E & TC DEPARTMENT PRESENTS

TARANG

INDEX

TARANG TEAM

(L to R) Isha Agarwal, Jui Wasade, Vidushi Kumari, Kalyani Oak and Dhanashree Karmalkar with Prof. Manasi Pathade (Tarang Magazine Co-ordinator) and Dr. Prachi Mukherji (HoD, E&TC Dept.)

EDITORIAL

We at Tarang proudly present to you our latest technological edition at the beginning of new year 2015.

We introduce an array of topics including the truth about nano particles, an intoduction to the applications of image processing, a highly entertaining satire on the truth of India, a three-step creative process for manifesting dreams is introduced in The Secret : Ask (visualize in the film), Believe, and Receive. A detailed report on the highly informative industrial visit to TIFR's GMRT at Talegaon is presented. In addition to this project synopsis of the winners of TE project competetion is included.

But its not all about books here. Our faculty and students have proved their mettle in both intellectual and co-curricular fields alike.

A crossword at the end will get your grey matter up and firing.

Enjoy!

- Tarang Team

Message From HOD

I am absolutely delighted to see the departmental activities grow in leaps and bounds in the last six months.

My congratulatins to the co-ordinators and supporting team for organizing workshops : one for students on Embeddded Systems and one for teachers of Pune University for the subject "ITCT".

Equally enthusiastic faculty members attended workshops and conferences, delivered lectures, workshops and seminars. Students kept the flag flying high by winning prizes in intercollegiate events.

Look forward to more such activities in future also.

Tarang team indeed deserves my appriciation for their dedication and enthusiasm.

Dr. Prachi Mukherji

INTRANSIGENT INDIANS AND THEIR GOVERNMENT

ISHMITA SINGH S.E Div 'A'

Nobody settles for less, and if we can extract that last five rupee from that auto driver, oh yes , we will .'Modi' , and that sums up India's present government , thanks for voting and further submission to this dominating power will be appreciated. Talking about the currency which is being sat upon by the gujratis' , with Mr. Gandhi at the back and Mr. Modi's signature on the front , I predict a favorable year for those in politics, an increase in income and popularity through social matters will be observed.There was a time when our parents would buy anything that had a Made in Japan or a Made in Germany tag on , I figured , as those people weren't busy making children, they must be doing a good job out of this and with the negative population growth rate, my beliefs were confirmed and my Dad bought a new Volkswagen .

Talking about foreign subjects , India and Australia have signed a nuclear deal, now I can dream about low power cuts and free wi-fi across the streets (_-_anything is possible), and considering we can match their population with a new batch of babies every year , my money is on this turning out good .My News app tells me that the Al-Qaida are setting up a branch in India, with this , the US government has started taking a lot of interest in our tourist sections, as 6 out of the 166 people who died in Mumbai attacks were Americans, their interests are explanatory, I just don't see why the terrorists and journalists are making a big deal out of this .In all, the long tirade that the monsoon has been , it's going be an eventful year , some of you will get to travel and spend happy moments , while some of you will enjoy the rains with bumpy roads in Pune and continue swooning at cloying pictures of white pandas.

Female Engineers From History You Never Knew About !

You know who Thomas Edison and Alexander Graham Bell were, but do you know the female engineers who invented bulletproof vests to windshield wipers? Here's an interesting article which proves that beauty and brains do coexists! Meet the unsung engineering heroienes (sic) from our history.

· **Hedy Lamarr (1913-2000)**

Hedy Lamarr might be recalled as a sexy movie star of the 1930s and 1940s, however, few know that she invented a remote-controlled communications system for the U.S military during World War II. Lamarr's frequency hopping theory now serves as a basis for modern communication technology, such as Bluetooth and Wi-Fi network connections.

· **Mary Anderson (1866–1953)**

Mary Anderson invented the windshield wiper after a winter trip to New York in 1903 where she observed a driver leaving his front window open to clear falling sleet from the windshield. In November 1903 Anderson was granted her first patent for the invention of the windshield wiper. After the patent to her wiper expired in 1920 and with the growth of the automobile market, auto manufacturers adopted Anderson's basic design of the wiper into their standard equipment.

NANO - THE FINE LINE BETWEEN REALITY AND FICTION

RADHIKA KULKARNI T.E. DIV 'A'

Expectations always travel at higher speeds. A brief look into the history reminds us of the timelines of the past. With inventions ,we continuously underestimate the time span required from idea to their full realization . The new fields of biotechnology and Nanotechnology will be evolving for all the years left in the twenty first century.

"There is plenty of room at the bottom" Prof. Richard Feynman said in a lecture delivered at the annual meeting of APS, Caltech 29th Dec 1959.Though Prof. Feynman talked about the problem of manipulating and controlling things on a small scale, nobody has taken it seriously until 1995. The vanishing fine line between reality and fiction in Nano was first time realized by Japan with launching of Nanotechnology initiative in 1995.USA launched National Nanotechnology Initiatives(NNI) in 2000. In India "India Nano" is founded to increase the rate of commercialization of science and technology.

Microelectronics has demonstrated in some fields 'smaller is better'. Nanotechnology extends this idea to 'smallest is the best'. Nanotechnology is the engineering of functional systems at the molecular scale. Nanotechnology has brought tremendous advances in early detection of diseases. Tiny sensors are developed that can be placed in the human body through injections in the blood stream. These sensors can measure unprecedented quantities of chemical and biochemical data. The Nano engineered electronic devices have found solution for loss or partial loss of auditory ,virtual and sensory functions. Nanoparticle additives can be used in sunscreen and cosmetics to protect our skin against UV rays and in bio-sensors for military applications. Few more uses of Nanomaterials are in refrigeration, air-purifications , computers, catalysis ,burn treatment information storage ,self-cleaning window and paints and environmental remediation etc. Application of Nanomaterials in drug delivery is in progress. Though the idea of absorption of Nanoparticles through skin and eyes was fiction previously, has become a reality now.

