



COMPSENSE 2014-2015

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
ST JOSEPH ENGINEERING COLLEGE , VAMANJOOR , MANGALURU



ANNUAL NEWSLETTER

VISION OF THE DEPARTMENT

To be recognized as a center of excellence in computer and allied areas with quality learning and research environment.

Editorial



Ms Nisha Jenifer Roche
Assistant Professor
Dept of CS&E, SJEC



Ms Ushadevi A
Assistant Professor
Dept of CS&E, SJEC

"The only way to do great work is to love what you do" - Steve Jobs

We are happy to launch the COMPSENSE Newsletter for this academic year. The essential purpose of COMPSENSE is to inform, engage, inspire and entertain a diverse readership including alumini, faculty, staff, students and many others by presenting an intimate, timely and honest portait of the department. Over the years, COMPSENSE Newsletter has proved to be a perfect platform to showcase all the activities and development taking place in our department. We hope that the current issue will inspire more students in the amity of their peers to participate in the various activities under the guidance of the faculty members.

We extend our heartfelt gratitude to our HOD, Dr Rio D'souza for his constant support and guidance. We would also like to thank all the staff and students of the department for contributing their articles, poems, drawings and paintings.



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Director's Message



Fr Joseph Lobo

"Small opportunities are often the beginning of great enterprise" - Demosthenes.

I am happy to note that the Computer Science and Engineering department is coming out with the current issue of a department bulletin "COMPESENSE" giving the details of the activities held during the previous semester. My appreciation and thanks to all the staff and students working as a team to bring out this newsletter.

May this newsletter inspire all the readers to recognise the outstanding potential of all the Computer Science Engineers at SJEC. Let it strengthen the networking initiatives of the department .

My best wishes to the HOD, the editorial team, COMPESENSE Newsletter co-ordinators and all the students.

Assistant Director's Message



Fr Rohith D'Costa

I am very happy to note that the Computer Science Department is bringing out its Departmental Newsletter "COMPESENSE".

I congratulate all the contributors who have shared their knowledge, experience and expertise which will help the students to enhance their knowledge and thirst for learning. We need to march towards and optimize the capabilities in bringing out innovations and creative ideas. Let's utilize our energy in building the nation and creating a better place to live.

ALL THE BEST!!!

Principal's Message



Dr Joseph Gonsalves

I am delighted to know that the Department of Computer Science and Engineering is bringing out yet another volume of newsletter "COMPSENSE". A good amount of research activities are taking place in the department under the guidance of the HOD and dedicated staff members. The students of the department have excelled in their academic performances, placements and in the conduct of various activities under the banner of "CIPHER" -The association of the students of the department.

This volume, I believe will certainly be more interesting to pursue through. I thank the contributors to the newsletter, editors, HOD, faculty and students who have strived hard to bring this issue on time.

HOD's Message



Dr Rio D'Souza

Of all the forms of informal knowledge, commonsense is the one that is most difficult for artificial intelligence to master. For commonsense is a phenomenon that is innately human. Machines will need to be substantially more sophisticated and human before they acquire commonsense.

Our departmental magazine, CompSense is a move in that direction of bringing computers into the commonsense domain. It is truly an endeavor of commitment and patience. Bringing all the event reports and various contributions together into one consistent collection is a task requiring considerable commonsense and dedication. But our team has done it, yet again! Kudos to them! And here's wishing all the readers a fun-filled, delightful journey down the memorable pathways of the year that is past.

Happy CompSense, Everyone!

CIPHER ACTIVITIES



Inauguration Of Cipher Association

The inaugural function of Cipher the Computer Science and Engineering Department association of SJEC combined with the guest lecture on "IT: Then and Now and its Entry Point Hurdles" was organized by Cipher, CSE department on August 11, 2014.

Ms Roshni Rodriguez, Cipher Association President, presented the welcome address, which was followed by the presentation of the annual report by Ms Chrystle Lobo, Secretary of Cipher. The annual report included exemplary spectrum of activities conducted in the year 2013-2014, along with the objectives for the coming year.

Mr Praveen Udupa, Founder and Technical Director of AI Logics was the chief guest. He released the Cipher magazine and addressed the gathering. He said that through associations, one's objective should be to achieve something not in the curriculum. This can be done by attending technical talks, visiting companies and by visual development.

President Rev. Fr Ajith Menezes presided over the function and in his presidential speech said that a student's life should have commitment, contribution and involvement in activities as it is for a limited period. This gives them a platform for the rest of their lives. He also added that many of



them were part of Cipher but what actually counts is how active they are. The programme concluded with the vote of thanks presented by Mr Pranav Rao, Vice President of Cipher.

