



# COMPLIT

*On the edge of Perfection..!*



*" Lets take decision to value our nation.. Don't forget those sacrifices, Who gave us freedom.. Now its out turn to have a Reformation...!"*

## About Department

Computer Engineering Department had been started in 2008, with intake of 60. Our department has 6 well-equipped laboratories. We have established the association "COMPIT" in which we conduct various activities like Quiz competition, Power point presentation, Blind C, Poster presentation, LAN gaming etc. Our department has organized various expert lectures and workshops like Android, .NET, PHP for the overall development of students. These types of activities are arranged to get better results in academics and overall development of students.

## Message of HOD

It is our pleasure to present third News Letter "CompLit" of our department. This News Letter is the one of the ways in which we can disseminate the information about our department. The past semester was full of various activities by the students and faculty in Academic, Co-curricular and Extra-curricular activities. As you read through pages, you will realize that we have succeed in academics as well as in different co-curricular activities.

**Mrs. S. S. Bhosale**

## UPCOMING EVENTS

- Industrial Visit for Third Year students is scheduled in the month of Feb. 2017
- Industrial Visit for second Year students is scheduled in the month of Feb. 2017
- Workshop for Third year students is scheduled in the month of May 2017 on Android, .NET.
- Workshop for second year students is scheduled in the month of May 2017 on PHP.
- Parents Meet will be scheduled in the month of Feb. 2017.

## STAFF ACHIEVEMENTS

**Mr. P. S. Bhandare**  
Completed his M.E. in CSE

## Editorial

*Its our pleasure to present this second issue of COMPLIT with new design. We are thankful to all faculty members and student friends for their co-operation. We will continue the journey of learning and implementing technologies in future also.*

*Thank you all..!*

**Ms. Shivani Kulkarni**  
Student Co-ordinator  
**Mr. Sachin M. Jagdale**  
Staff Co-ordinator

## Publications

Mr. P. S. Bhandare Published paper in IJERT on  
*"Automatic face Annotation from live video streams."*

## INSIDE THIS ISSUE

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## RAIN TECHNOLOGY

RAIN technology is the most scalable software cluster technology for the Internet marketplace today. There is no limit on the size or the performance of a RAIN cluster. Within a RAIN cluster, there is no master-slave relationship or primary-secondary pairing. All nodes are active and can participate in load balancing. Any node can fail-over to any node. A RAIN cluster can tolerate multiple node failures, as long as at least one node is healthy. It employs highly efficient consistent state sharing and decision making protocols, so that the entire cluster can function as one system.

The Internet is changing the way that people manage and access information. In the last five years, the amount of traffic on the Internet has been growing at an exponential rate. The World Wide Web has evolved from a hobbyists' toy to become one of the dominating media of our society. Ecommerce has grown past adolescence and multimedia content has come of age. Communication, computation and storage are converging to reshape the lives of everyone. Looking forward, this growth will continue for some time.

### Goals of RAIN Technology

To offer the solution by minimizing the number of nodes in the chain of connecting client and server.

RAIN Technology making existing in the nodes more robust and independent of each other.

RAIN Technology provides the future of replacing a faulty node by a healthy one.

### Applications

High availability video server., High availability web server. Distributed check pointing mechanism.

**Ms. Ashwini Bramhrakshas (TY CO)**

## 5 PEN PC TECHNOLOGIES

Imagine a world where everybody can use modern without being an IT expert. Imagine using only pen and paper to send e-mail send SMS. Pen-style Personal Networking Gadget are computers in the shape of different pens each having a function of its own and when combined together give us the usage of a full-blown computer. It is a computer broken apart into pieces. At the 2003 ITU Telecom World exhibition held in Geneva, the Tokyo-based NEC Corporation displayed a conceptual \$30,000 prototype of P-ISM. It is simply a new invention in computer and it is associated with communication field. Surely this will have a great impact on the computer field.



P-ISM ("Pen-style Personal Networking Gadget Package"), which is nothing but the new discovery, which is under developing, stage by NEC Corporation. 5 Pen PC Technology is a gadget package including five functions: a pen-style cellular phone with a handwriting data input function, virtual keyboard, a very small projector, camera scanner, and personal ID key with cashless pas function. In fact, no-one expects much activity on 802.11n installations until the middle of 2008. "Rolling out 802.11n would mean a big upgrade for customers who already have full Wi-Fi coverage, and would be a complex add-on to existing wired networks, for those who haven't. Bluetooth is widely used because we can able to transfer data or make connections without wires. 5 Pen PC Technology is very effective because we can able to connect whenever we need without having wires. 5 Pen PC Technology are used at the frequency band of 2.4 GHz ISM.