The discovery of new analytical tools to visualize and manipulate single atom with Atomic Force Microscope, Optical Tweizers, Single Molecule Spectroscopy, Transmission Electron Microscope ,Scanning Electron Microscopy etc . have started to explore the Nanoscale work. Scientists must play a vital role in drawing a line between realistic predictions and futuristic dreams. Various probe techniques result into vanishing fine line between reality and fiction Nanoscience and Nanotechnology.
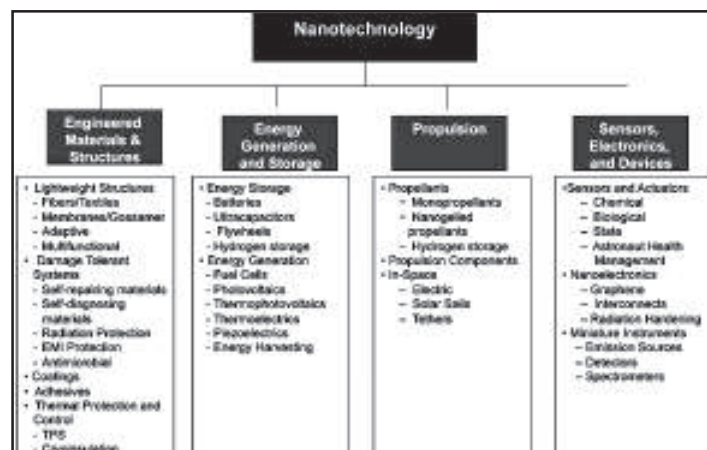
BOOK REVIEW - THE SECRET

VIDUSHI KUMARI T.E. Div'B'

The Secret is a phenomenon. Since the book debuted late in 2006, it has sold over four million copies with some thirty other translations now available or underway. It is likely to become one of the best-selling self-help books of all time and is being constantly praised and endorsed by celebrities. The book begins by introducing and explaining the mechanisms of the law of attraction, then goes on to describe its historical applications and the great men and women in history who are claimed to have harnessed its power. The book describes the law as a magnetic power emitted through one's thoughts. The power of thoughts is likened to a transmission tower that sends out a frequency to the universe and then returns the same frequency in a physical or elemental form.

Next, a three-step creative process for manifesting dreams is introduced: Ask (visualize in the film), Believe, and Receive. This creative process is based on a quote from the Bible: "And all things, whatsoever ye shall ask in prayer, believing, ye shall receive."The Secret highlights gratitude and visualization as the two most powerful processes to help manifest one's desires. It asserts that being grateful both lifts your frequency higher and affirms that you believe you will receive your desire. Visualization is said to help focus the mind to send out the clearest message to the universe. Several techniques are given for the visualization process, as well as examples of people claimed to have used it successfully to manifest their dreams.

The following chapters describe how to use the law of attraction specifically in the areas of wealth, relationships, and health. The book provides examples and ways to use the law of attraction for each. The final chapters offer a more spiritual perspective of the law of attraction, and of how it relates to one's life and the world.

The sceptic in me though does not let me to set my beliefs in that easily. The book claims that most successful people and others are aware of the secret, well everybody apart from us. The claims however are lofty: "There isn't a single thing that you cannot do with this knowledge. It doesn't matter who you are or where you are, The Secret can give you whatever you want." Imagine that: the power to get absolutely anything. Who can resist that claim? The book also has its facts wrong in several places. For example, it says that "Great thinkers including Socrates…shared it (The Secret) in their teachings and writings." All I can say is that Socrates did not know The Secret. Socrates went around Athens challenging the beliefs that people took for granted. He would have been the most sceptical critic of The Secret alive. Also, if he really practiced the secret, he probably would have not let himself be executed. The hemlock would not have killed him if he believed he could survive it.However even though there are some hiccups to it, I would say that this book can provide some excellent opportunities for stress relief, and a rough roadmap to a better life.

All this been said we cannot ignore the fact that while the Law of Attraction is getting quite a bit of publicity these days, the concept has been around for centuries and has been known

(and used successfully) by great minds throughout history. The Law will respond to this and your attraction vibration will be the opposite of what you want. By over-stretching yourself you will get negative thoughts and feelings about your goal. But by setting realistic goals, that do still stretch you, you can fully utilize the Law of Attraction to your advantage.

One key element of the Law of Attraction is that you always get more of what you focus on. Placing your attention on certain things consistently makes them grow and expand. So, by setting goals and working a plan to achieve it you are actually focusing your energy, thoughts and emotions towards that of the desired objective. By having set time-limits for the achievement of each step of your goal and the goal itself your thoughts, energy and feelings are also focused in that direction. Thus you are following one of the fundamental rules

of the Law of Attraction – what you put our attention on expands.

The key is to always remain focused on the goal itself and not on the lack of it! You must also ensure you do not get frustrated if it appears that you may not reach your goal in the time-limit you specified. These are draw-backs of goal-setting as far as the Law of Attraction is concerned. However, they can be over-come.Thus even though there are some hiccups to it, I would say that this book can provide some excellent opportunities for stress relief, and a rough roadmap to a better life.

Fragments of a Great Secret have been found in the oral traditions, in literature, in religions and philosophies throughout the centuries. For the first time, all the pieces of The Secret come together in an incredible revelation that will be life-transforming for all who experience it.

In this book, you'll learn how to use The Secret in every aspect of your life — money, health, relationships, happiness, and in every interaction you have in the world. You'll begin to understand the hidden, untapped power that's within you, and this revelation can bring joy to every aspect of your life.

The book shares other insights and specific strategies to use, gives a history of the use of the Law of Attraction, and provides examples on how it's worked in the lives of various people, making it an interesting and informative read.