Engineer's Day Celebration

As a part of the Cipher activities for the academic year 2014-2015, the final year students of CS&E staged a string of presentations for the II and III year students of the department on the 15th of September 2014, on account of Engineer's day celebrations. The presentations were based on the concepts of - Code Optimisation and Problem Solving Techniques (PST), Ethical Hacking, Massive Open Online Courses and Firefox Student Ambassador.



Live Streaming of Microsoft Talent India 2014



Cipher, the student association of the Computer Science and Engineering Department along with the Microsoft Student Associate (MSA) organized the live streaming of Microsoft Talent India 2014 on 30th September 2014. This is an annual program conducted by Microsoft India as an interaction with the students from the Information Technology field.

The key note address was delivered by Mr Satya Nadella, CEO Microsoft. He observed that multi-disciplinary approach to innovation is what the youth of India represent and that would shape and change what they do. He spoke about the importance of emotional quotient and advised the students to love what they do as that would make their work easy.

Following this was the second key note address by Hon. Minister Ms Smrithi Irani, MHRD, Government of India. She threw light on the various opportunities provided by the government to students and the plans for the coming year. This was followed by a series of talks by resource person on various topics.

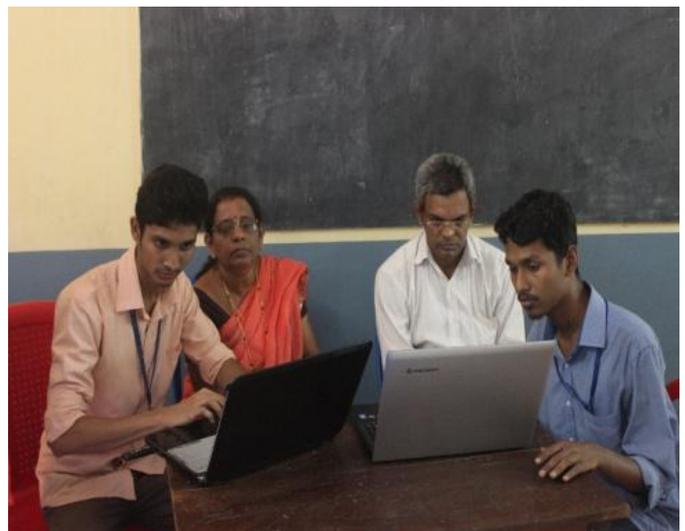


Educational Social Responsibility Programme

With the advancement of technology it has now become utmost important to have atleast the basic knowledge of computers. Hence to educate the younger generation a program known as Educational Social Responsibility (ESR) was conducted by Cipher. 25 students along with two faculty members visited Narayana Guru Primary and High School at Kudroli on the 6th of February 2015.



The main objective behind the ESR programme was to teach both the students and the faculty the basics of the internet, Microsoft Word, Excel and Power Point.



Peer-To-Peer Learning

On the 11th of February 2015, the final year students of the Department of Computer Science and Engineering conducted a demo session on Computer Graphic Visualization projects for the pre-final year students as a part of the peer-to-peer

learning process. Since the pre-final year students are required to develop a mini project in Computer Graphics and Visualisation in the 6th semester, this session was aimed at giving them a head start to their projects.



In this session, the final year students presented some of their own mini-projects, in order to give the pre-final year students a better understanding of how to go about their projects. Some of the projects that were presented included 2D animation of a rocket launch, airport scene, whereas other 2D projects that were demonstrated included academic based projects such as circuit building, refraction and also gaming such as Diego, Rabbit Hunt, Memory Game and Submarine. 3D games that were presented involved Car Race.



TIARA 2015

Computer Science and Engineering Department organized several events as part of TIARA-2015. These events were namely Code Crack, 2Fast2Furious, Game On-FIFA, Call of Duty, Lost Chambers and Papyrus. The Tech Fest TIARA-2015 was conducted on 18th and 19th of March, 2015. A total of 307 teams registered of which 43 teams were from external colleges.

2Fast2Furious

This event required the basic engineering knowledge and aimed at testing team-work, problem-solving ability, creativity skills of the team. A team comprised of exactly 4 members. This event spanned for both the days, with Round 1 to 4 on 18th and finale on 19th March, 2015.



Each team had 2 members participating in an indoor task and 2 members participating in a related outdoor task. The indoor task consisted of solving clues and finding the location, which was then forwarded to their outdoor counterparts through text messages in the proper format. The outdoor task was to collect the flag from the particular location and complete the race.

Second round consisted of guessing the words based on pictures, logos and a few famous personalities. A video was shown and questions based on the video had to be answered. Teams were provided with newspapers and had to search for some answers in the newspaper.



