DO SMALL THINGS WITH GREAT LOVE'. Because from the many small things that each one of us do with love towards neighbours and fellow citizens..... Will they like up and become bigger ones and finally they become contagious. Thus lifting one and all to follow the acts of the love in every possible way so as to alienate the sufferings of all around us.

The greatest disease in the society today is being unwanted, unloved and uncaved for. We can cure physical diseases with medicines but the only cure for loneliness, despair and hopelessness is LOVE. There are many in the world who are dying for a piece of bread but there are many who are dying for little love and care. The poverty in the society is a different kind of poverty....it is not only poverty of loneliness but also of spirituality. There's a hunger for love, as there is a hunger for GOD. Be the living expression of GOD'S kindness in your smile.

Helping others is not only good for them, it also makes us happy and healthier too. Giving also connects us to others creating stronger communities and helping to build a happier society for everyone. And it's not all about money we can also give our time, ideas and energy. So if you want to feel good, do good!! Giving others isn't only about money, so you don't need to be rich. Giving others can be as simple as a single kind word, smile or a thoughtful gesture. It can include giving time, care, skills, thoughts or attention. Sometimes these mean as much, if not more, than financial gifts. Do not think that love in order to be genuine has to be extraordinary. What we need is to love without getting tired. Be faithful in small things because it is in them that our strength lies. At the end of life we will not be judged by how many diplomas we have received, how much money we have made and many great things we have done. We will be judged by ' I was hungry, and you gave me something to eat, I was naked, and you gave me clothes. I was homeless and you took me in.

We are not sure exactly, what heaven will be like, but we know that when we die, and it comes time for God to judge us he will not ask how much money we have earned in life, rather he will ask How much love we put into what we did? SO DO SMALL THINGS WITH GREAT LOVE".

MIHIR VICHARE
FE EXTC

!! आई !!

"**आई**" हा शब्द उब देणारा,
एक मायेचा अनुभव,
एक प्रेमळ जाणिव,
एक सुखाचा श्वास,
एक गोंजारलेल कुंपण,
ती आहे म्हणुन आपण आहोत,
तिच्यामुळेच हा श्वास आहे,
तिच्यामुळेच हे जग आहे,
आपली पहिली चाहूल होताच,
तिने आपल्याला केलेला तो पहिला स्पर्श
आणि तिथून सुरु झालेला हा प्रवास.....
आजही ती आहे, ती होती आणि ती असणारच
हा आपला विश्वास.....
हे चक्र चालू असतानाच कळत नकळत
आपण तिला दिलेला त्रास.....
ती आपल्यासाठी सदेव असते
हा आपला आत्मविश्वास.....
हृदयात निरंतर तरंगत रहावस वाटणारा
तिच्यासोबतचा हा प्रवास.....
अश्या या "आई" ला माझा शतशः धन्यवाद !

सौ. प्रिती. सं. फरकाडे.

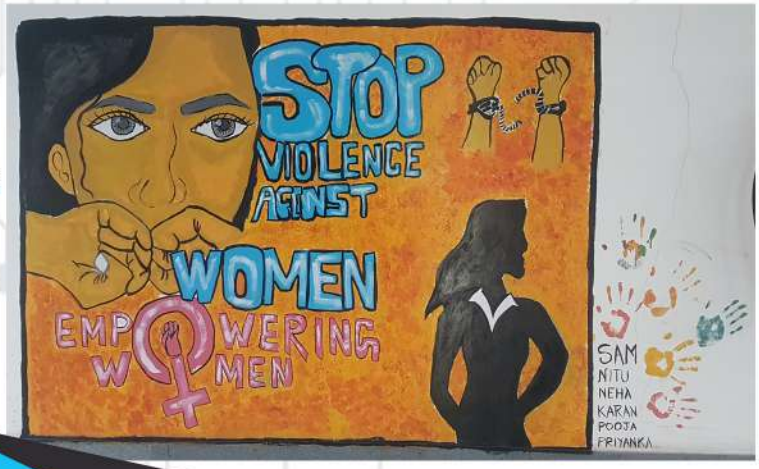
ART SMART

AAROHI JOSHI FROM TE EXTC

CHIRAG PANCHAL FE EXTC

SHUBHAM SAWANT
FROM BE EXTC

WALL PENTING BY EXTC STUDENTS



PICTURESQUE

PAVAN KOLI FROM BE EXTC

SHUBHAM SAWANT FROM BE EXTC

DEVENDRA GARUD
TE EXTC

OJUS 2019 ACHIEVEMENT

Head of Cinematography Team

1. Shubham Sawant
2. Pavan Koli

Head of Creative Team

1. Hardik Godhania

Winners of OJUS 2019

1. Badminton (Indoor)
   Badminton Singles Boys
   Winner:-Vivek Singh
2. Badminton Singles Girls
   Runner-up:- Disha Sharma
3. Football (Outdoor)
   Winner - EXTC
4. Carrom (Indoor)
   Carrom Singles Boys
   Winner:- Harmin Patil
   Runner-up:- Rohan Tiwari
5. Carrom Singles Girls
   Runner-up:- Sonam Mathur
6. Carrom (Indoor)
   Carrom Doubles Boys
   Winner:- Harmin Patil, Dipen Bhoir
   Carrom Mixed Doubles
   Winner:- Pallavi Phadtare, Harmin Patil

MEMORIES OF THE YEAR

NEWSPAPER READING

FAREWELL CELEBRATION

MEMORIES OF THE YEAR

NAVRATRI CELEBRATION

WOMAN'S DAY CELEBRATION

2018-19

Parshvanath Charitable Trust's

A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE

Parshvanath Charitable Trust's

A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE

NIRMITI

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DEPARTMENT OF
ELECTRONICS & TELECOMMUNICATION