Countless thousands of people have found the principles espoused in The Secret to be life-changing. Many people have found it to provide significant relief from stress in that it can provide the reader with more of an internal control, positive attitude and clarification of goals.
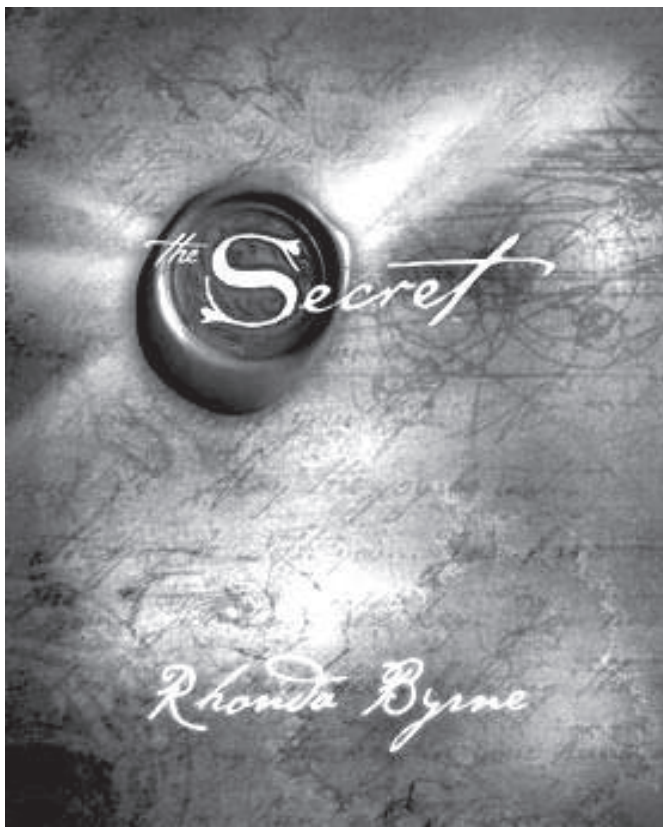
REPORT - VISIT TO GMRT

A visit to the Giant Metrewave Radio Telescope (GMRT) observatory, Khodad was arranged for the Final year E&Tc students on 1st&8th of August 2014 . The GMRT, which is the world's most powerful telescope operating at low radio frequencies, was built and is being operated by the National Centre for Radio Astrophysics (NCRA) of the Tata Institute of Fundamental Research (TIFR).

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

NCRA has set up a unique facility for radio astronomical research using the metre wavelengths of the EM spectrum using an array of radio telescopes. At the time it was built it was the largest interferometric array.The GMRT consists of 30 fully steerable gigantic parabolic dishes each 45m in diameter spread over a distance of 25 km arranged along the three arms of the shape of the letter 'Y'. The metre wavelength spectrum is particularly chosen because man made radio interference is considerably low in this range.

Some of the questions posed by the students were regarding motion of the antennae and the types of feeds for each. There are antenna feeds at six different frequency bands between 50 MHz and 1500 MHz viz.50, 153, 235, 327, 610 and 1420 MHz, having good polarization characteristics as well as simultaneous multiband operation.Each antenna has servo motors for movement in both horizontal and vertical direction. . The elevation drive moves antenna up and down directions while azimuth drive moves antenna in clockwise & counter-clockwise direction. Hence enabling the antenna to point anywhere in the sky.

We enquired about the criteria for site selection, whether any particular aspects were considered.The site for GMRT, about 10 km east of Narayangaon town on the Pune-Nashik highway, was selected after an extensive search in many parts of India, considering several important 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.

The construction of 30 large dishes at a relatively small cost has been possible due to an important technological breakthrough achieved by Indian Scientists and Engineers in the design of light-weight, low-cost dishes. The design is based on what is being called the **'SMART'** concept - for **S**tretch **M**esh **A**ttached to **R**ope **T**russes.

Optical fibres link the entire array with the Central Electronics Building(CEB). These are used both for the telemetry signals and local oscillator phase reference communication between the CEB and each antenna base.

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 HII regions, galaxies, pulsars, supernovae, and sun and solar winds.

AN INSIGHT INTO INDUSTRIAL APPLICATIONS OF IMAGE PROCESSING

It was a regular day at college, attending lectures & practicals when a notice arrived for a guest lecture on Image processing, and instantly the day became interesting, having everyone beaming and all smiles as it meant a break from the banal schedule. We all hurriedly gathered in the auditorium at the stipulated time for an hour of an interesting session on one of our favourite subjects. The speaker for the day was Mr. Amit Nahar from IFM Engineering Pvt Ltd. Mr. Nahar was a no frills person and that put us all to ease as soon as the session started. He introduced us to his company and the kind of projects that they have been pursuing. The very first project discussed was that of human detection. Human detection has a significant importance in cases where one has to park a car in a garage having a slope wherein the back mirror gives a limited range of sight or also when due to heavy rain or fog, the driver might find it difficult to spot pedestrians on the road. They had come up with an effective way to detect human movement where image processing played a crucial role. He presented all the blocks in detail that were combined to come up with a reliable system. This was made effective with the use of videos showing different stages of their project and how they overcame the obstacles faced. His clarity of thought and use of simple words to explain such a detailed concept helped students like us understand better.

The way things were explained showed the vast knowledge the speaker had and also made us realise that experience is the best teacher. The second interesting project he discussed was hand movement recognition which has been implemented in few of the smart televisions. The videos made us understand the actual usage of the technology and also provided us a variety of ideas which we could work on. One of the most fun videos was that of air writing technology which showed how a sensor could track the motion of the user's finger and display what the user wrote in air. All these concepts where discussed in detail along with the platforms they were implemented on such as CPLDs or FPGAs making them much closer to what we are currently learning. This definitely gave us the confidence that we too could work on such ideas and bring out desirable results.

The final project discussed was that of an unmanned plane which was fitted with a sensor that captured images and those images could be retrieved once the plane returned. This had a very useful application in the defence sector where many precious lives were lost in process of gathering confidential information. All the projects discussed grew from simple ideas but had a very significant usage in the industry. The most beautiful aspect of this session was that the speaker gave out a bunch of valuable ideas that we as engineering students could work on as a part of our projects. He also urged us get our hands dirty at this stage where we had the time and liberty to make mistakes and learn from them. All in all it was a very informative session and we all had a renewed vigour and a bag full of wonderful ideas to take back with us.