In the third round each team member was assigned a separate task which included solving a math puzzle, completing table, surfing some information, and another task which was to keep one member isolated from other members (stuck in a loop). Once the team member was done with his task he had to help his team mates, except the one who was kept isolated from the rest. Once the 3 tasks were completed the team had to report to complete the race.



Fourth round consisted of finding answers to complicated mathematical questions which led to certain clues. The 3 members of the team had to solve all the clues to decode the final location where they would find the 4th member of the team. Once all 4 team members met at the 'Final Destination', they had to click a 'Selfie' of themselves with the location land mark visible in the selfie.

Fifth round was split in two parts. In the first part, the teams had to build a new technology which doesn't exist using the collateral's provided and present it to the judges. The second part of this round was a rapid fire round consisting of 15 questions to be answered in 120 seconds.

Call of Duty-2015



Call Of Duty , a multiplayer-shooting gaming event, held on 19th of March 2015. There were a total of 4 rounds. This was a team event with 5 members per group.

FIFA-2015

FIFA-15, a football gaming event, was conducted on 18th and 19th of March 2015. There were a total of 7 rounds, out of which round 1 - round 3 were held on 18th and round 4, the quarter-finals, semi-finals and finals were held on 19th March 2015. The matches were projected live to enable the audience to watch it. This was an individual event.

Code Crack

This was a programming event aimed at testing the debugging and programming skills. The event consisted of 3 rounds namely the preliminary round, debugging face-off and coding.

The first round was a written test consisting of C programming and general IT questions. The teams were asked to solve 25 questions within 30 minutes.



The second round was a face-off format with task being debugging. The fixtures for the face-off were determined by drawing lots. A contestant from each team was given a piece of code which they were asked to debug within a minute. A correct answer earned them a point while a wrong answer resulted in the opponent gaining a point.

In the final round the teams were asked to code 3 programs of varying complexity.

Lost Chambers



'Lost Chambers' gave the students an opportunity to drill their logical and analytical skills with fun-filled activities. The event comprised of three rounds. The event was scheduled on 19th March 2015. The first round named 'Criss-Cross fill the Box' consisted of a general and technical crossword. This was the preliminary round that lasted for 20 minutes.



The second round had two phases: 'Link to Link' and "Crypt your Mind". The participants were given a riddle whose answer they had to find among a group of linked web pages. The answer itself was a link, which on clicking, the teams received their username and an encoded clue that took them to the next phase, 'Crypt your Mind'.

This phase required the teams to decode a given clue that gave them a location name and run to that place to get their next clue. The teams had to go to three locations and at the last location they received a set of jumbled letters which formed

their password. With the username from Link to Link and password from Crypt your Mind, the teams had to login to the webpage provided.

The final round was 'Code Hunt'. All the teams had to hunt for code snippets of a program that were scattered within different folders. The teams had to arrange the code pieces and execute the program to get a desired output. The event provided the participants with a platform to explore their hidden intellect as well as has also given them a fun-filled experience.

Papyrus15



This event aimed at testing the technical and presentation skills of the participants. The topic for the competition was 'Recent trends in Information Technology'. Teams of maximum two members were accepted. The event was held on 18th March, 2015. A total of 20 teams participated, comprising of 10 internal and 10 external college teams.

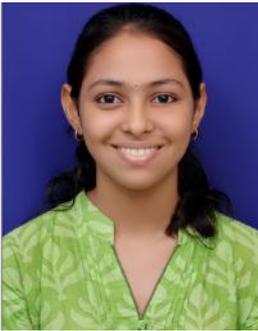


**Top Scorers for the Year
2014-2015**



The exuberant success gained by the students of the Department of CSE will always be a inspiration for the students to come .

Congratulations! You Inspire Us.....



Rashmi J Nayak
IIYEAR B.E.
80%



Yashika
II YEAR B.E.
78.6%



Kshithija Shetty
III YEAR B.E.
78.77%



Keerti Kamath K
III YEAR B.E.
83.26%



Madhura S. Bharadwaj
IV YEAR B.E.
81.1%



Carol Steffi D'Cunha
IVYEAR B.E.
80.9%



Sowmya S
I YEAR M.TECH
75.88%



Shiny Melita D'Souza
I YEAR M.TECH
74.57%

Department of Computer Science and Engineering

Annual Report 2014-2015

Papers presented by the faculty in International Conferences

1. Sujatha M, Asst Professor and Kevin Joy D'Souza, presented "DBMLE: Distance-Based Multi-Level Elliptic Routing Protocol for Ad hoc Networks", In proceedings of IEEE International Conference on Cloud Computing in Emerging Markets (CCEM), 2014, DOI: 978-1-4799-6141-2/14, Bangalore, Oct 15-17 2014.