**Ms. Aishwarya Kshirsagar (TY CO)**

**Ms. Nikita Gaikwad (TY CO)**

## SPORTS

| Sr. No. | Name of Student  | Secured Prize  |
|---------|------------------|--|
| 1       | PRATIKSHA POTDAR | Winner in 100 m Running At Youth Festival Solapur    |
| 2       | PRATIKSHA POTDAR | Winner in 200 m Running At Youth Festival Solapur    |
| 3       | PRATIKSHA POTDAR | Winner in Disk Throw At Youth Festival Solapur       |
| 4       | KOMAL SHINDE     | Winner in Javelin throw at Zonal tournament          |
| 5       | KOMAL SHINDE     | Winner in Javelin throw at Youth Festival at Solapur |
| 6       | MAYUR RATHOD     | Runner Up in Chess at Youth Festival at Solapur      |

| Sr. No. | Name of Student | Secured Prize   |
|---------|-----------------|---|
| 7       | RUTUJA MOHITE   | Winner in Carom Competition conducted at Youth Festival Solapur           |
| 8       | BHAGYASHRI SONI |   |
| 9       | JYOTI SAWANT    |   |
| 10      | UMESH METKARI   | Runner Up in Project Idea Competition Conducted at Youth Festival Solapur |
| 11      | MAYUR RAHOD     |   |
| 12      | VIJAY SURVE     |   |
| 13      | SAGAR SOMASE    |   |



**AJAX:** AJAX stands for Asynchronous JavaScript and XML. It is a new technique for creating better, faster, and more interactive web applications with the help of XML, HTML, CSS and Java Script.



**SILVERLIGHT:** Microsoft Silverlight is an application framework for writing and running rich Internet applications, with features and purposes similar to those of Adobe Flash.



**OCR:** Optical Character Recognition, is a technology that enables you to convert different types of documents, such as scanned paper documents, PDF files or images captured by a digital camera into editable and searchable data.



**JAVASCRIPT:** An object-oriented computer programming language commonly used to create interactive effects within web browsers.

## DETECTING CARDIAC ARRHYTHMIA BY EXTRACTING ECG FEATURES

We are detecting the type of Arrhythmia by using ECG extraction Features, we can apply Wavelet Analysis on ECG signal and that ECG signal consist of P-QRS-T waves. We determine the amplitudes & intervals of the P-QRS-T segment for determine functioning of the heart. Apply PAN-TOMPKINS algorithm for analysis and feature extraction.

Pan-Tompkins is based on QRS complex detection. And it analyzes the slope, amplitude and width. The different steps of the algorithm are shown in fig 1. The low pass & high pass filters forms a band pass filter, which reduces noise in the signal or ECG signal. Noise is like muscle noise. For Distinguishing QRS complexes from low-frequency ECG components such as the P & T waves the signal is step is squaring operation, which



Fig. 1. Steps in Pan-Tompkins Algorithm

is to lay stress on the higher values that are mainly because of QRS complexes. Then squared signal is passes through a Moving-Window used to find QRS complexes, measure R-R intervals, & determine Integrator of length of the window  $N=30$  samples. The result is smooth peak ECG cycle. The output of the Moving-Window Integrator may be the QRS complex duration in Fig. 2R Peak and QRS complex values are very useful in ECG analysis. The main benefit of this type of detection is less time consuming.

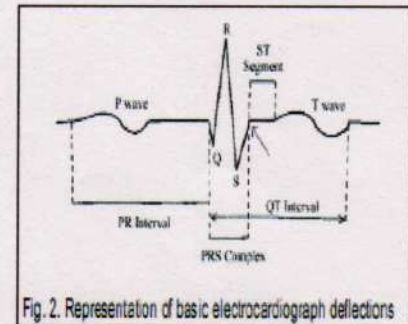


Fig. 2. Representation of basic electrocardiograph deflections

From Pan-Tompkins algorithm it is concluded that no. of QRS waves is less in arrhythmia data compared to normal person. The coefficients are plotted using DWT (Discrete Wavelet Transformation). So, our result display type of arrhythmia if any abnormal signal is found otherwise it display normal wave or signal.