PROJECT SYNOPSIS

1) HUMAN DETECTION USING FAR INFRARED IMAGES FOR SECURITY PURPOSE

ISHA AGARWAL T.E. Div 'A'

The project on the topic "Human Detection using far infrared images for security purpose" developed by Renuka Avhad ,Varada Gholap, Sayali Nawarkar won the 1st prize in the final year Project competiton with 'Image Processing' as their area of work using softwares 'Matlab,Python and Open CV'.

They have used a shape independent pedestrian detection method and segmentation algorithm to capture statistical similarities of image patches containing pedestrians with different poses.The pedestrian detection system is neither based on tracking nor does it depend on camera calibration to determine the relationship between an objects height and its vertical image locations. The pedestrian detection system is straight forward and provides encouraging results in improving speed, reliability and simplicity. The main objective of their project was to detect the human figures by identifying their body contours in darkness and other such adverse conditions by means of the IR energy emitted by these bodies. This can be used for defense purpose in military areas and also for the protection of pedestrians. A typical application of thermal imaging is border security where most threats occur at night. Knowing how far you can see with the thermal imaging camera and at what distance you can detect a possible threat is of utmost importance.

BLOCK DIAGRAM :
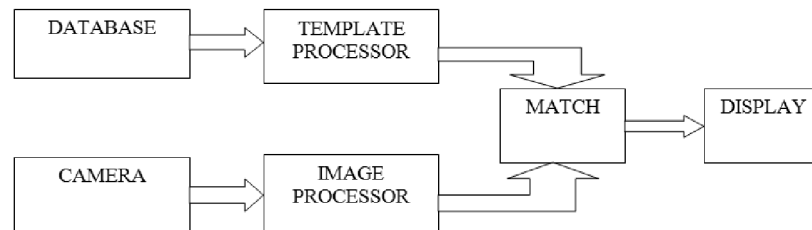
DATABASE :

It is a collection of templates that is predefined by the user and is set as a benchmark for matching purposes. It is an organized collection of data. The data is typically organized to model relevant information.

TEMPLATE PROCESSOR :

The statistical characteristics (mean,deviation,etc.) for the templates are calculated using this block. The required formulae and mathematical tables are stored in the processor.

CAMERA :

The thermal camera captures the required images in the infrared region by sensing the difference in the temperatures of the pedestrians and the environment.

IMAGE PROCESSOR :

The horizontal segmentation including projection based pedestrian horizontal region search and brightness and bodyline based pedestrian vertical region search that constitutes the region of interest is mapped by this block.

MATCHING :

The statistical characteristics of the user defined template and the captured image are compared and matched to form the output infrared image.

Shape-Independent Method:

Ø The algorithm can automatically estimate the horizontal location of candidate pedestrian regions to avoid brute force multiscale searching. The novel classification-feature vectors can characterize the statistical similarity of multiple pedestrian regions with different poses and also can capture the statistical differences between pedestrian and nonpedestrian regions in infrared images

Ø The method focuses on improving combined segmentation/classification systems and balances the complexity and performance of two subsystems instead of maximizing one process while sacrificing the other.

Ø The segmentation procedure is robust to threshold choices.The algorithm does not make constraining assumptions for background (for example, flatroads).

FUTURE SCOPE :

Multiple cameras can be used for this application with the said technique. Even though the use of multiple thermal cameras is not very economical, the use of webcams or external cameras can be done for the purpose of covering a large area over which surveillance is necessary. Larger area can be thus surveyed at a time. Further, the IR imaging technology can be used for the purpose of calculating the distance of space bodies and also keep a tab on the positions and movements of various astrological bodies.

2) COLOUR IMAGE STEGANOGRAPHY

JUI WASADE T.E. Div 'B'

This project was done by Nikumbh Akshaya, Padhar Snehal and Panvelkar Aditi. Keeping in mind the current scenario of increased use of internet security of transmitted data it is important to send the data in more secure way so that the actual information will not be understood by hacker. So in concern with present scenario the topic "Cryptography and Steganography" was chosen by them.

DEFINITION AND APPLICATIONS:

Cryptography is the science of secret writing. Krypto means hidden and graphein means writing. It is used in various aspects in information security such as data confidentiality, data integrity and authentication. Steganography is the art of sending information in such a way that no one apart from the sender and the recipient knows about it. Applications of Steganography are Confidential Communication, Acces Control System and Media Database System and Protection of data alteration. The advantage of Steganography over Cryptography is that messages do not attract attention to themselves. Steganograhy protects both messages and communication parties.

SYSTEM BLOCK DIAGRAM:
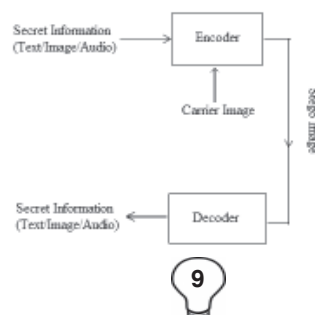
COLOUR IMAGING:

Basic of colour imaging are pixels and each pixel is represented by 24 bits. It is usually stored in memory as two dimensional format of three different planes. RGB model represents color model in Cartesian coordinate system. Out of 24 bits each 8 bit contains red, green and blue sequentially. We can divide image in 3 different planes each representing contents of each color and varying intensity.