2. Raghavendra Achar, and P. Santhi Thilagam, presented "A broker based approach for cloud provider selection", In proceedings of the IEEE International Conference on Advances in Computing, Communications and Informatics (ICACCI- 2014), pp 1252 – 1257, GCET, Greater Noida, Sept 24-27 2014.

3. Prashanth Kumar A and Prathviraj N, presented "Lifetime aware MPR Selection in OLSR for MANET", In IEEE International Conference on Electronics, Communications and Computational Engineering organized by department of Computer Science and Engineering, Adhiyamaan College of Engineering, Hosur, 17 Nov 2014.

4. Sridevi Saralaya, Rio D'Souza and Vishwas Saralaya, presented "Cross Layer Property Verification with Property Sequence Charts" in IEEE International Conference on Soft-Computing and Network Security 2015, pg. 547-552.

5. Sunitha Guruprasad, Rio D'souza, presented "Multiobjective Evolutionary Based Approaches for Intrusion Detection- A Review", Proc. International Conference On Emerging Trends in Engineering (ICETE-15), May 2015.

Conferences/ Seminars/ Workshops attended by the faculty

1. Ms Shruthi M and Ms Supreetha R, Asst. Professors attended the workshop on "Semi Graphs" at Reva Institute of Technology, Bengaluru from 6th June to 10th June 2014.

2. Mr Prathviraj N, Mr Prashanth Kumar A and Mr

Gerald Fernandes, Asst Professors attended a workshop on "Simulation of Wired & Wireless Networks (SWN-2014)" conducted by CSE Department, NITK, Surathkal from 3rd to 5th July 2014.

3. Ms Sunitha Guruprasad, Asst Professor attended a workshop on "Research Methodologies and Latex" organised by VTU e-Learning Centre, Mysore at Shree Devi Institute of Technology, Mangalore from 9th Sept to 11th Sept 2014.

4. Mr Nithin Kumar Heraje and Mr Gerald Fernandes, Asst Professors attended the Faculty Development Program on "Faculty Enablement Program (FEP) on Foundation Program 4.0" conducted by Infosys Limited, Mangaluru Development Centre from 15th Dec 2014 to 19th Dec 2014.

5. Ms Shruthi M and Ms Supreetha R, Asst Professor, attended five days faculty development programme on "Hands on training on current computing tools" at SJB Institute of Technology, Bengaluru from 27th to 31st January 2015.

6. Mr Raghavendra Achar, Asst Professor attended "Faculty Development Program on Big Data and Hadoop Framework" organized by Department of Information Science and Engineering at Acharya Institute of Technology, Bengaluru, from 28th to 30th January 2015.

7. Ms Sunitha Guruprasad, Asst Professor attended a National Level Workshop on "Network Simulation using NS-3", held at ALVA's Institute of Engineering and Technology, Moodbidri, Mangaluru on 30th Jan and 31st January, 2015.

Training Programmes arranged by the department for the students/ faculty/ others

1. The Dept of Computer Science and Engg conducted a one day workshop on "Text Processing using Latex" on 15/10/2014 for the faculty and PG Students of the Dept of Computer Science and Engineering. Ms Sridevi Saralaya was

the coordinator for the workshop and Ms Dhanyaja was the resource person. The one day workshop was a hands-on training session where both the faculty and students tried out the commands when the resource person explained .

2. The Dept of Computer Science and Engg conducted a one day workshop on "Electronic Circuits & Logic Design (ECLD) " on 20/10/2014 for teaching and technical staff of CSE & ISE departments.. Ms. Supreetha R was the coordinator for the workshop and Mr Gerald Fernandes was the resource person. Main focus was on the experiments of ECLD lab prescribed by the VTU. Workshop was inaugurated by the Vice Principal Dr. Rio D'Souza. He highlighted the importance of ECLD in the field of computers.

3. IT training by BIIT, Bejai conducted training for pre-final year students from 20th July 2015 to 25th July 2015 on IT related topics such as Web Application Developmet and Android for CSE and ISE students.

Students Achievements/Publications

1. Ms Nishitha, Ms Natya, Mr M Akhilesh Acharya, Ms Arya R K participated in India's Biggest Networking Championship – 2015 Grand Finale at IIT-Delhi on 29 March 2015, organized by I-Medita Learning Solutions (P) Limited.