Prof. Ms. B. M. Deokar

## DIGITAL TATTOO

Tired of unlocking your Moto X smart phone with a password or a PIN? Now you will be able to unlock it with a digital tattoo. Motorola said in a blog post that an average smart phone user spends 2.3 seconds to unlock their device and does this about 39 times per day. This is why many people decide not to lock their phones at all, which may expose personal data. Google's Advanced Technology and Projects (ATAP) unit worked with VivaLnk to solve this problem. The end result was a digital tattoo that can be used to unlock the Moto X smart phone. Last year, Motorola launched a similar product called Skip. Skip is a small clip that you can wear on a



belt or your pocket to unlock the Moto X, Droid Mini, Droid Ultra and Droid Max. The digital tattoo has the same function. When you tap the Moto X smart phone on the digital tattoo, it will automatically unlock without having to enter a password or PIN. The digital tattoo relies on near field communication (NFC) technology to transmit data between the tattoo and the Moto X without having to

Prof. Mr. A S. Bhise

enter a password or PIN. The nickel-sized digital tattoo is an adhesive made out of thin and flexible materials based on the VivaLnk eSkin technology. It lasts for five days and can withstand activities like showering, swimming and jogging. Silicon Valley technology company VivaLnk together with Google's Advanced Technology and Projects (ATAP) group have developed a Digital Tattoo to unlock with a simple touch your phone. One tattoo will work for 5 days. It comes with 10 Tattoos per box. Which is costing around 10\$ that means approximately 600 Rupees.

## POCKET PRINTERS

A new mobile robotic printer that is only a little bigger than three stacked hockey pucks will enable people to print anywhere and on any size page of paper.

Smart phones, tablets and laptops make it easy for people to work on the go, but traditionally, printers have been cumbersome to lug out of the office.

Zuta Labs, based in Jerusalem, reasoned that printers nowadays are essentially a print head running back and forth on a moving piece of paper. The company's approach involves placing a print head on a set of small wheels and letting it run across a sheet of paper, thus allowing printers to become smaller.

"The name 'Zuta' in ancient Aramaic means 'small,'" said Tuvia Elbaum, CEO and founder of Zuta Labs.

The new Zuta Pocket Printer is about 4 inches (10.2 centimeters) wide and long and 3 inches (7.5 cm) high, and



weighs about 12 ounces (350 grams). It can connect wirelessly to smart phones, tablets, laptops and PCs via Wi-Fi, and is supported by Android, iOS, OS X and Windows. A free app from the company lets you use the printer via a mobile device; a laptop or PC can also select the printer for use just like any other wirelessly connected printer.

To print, a person switches on the device, aligns it with the corner of a sheet of paper and sends the document to it. The printer can print one average A4 page, measuring 8.27 by 11.7 inches (21 by 29.7 cm), every 50 to 60 seconds with a resolution of 300 dpi. Zuta Labs noted that its printer can print on any standard size piece of paper, and that, in principle, it could print on any surface, Elbaum told Live Science.

The printer's "omni-wheels" help it turn and move in any direction on a surface. Laser sensors help control the movement, speed and location of the device, according to the company.

If a person sends several pages to the device, the printer will stop when it gets to the bottom of the first page and wait until it is placed at the top of the next page. Users can then tap on the mobile app, and the printer will continue to print.

One ink cartridge can print more than 100 pages, according to the company. Currently, the device prints only in black, although Zuta Labs said it plans to have a full-color printer in the future. Cartridges are replaced via a hatch on the bottom of the printer.

The company plans to ship its printers to customers in the beginning of 2017.

**Mr. Gururaj Puranik (SY CO)**

## SWEAT SENSORS

Imagine if taking a snapshot of your health were as easy as slapping a sticker on your skin. A new study finds that a tiny adhesive sensor can read what's going on in your body based on your sweat, and relay information about your well-being wirelessly to a smart phone. This type of wearable sensor could work as an alternative to blood tests to assess people's health one day, according to the researchers.



Perspiration is a rich chemical full of molecules ranging from simple electrically charged ions to more complex proteins that can shed light on what is happening inside the human body. Doctors can use sweat to diagnose certain diseases, uncover drug use and reveal insight into athletic performance. Sweat also can be gathered far less invasively than blood, said study senior author John Rogers, a materials scientist and director of

Northwestern University's Center for Bio-Integrated Electronics in Evanston, Illinois.

In the new study, scientists embedded chemical sensors and other devices into a soft, flexible silicone rubber disc, about the size and thickness of a quarter that can easily stick to skin. The device is designed to collect and analyze sweat for key biomarkers, or markers of health. For instance, the sensor can show how people are responding to exercise, including whether someone needs to make adjustments, such as drinking more water or replenishing electrolytes

Developing various thin, soft and flexible skin-mounted devices as a next-generation platform for wearable technologies for a few years now," Rogers told Live Science.

This wearable lab contains "micro fluidics" designed to route fluids inside themselves in much the same way that microelectronics do with electrons. Specifically, the sensor directs sweat down a number of microscopic channels that are about 0.02 inches (0.5 millimeters) wide into compartments about 0.16 inches (4 mm) in diameter. Each of these chambers measures specific biomarkers, such as pH, lactate, chloride and glucose levels.

**Mr. Rutvik Namade (SY CO)**