LSB REPLACEMENT METHOD AND ITS ALGORITHMS:

For implementation of steganographic algorithms **LSB replacement method** is used.
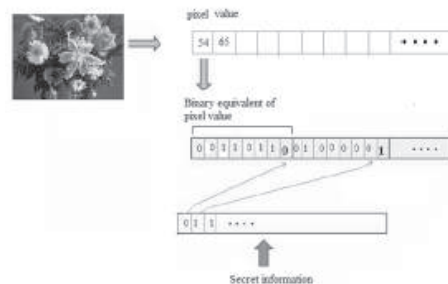
LSB REPLACEMENT ALGORITGHM:

Depending on the input the 5 basic algorithms used in this technique are: Text in Image, Image in Image, Image in Image (DCT based), Image in Image (Wavelet Transform Based) and Audio in Image steganography. In each technique the input image and carrier image both are read and separated into RGB plane. For both text in image and image in image the input is converted into binary format. In Image (using DCT) discrete cosine transform is used in frequency domain by using cosine as basis, similarly for Wavelet method time- frequency- transform is used. Even audio messages can be steganograph by taking samples of audio signal. These samples are subsequently converted in binary equivalent. In this way the different strings composed in various techniques are replaced at lsb positions of pixels of carrier image to give a 3D encoded image. As shown in block diagram the encoded image is further decoded by separating image into RGB plane again and converting strings into characters to get back the original image. To add to more accuracy, diverse analysis both subjective and objective is carried out. Subjective analysis parameters are comparison of carrier and stegano image, histogram analysis and evaluation of secret image. Whereas objective analysis consists of calculating mean, peak signal to noise ratio and root mean square error.

CONCLUSION:

In this project the combination of cryptography and steganography was achieved by using LSB technique. So a good security was achieved and image is hardly attracted from eavesdropper by naked eye. It can be concluded that Steganography and Cryptography are the most effective technique for serial data communication.

CROSSWORD ANSWERS

ACROSS : 1. Sahara 5. Java 7. hindrance 9. vote 10. courteous 12. Pharoah 14. zeal 16. tangent 17. Macbeth

DOWN : 2. hydrophobia 3. fencing 4. Smurfs 6. acrobat 8. binary 11. Jupiter 13. blunder 15. atom

DEPARTMENTAL ACTIVITIES

With the cooperation of the staff and students, the department conducted following events:

Ø **Guest Lectures Organized:**

1. A lecture by Mr. Deepak Karanjikar and Mr. Abhay Jabde, Daytron Systems was arranged on the topic 'Motor friendly or Human friendly', on 06-08-14.

2. A guest lecture on the topic Image Processing on FPGA- by Mr. Amit Nahar (IFM Engineering) was arranged on 13th Sept. 2014. This activity was coordinated by Prof. Pathak and Prof. Dewasthale.

Ø **Workshops / Seminars / Project Exhibitions Organized:**

1. Inauguration of 'KPIT Sparkle' was organized in Sept. 2014. it is an intercollegiate Project Design Ideas National Level Competition- open for students of all engineering branches. Prizes of worth Rs. 10 Lakhs will be distributed. The first round of the presentations will be conducted in Feb 2015. This event was coordinated by Prof. A. S. Patil.

2. Electronics and Embedded Design Workshop on PIC18 Microcontroller was arranged for third year students by Prof. Palan. This workshop was conducted by Mr. Amit Rana, Director, Vidya Technology Solutions, Aurangabad, during 22nd Sept to 30th Sept. 2014. A total of 170 students participated in the workshop.

3. Faculty orientation workshop on the subject ITCT, for T.E. ENTC (Revised Syllabus) was arranged under the aegis of BOS Electronics, Pune University, from 11th -13th Dec 2014.

Industrial Visits Organized:

Company Name	No. of Students	Date	Faculty accompanying	Visit Co-ordinator
Vishay Components Pvt. Ltd, Loni Kalbhor, Pune.	45 (SE: A, B, C)	6/9/2014	Prof. N. D. Kulkarni Prof. E. Karunakumari	Prof. Ravikant Suryawanshi
Giant Meterwave Radio Telescope (GMRT), Khodad, Narayangaon.	145 (BE: A & B)	1/8/2014	Prof. A. R. Khedkar Prof. M. K. Pote Prof. H. V. Khedlekar Prof. Vidya Sisale Prof. Vinayak Shinde Prof. Ravikant Suryawanshi	Prof. A. R. Khedkar
	66 (BE: Div C)	8/8/2014	Prof. S. S. Vanarase Prof. A. S. Khade Prof. M. M. Devasthale Prof. Sonal Patel	

∅   **Report on ITCT Faculty Orientation Workshop**

Department of Electronics and Telecommunication organized Faculty Orientation Workshop on TE (E&TC) Revised Syllabus 2012 Course under the aegis of BoS Electronics, Savitribai Phule Pune University during 11th December to 13th December 2014. The objective of this workshop was to orient the entire faculty towards the revised syllabus of TE (E&TC/Elex) for the subject of Information Theory and Coding Techniques and to bring in uniformity in teaching across all the colleges under the Savitribai Phule Pune University. It was rightly initiated and encouraged by BoS Chairmen Dr. D S Bormane and the BoS members. Following resourse persons were invited for the workshop: Dr. P. Mukherji (CCOEW), Prof. G.R Patil (AIT), Prof. Deepa Reddy (PICT), Dr. Suvarna Patil (BVCOEW), Dr. A.V Kulkarni (DYPCOE,Pimpri) and Prof. Sharada N. Ohatkar (CCOEW). This workshop attracted 88 teaching staff members as participants from various engineering colleges under SPPU.

The workshop was conducted in two sessions of three hours each day for three days on 11th to 13th December 2014. I would like to place on record my appreciation and gratitude towards Chairmen of Managing committee Shri Vishwas Deval, Principal Dr. M.B Khambete, Head of Department Dr. P. Mukerji for their continuous support and encouragement in conducting this workshop. I am also grateful to all department colleagues for their untiring efforts in making this workshop a grand success.

Prof. Sharada Ohatkar
Coordinator of ITCT Workshop, E & TC Department

➢   **The Details of Department Faculty Invited As Resource Person For Workshops/ Seminars/ Conferences are as follows:**

1. Dr. P. Mukherji :
· Invited as Session Chair for International conference on 05/04/2014 at SITS Narhe.
· Invited as guest lecturer to deliver a lecture on the topic "1G – 4G" at Rotary Club.
· Invited as guest lecturer to deliver a lecture on the topic "Laplace Transform" at IOIT.
· Invited to deliver a lecture at Faculty Orientation Workshop for TE (E&TC) revised syllabus-2012 course for subject ITCT on 11th Dec -13th Dec 2014 at CCOEW.