2. Mr Ritesh Kumar, Ms Sunita G, Ms Rajeshwari M, "Intrusion Detection and Prevention Using Blocking and Back Tracking for IP Spoofing", Proc. International Journal of Engineering Research & Technology (IJERT), Vol.3 - Issue 3, March 2014.

3. Ms Shwetha K J, Ms Sunitha Guruprasad, "Blocking Misbehaving Users by K-Means Clustering Algorithm", Proc. International Conference On Advances in Computer and Communication Engineering (ACCE-2015), Vol.3, Special Issue 5, May 2015.

4. Ms Pooja Madhukar Nayak, Ms Sunitha Guruprasad, "An Efficient Two-Server Password Based Authentication System", Proc. International Conference On Advances in Computer & Communication Engineering (ACCE-2015), Vol.3, Special Issue 5, May 2015.

5. Ms Supriya Salian, Mr B Sunil Kumar Nayaka -

"Providing Secure Cluster Based Data Aggregation in WSN through Genetic Algorithm", in International Conference on Computer Networking and Information processing (ICCNIP-2015), Bangalore.

Notable Student's Projects

1. Contrast Enhancement and Intensity Preservation of Gray Level Images using Multi-Objective Particle Swarm Optimization.

*Anisha Corda
Delita Josna D'souza
Joyline Melita Mendonca
Shahani Natalia Mendonca*

Guide : Ms Riana Anto

Image processing is a form of signal processing for which the input is an image, such as a photograph or video frame and the output of image processing may be either an image or a set of characteristics or parameters related to the image. Images will result in dark and low clarity regions due to the unequal distribution of intensity when first captured. Contrast enhancement is a technique that is used to increase the difference in luminance or color that makes an object distinguishable.

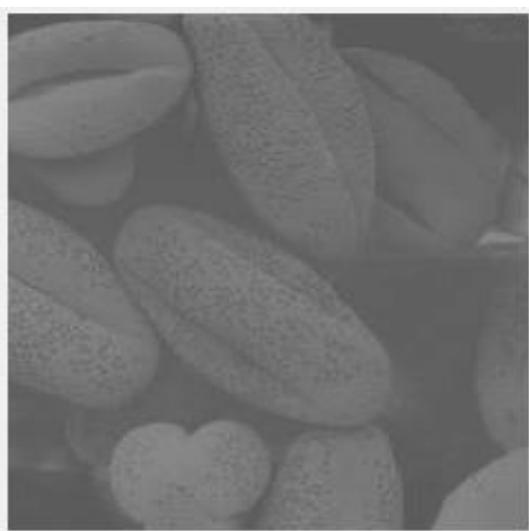
The existing works on image processing for gray-level images involves the use of single-objective technique where either the contrast is enhanced or the brightness is preserved. The use of local contrast enhancement technique resulted in washed out appearance and false contouring due to the significant change in brightness .

The project proposes a multi-objective Particle Swarm Optimization algorithm to enhance the contrast and to preserve the brightness of an image. The contrast enhancement of images is achieved by maximizing the information content carried in the image via a scale factor .The scale factor enhances the contrast of the image by adjusting the lower pixel values to the average value. Image contrast will be enhanced as long as one can make use of the whole available intensity range. Particle Swarm Optimization is then employed to find the optimal constraints in order to maximize the degree of brightness preservation. This enhancement provides better viewing consistence and effectiveness.

The results of applying this technique on different images showed that this technique can enhance simultaneously the image contrast with increasing histogram change and also retain the mean intensity in an image and as a result, can preserve visual comfort for observer.

The future work in this domain may include implementation of the proposed algorithm for color images and also to understand where the algorithm suffers in order to understand any limitations and apply it to the proper contexts. This work is applicable in the field of entertainment, healthcare, security and pattern recognition.

(a)Input Image



(b)Output Image



2. MeetYou - Locating and Communicating with People

Adish P Rao

Chrizel Raisa Machado

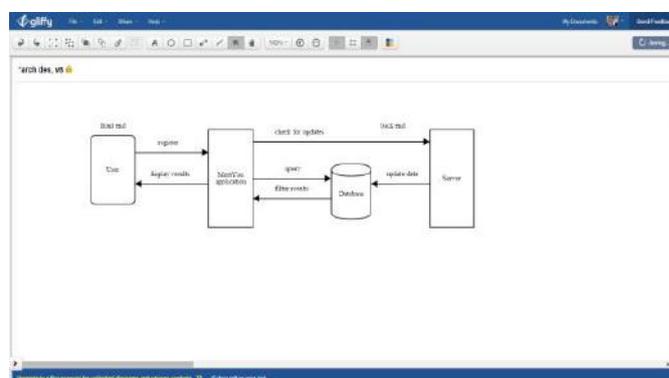
Princia Fernandes

Risheka M Chowta P

Guide: Ms Sridevi Saralaya

The MeetYou application creates a social network in which its users are notified when their friends are around. This is made possible with the help of a feature allowing the users to set location reminder for their friends. Taking into account the security of the users, the application is developed in such a way that only the phone numbers of close friends or family from the user's phone book can share location or communicate with them.