2. Prof. P. V. S. Shastry :
· Elected as Executive Member for IETE Pune Chapter.
· Invited as Expert Judge for WITCHAR -14 (National level Technical Symposium) on 23rd March 2014 at WIT, Solapur.
· Invited as guest lecturer for "Future VLSI Materials and Fabrication Technology" on 11 September 2014 at MIT, Pune.
· Invited as guest lecturer for "Digital CMOS Design" on 15th September 2014 at SAE, Kondhwa.

3. Prof. S. N. Ohatkar :
Invited to deliver a lecture at Faculty Orientation Workshop for TE (E&TC) 11th Dec -13th Dec 2014 for subject ITCT at CCOEW during 12th June -14th June 2014.

4. Prof. N. G. Palan :
Invited to deliver a lecture at Faculty Orientation Workshop for TE (E&TC) 11th Dec -13th Dec 2014 for subject Embedded Systems at NBN Sinhgad during 12th June -14th June 2014 at MMCOE.

5. Prof M. A. Dixit :
Invited to deliver a lecture at Faculty Orientation Workshop TE (E&TC) revised syllabus- 2012 course for subject SPOS on 12th June -14th June 2014 at MMCOE.

6. Prof. A. Fukane :
Working as Technical committee member for "IEEE's 2nd international conference on Machine Intelligence Research & Advancement –ICMIRA 2014 on 29th Nov & 1st dec 2014 at Shri Mata Vaishnodevi University Katra Jammu 2014.

● **The Details of Papers Presented by Staff Members are as follows:**

Sr. No.	Name of the staff	Title of the Paper	Name of the Journal	Year
1	Prof. P. V. S. Shastry	Performance Enhancement Using Synchronous Elastic Circuits	International Journal of computer Technology And Electronics Engineering VOL 4 Issue- 3 June 2014 June 2014	June 2014
		Implementation of AES encryption and decryption using T boxes on FPGA	International Journal of computer Technology And Electronics Engineering VOL 4 Issue- 3 June 2014	June 2014
		AES -128 Key Expansion with LUT and OTF S-BOX	International Journal of computer Technology And Electronics Engineering VOL 4 Issue- 3 June 2014	June 2014
		Synchronous Elastic Circuits with Higher Throughput at Reduced Area and Power	International Journal of computer Technology And Electronics Engineering VOL l2 Issue- 6 June 2014 June 2014	June 2014
		Algorithm for determining most qualified nodes for improvement in testability.	International journal on computer Technology and application Vol5 ISS5page 1641-1645 2014	Sept 2014
		Filed a Indian Patent on the topic 'System and method for Implementation of Advanced Encryption Standard Algorithm using Systolic Architecture'. Application no: 3137/MUM/2014 dated 1st Oct 2014.		
2	Prof. A. S. Patil	Comparison of features of EEG Signals for different emotions	ICEECE Pune	4th May 2014
		Comparison of Statistical parameters of fMRI Images of Brain for the purpose of Analysis of Emotions	Published in IET ONLINE	

● **The Details of Papers Presented by Staff Members are as follows:**

Sr. No.	Name of the staff	Title of the Paper	Name of the Journal	Year
3	Prof B. V. Pathak	Conversion of Emotion in Speech Signal using DWT & Adaptive Filtering.	ICEECE organized by IRAJ Journal	1st June 2014
		Emotion Transformation from Neutral to 3 Emotions of Speech Signal using DWT and Adaptive Filtering Techniques	11th IEEE India Conferences INDICON 2014 Yashada, Pune, India.Paper will appear in IEEE Explore	11th to 13th Dec 2014
4	Prof. S. N. Ohatkar	An Approach for Interface Reduction in Cellular Network	11th National Conference on Wireless and Optical communication network WOCON 2014 at Vijaywada, Andra Pradesh	11-13 Sept 2014
		Design and Simulation of Software Defined Radio using MATLAB SIMULINK	11th National Conference on Wireless and Optical communication network WOCON 2014 at Vijaywada Andra Pradesh	11-18 Sept 2014
		Optimization Technique for Efficient Channel Allocation in Cellular Network	Springer Journal,SCI Indexed Journal of Communication Technology and Electronics ISSN:1064-2269 VOL 59,pp 1225-1233	Nov 2014
		Modulation Techniques for Software Defined Radio	International Journal for Scientific Journal and Education VOL 2, ISSUE 9, pages 1948-1957 ISSN:2321-7545	September 2014
		Perfomance of spatial multiplexing Diversity and Combined Technique for MIMO-OFDM System	International Journal of Mobile Network Communications & Telecommunication & Telematics VOL 4, No 5	October 2014

● **The Details of Papers Presented by Staff Members are as follows:**

Sr. No.	Name of the staff	Title of the Paper	Name of the Journal	Year
5	Prof. S. R. Choudhary	BER Performance Analysis of MIMO-OFDM System using different equalization techniques	2014 International conference on advanced communication control and computing Technologies(ICACCCT) at Syed Ammal Engineering College Ramathapuram , Tamilnadu India published in IEEE Xplore	8th - 10th May 2014
6	Prof. A. R. Khedkar	ICI Cancellation using Raised Cosine Windowing in OFDM System	11th IEEE India Conference "INDICON" 2014 held at Yashada Pune	11th -13th Dec 2014
		Behavioral Analysis of OFDM Transmission to the variations in Doppler Shift for Flat Frequency Faded Multiple Channel	Published in IETE National Journal of Innovation & Research Volume II, Issue I	June - 2014
7	Prof. M. S. Joshi	Extraction of Feature Vectors for Analysis of Musical Instruments	International Conference on advances in Electronics, Computers & communication (IEEE conference ID:32069) sponsored by IEEE Computer Society Consumer Electronics Society & IEEE Bangalore Section held at Reva University Bangalore	10th October 2014
		Extraction of Feature Vectors for Analysis of Musical Instruments	International Conference on advances in Electronics, Computer Science and Mechanical Engineering 'ICEECSME' at Pune	29th June 2014
8	Prof. M. M. Dewasthale	Improved NLMS Algorithm with Fixed Step Size & Filter Length using Weight Updation for Acoustic Noise Cancellation	11th IEEE India Conference "INDICON" 2014 held at Yashada Pune	11-12 Dec 2014
9	Prof. Sonal Patel	A Reliable Low Cost Power Electronics Interface for Photovoltaic Energy Systems	Science Direct Journal of Solar Energy, Volume Journal of Solar Energy, Volume 108,Pg 370-376	October 2014