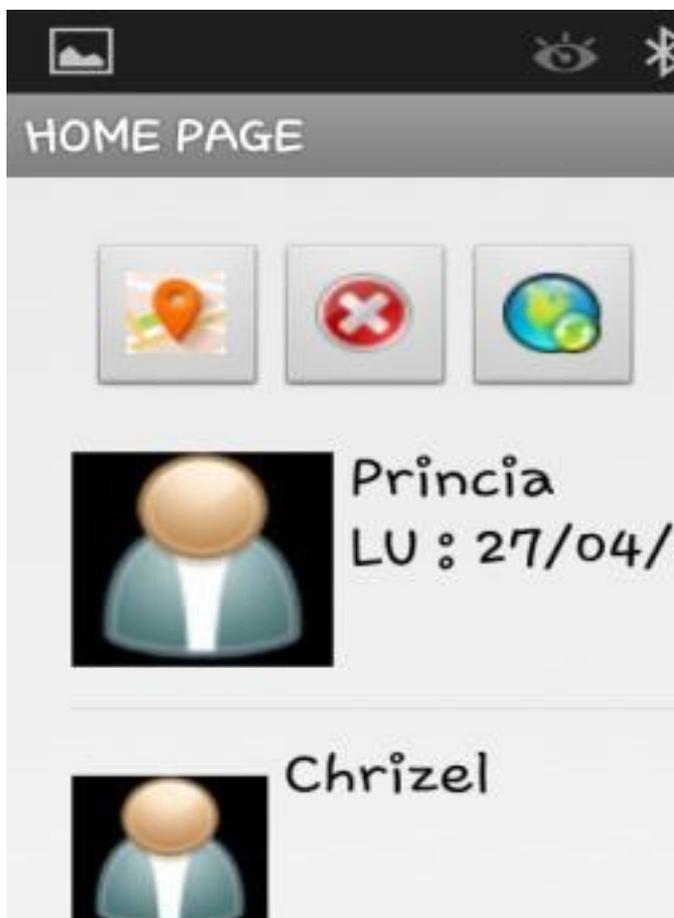
The emergence of the computer and the internet has revolutionized the way people communicate and exchange information. The desire to use the phone not only to call someone or send and receive SMS, but also be able to get the location of one's friends has led to the development of this application. The application comes with two new facilities in comparison with existing solutions. First one is related to the fact that users can share their location with their friends. The second one combines the first facility allowing the user to set location reminder so that they would be notified when a member is close to the user.



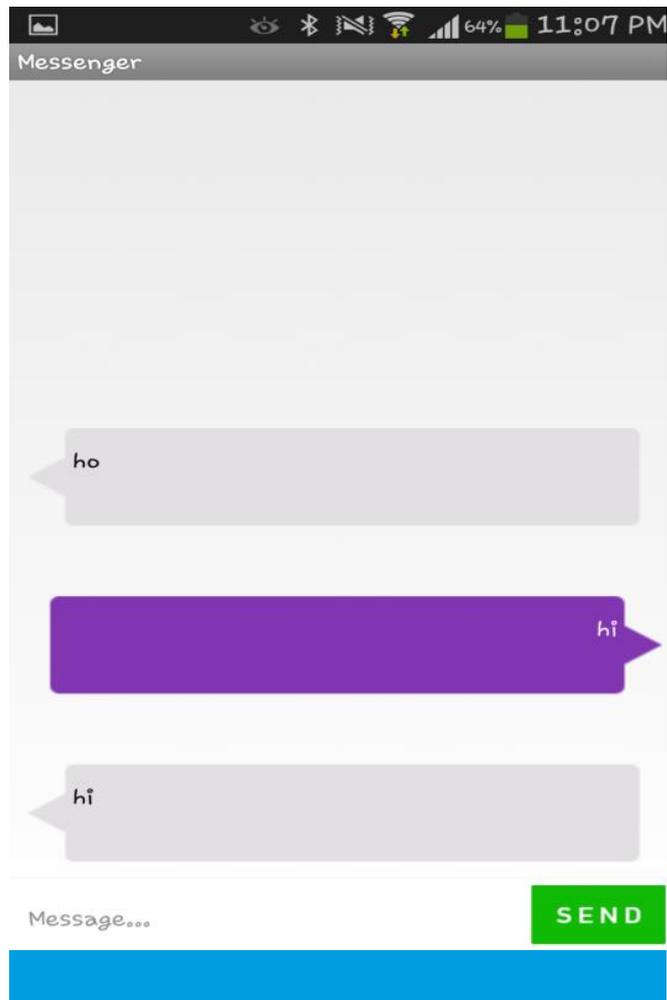
MeetYou application helps a user to connect with another user by sharing the location. This application is based on the three levels of the client-server architecture (Three-tier architecture).

The presentation layer interacts with the user, transforming the user activity into request and passes that to the business layer. On receiving the response from the access layer, it displays the result to the user. The business layer contains the logic that computes the data from the presentation layer and the results are stored in the database present in the access layer. The access layer includes the database which is used to store and retrieve the information to and from the database.

MeetYou can be used by customers for varying needs. The application connects its users by sharing a user's position with his friends, colleagues or other family members. The users can message each other and have the option to arrange meetings with their contacts by notifying them about their current location.



The application is developed for android phones. All the users of the application have to be connected to the same server to use the application efficiently. In case a person goes missing or is kidnapped, this application can be used to get the last seen location of that person. The application can be extended to work on other operating systems and it can be made commercially available. The working of this app is shown below .



3. Efficient Verifiable Privacy Preserving Protocol

Deeksha Premchand Rao

Harshini Shetty

Rainy Mishal D'souza

Roslin Thomas P T

Guide : Ms Sujatha M

Cryptography includes the protocols, algorithms and strategies to securely and consistently prevent or delay unauthorized access to sensitive information and enable verifiability of every component in a communication.

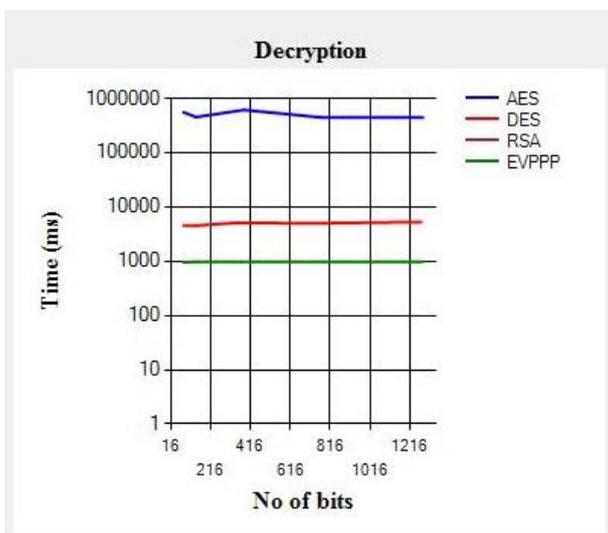
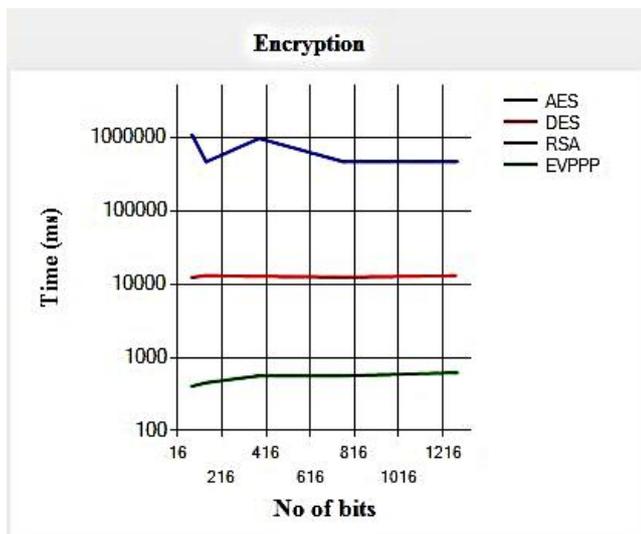
In most of the existing works on data the malicious adversary can easily forge his/her input values to achieve incorrect outcomes or simply lie about the computation results to cheat other parties. The previous protocol focuses on data aggregation to an untrusted aggregator without disclosing each other's data, while preserving privacy. The project proposes an efficient verifiable privacy preserving protocol (EVPPP), which can resist cheating by incorporating a trusted aggregator. The protocol

aims to establish an intruder free communication between the sender and receiver.