● **The Details of Various Faculty Development Programs, Workshops and Conferences Attended by Staff Members are as follows:**

Sr. No.	Name of the staff	Title / subject	Seminar Conference Workshop STTP	Duration/ Date	Venue
1.	Prof. P. V. S. Shastry	INUP –Famillarization workshop on Nanofabrication Technologies	Workshop	26th-28th May 2014	IIT ,Mumbai
		INUP –Famillarization hands on training workshop on Nanofabrication Technologies	Workshop	21-26 July 2014	IIT ,Mumbai
2.	Prof S. N. Ohatkar	'Next Generation Internet' at Eleventh International Conference on Wireless and Optical Communications Networks(WOCN) 2014	Conference	11-13 sept 2014	Vijayvada Andhra Pradesh
3.	Prof. M. A. Dixit	Faculty Orientation workshop for SPOS	Workshop	12th -14 June2014	MMCOE Pune
4.	Prof S. G. Dube	Faculty Orientation workshop for Microcontroller application	Workshop	12th -14th June2014	MIT Pune
5.	Prof. M V Pathade	National level FDP on Statistics For Engineers	FDP	4th -6th Dec 2014	CCOEW, Pune
6.	Prof. Mahesh Pote	Two week ICTE workshop on computer programming (one week of equivalent work completed online)	Workshop	20th May-21st June 2014	IIT Bombay
		National level FDP on Statistics For Engineers	FDP	4th -6th Dec 2014	CCOEW, Pune
7.	Prof. G. R. Padalkar	Effective English for Engineering Expert	TEQIP FDP	12th May-16 May 2014	COE,Pune
		Faculty Orientation workshop on Electro magnetic & Transmission Lines	Workshop	12th -14th June 2014	K J COE & Management & research Pisoli Pune
		Nanomaterial Characterization and Application in Device	TEQIP FDP	7th-11th April 2014	COE,Pune

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Sr. No.	Name of the staff	Title / subject	Seminar Conference Workshop STTP	Duration/ Date	Venue
8.	Prof. M. S. Patankar	Faculty Orientation workshop on subject Electromagnetic & Transmission Lines	Workshop	12th -14th June 2014	K J COE & Management & research Pisoli Pune
9.	Prof. V. A. Sisale	Faculty Orientation workshop on ESED	Workshop	12th -14th June 2014	VIIT, Kondhva Pune
10.	Prof. S. A. Potadar	Faculty Orientation workshop on ESED	Workshop	12th -14th June 2014	VIIT, Kondhva Pune
		Faculty Orientation workshop on ITCT		11th-13th Dec 2014	CCOEW, Pune
11.	Prof. S. S. Vanarase	Trends In Audio &Video Engineering organized by IETE and Sinhagad College of Engg	FDP	9th -13th June2014	Sinhagad College of Engg, Pune
12.	Prof. Rupali Pawar	Hands on Approach on Wireless Communication	TEQIP FDP	5th - 9th May 2014	COEP, Pune
		Two week ISTE workshop on control system.	Workshop	2nd-12th Dec 2014	COEP, Pune organized by IIT, Kharagpur
		Faculty Orientation work shop on ITCT		11th-13th Dec 2014	CCOEW, Pune
13.	Prof. Prachi Waghmare	Faculty Orientation workshop on Digital Communication	Workshop	12th -14 June 2014	MES Colleg eof Engineering
14.	Prof R R Borhade	Future trends in Communication	Workshop	8-12 Dec 2014	MITCOE
15.	Prof Sonal Patel	Faculty Orientation workshop for SPOS	Workshop	12th -14 June 2014	MMCOE Pune
		Faculty Orientation Workshop for Power Electronics	Workshop	11th-13th Dec 2014	RSCOE, Pune
16.	Prof. H. V. Khedlekar	Hands on Approach on Wireless Communication	TEQIP FDP	5th - 9th May 2014	COEP, Pune

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Sr. No.	Name of the staff	Title / subject	Seminar Conference Workshop STTP	Duration/ Date	Venue
17.	Prof. T. S. Kadam	Hands on Approach on Wireless Communication	TEQIP FDP	5th - 9th May 2014	COEP, Pune
		STTP on "Emerging Challenge For Technocrafts In Digital Signal Processing"	FDP	2nd to 7th June 2014	AISSMS IOIT
		Faculty Orientation workshop on Embedded Processor	Workshop	11th-13th December 2014	NBN School of Engg , Ambegaon
18.	Prof. Ravikant Suryawanshi	Two week ISTE workshop on control system.	Workshop	2nd-12th Dec 2014	COEP, Pune organized by IIT, Kharagpur
19.	Prof Anuradha Fukane	Faculty Orientation workshop for Digital Communication	Workshop	12th -14 June 2014	MES College of Engineering
20.	Prof. Ruta Sahasrabudhe	Faculty Development program for TE on System Programming and Operating System	FDP	12th -14th June 2014	MMCOE
		Faculty Development program on Industrial Management	FDP	11th-13th Dec 2014	RSCOE
21.	Prof. Preeti Shenolikar	Faculty Orientation workshop for EMB	Workshop	11th-13th December	NBN Ambegaon

STUDENTS' ACHIEVEMENTS

Heartiest Congradgulations

Rankers of academic year 2013 -14

SE **Jayasri S** **84.33%**	**TE** **Anuja Jakhade** **74.13%**	**BE** **Rucha Deshpande** **76.40%**

RANK	NAME	% MARKS
	SECOND YEAR	
1	Jayasri S	84.33%
2	Kundu Lawani Nanda	80.20%
3	Katneshwarkar Sayali Sham	79.13%
4	Jadhav Vishakha Dyaneshwar	79.07%
5	Mitha Tanzeela Haroon	79%
6	Mali Pooja Krishnat	78.87%
	THIRD YEAR	
1	Jakhade Anuja Arun	74.13%
2	Paranjape Ankita Abhijeet	71.60%
3	Rahudkar Sonal Ramchandra	71.20%
4	Gargi Bhandari	69.20%
4	Yeshaswi Meghmalani	69.20%
5	Samruddhi Kulkarni	68.33%
	FINAL YEAR	
1	Deshpande Rucha Sudhakar	76.40%
2	Shampa Nandakumar Shevade	75.47%
3	Aher Rupali Narayan	75%
4	Mukherjee Ritika Chandra	74.80%
5	Ugare Shweta Deepak	73.4%

Cultural Achievements

Kavita Shah, Prajakta Mangave, Roshani Pawar won 1st prize at Intercollegiate group dance competition at BMCC

Prizes won in Paper Presentations

- Isha Arun of TE won 1st prize in Paper presentation at D.Y Patil COE 14.
- Roshani Pawar, Ashwini Shinde Prajakta Lonkar of BE won 2nd prize in Paper presentation at PVG titled
- 'Implementation of TFT display with touch-screen interfacing to cortex-M4'

Prizes won in Technical Competitions

- Manisha Sharma and Jayasri S. won 3rd prize in Concepts and Impetous at PICT March 14
- Neha Shinde and Roshni Pawar of BE won 1st prize in Sim it circuit design competition at PVG
- Yeshaswi Meghmalani, Madhura Kulkarni, Mitali Mahajan, Disha Gangopadhyay were announced Winners of NICE – Nurturing
- Intelligence for Curious Engineers, an IET event held at K.J Somaiya College.
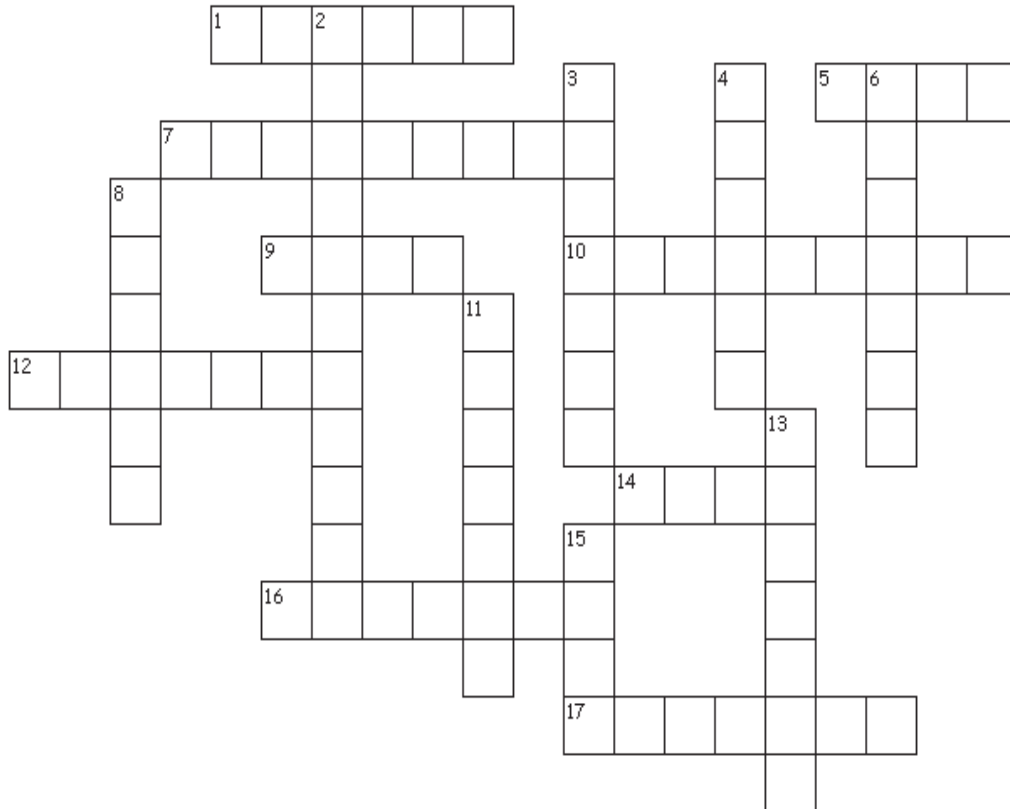- Priyadarshini Ghorpade Won the Persistent Foundation Girls Scholarship worth Rs 25,000 per year

Sports Achievements

- Ayushi Gupta was awarded the 1st prize Top scorer in Basketball at MIT Summit Inter engineering Meet
- Prajakta Mangave won the 2nd prize in COEP Zest and Pentacle as part of the Kho-Kho team
- Shrutika Jaiswal Won 1st prize in Football- Pune University Tournaments, COEP Zest, AIT Tesla Sports Meets.
- Prerana Chavan Won 1st prize in Volleyball- Pune University Tournaments and COEP Zest Sports Meet
- Kalyani Oak Won 3 gold and 3 silver in Swimming at MIT Summit Inter engineering Meet and Pune University Tournaments respectively

CROSSWORD

Across

1. Largest desert of all
5. A programming language used in certain Web applets
7. Something that obstructs or delays progress
9. Express one's opinion by ballot
10. Showing good manners
12. 'Great house' ruler of Egypt
14. Great enthusiasm;
16. Line that touches a curve in exactly one point
17. Shakespeare's classic

Down

2. Fear of water
3. The sport of fighting with long thin swords
4. Little blue people with white hats
6. Person who performs physical acts
8. A number that is expressed using 1 and 0
11. The largest planet in the solar system
13. Stupid or careless mistake
15. The smallest unit of all matter

Guest Lecture by Mr. Deepak Karanjikar and Mr. Abhay Jabde

Final Year Students' Industrial Visit to GMRT

Faculty Orientation Workshop on ITCT - Dec 2014