The objective of this project is to encrypt the text and decrypt the text using aggregator. In this project users encrypt the text using the Efficient Verifiable Privacy Preserving Protocol (EVPPP) algorithm. The EVPPP algorithm divides the cipher into segments and then passes these segments to the aggregator and receiver using sockets. The socket is the endpoint communication between the two computers in networks. The sender and receiver register itself with the aggregator. The receivers decrypt the cipher text by comparing with the IP address, id and segments.

This project uses EVPPP algorithm which reduces the time required for encryption and decryption. It is observed that EVPPP is nearly 80% more efficient than existing algorithms.

Comparison of encryption and decryption EVPPP with AES, DES and RSA is shown below.



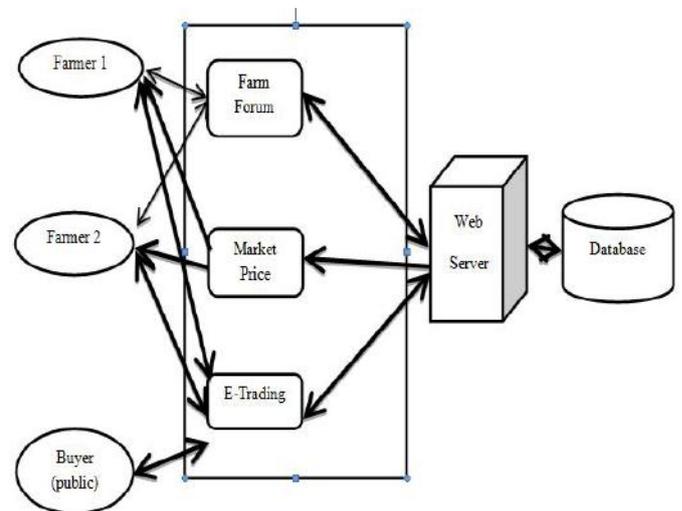
The efficiency can be increased by sending the segments to multiple intermediate receivers, and then in turn to the final recipient. The protocol can be used in military application, mobile data communication, social networks.

4. Farm Book

*Evangeline Anusha Soans
Melisha Maria Menezes
Russel Canute Monteiro
Sharath Kumar Gs*

Guide : Ms Sridevi Saralaya

FarmBook is a social network service provided through online services. It includes features such as a forum and online shopping. FarmBook is a web-based service that allows farmers to create a public profile, to create a list of users with whom to share connections. FarmBook allows farmers to share ideas, pictures, posts, activities, events, interests with other farmers in their network. It also facilitates them to update prices of commodities so as to enable all farmers to obtain the aforementioned prices. Block Diagram of FarmBook is shown below



FarmBook also includes a forum which will enable farmers to hold discussions on several of their day to day problems. Their queries can be answered by other farmers or also can be answered by experts in that field. FarmBook also facilitates farmers to buy or sell their products. An account is not needed for the online shopping aspect and to view the market price page of FarmBook.

The primary issues concerning farmers involve finding solutions for their farm related problems. There is no online community through which farmers interact. They often have to travel great distances in order to obtain solutions from agricultural research institutes. The solutions obtained are not always satisfactory and are not obtained on time. In addition to this, there is no way for farmers to obtain information about the daily market prices of commodities and products. Hence, they do not get good prices when they sell through middle men and they are often cheated. The general public has no means of buying organic products directly from the farmers.

The major application of FarmBook is to provide the farmers with a common platform to communicate, thus enabling them to state their problems and obtain opinions from other farmers around the world. The E-Commerce effectively eliminates the middle man by enabling farmers to advertise any products they wish to sell or view advertisements put up by other farmers.

The market price page provides the day to day market rates of farm products which in turn helps farmers to obtain better returns on their produce. FarmBook can be accessed through mobile app or directly through the website.

FarmBook solves problems faced by farmers across the globe. By providing a social network Farmbook connects the farmers and provides a platform for those farmers seeking help. Forum contained in FarmBook is a place for open discussions on specific problems faced by farmers.

The E-Commerce section can be used to buy/sell organic products. FarmBook can evolve further by the introduction of GPS tracking which can track a person's location thus eliminating the need of adding the aforementioned location manually. It can also be further expanded with the development of an iOS app.



QUOTES

1. Life is a long journey of success and failures, where we gain appreciations from the former and lessons from the latter.
2. A Student's life is not meant for short term enjoyments, always meant for long term achievements.
3. It is not the height of a person that matters, it is his attitude what makes the difference. Understanding and analyzing the situation is the only solution for any complexities to be solved.
4. Perseverance may not be the key for the success that we dream, but will be the key for the success that we deserve.
5. Time is under nobody's control, but managing time efficiently depends on a person's skill.

Hamshika Arun
3rd CSE Section A

Technical Section

5 PEN PC TECHNOLOGY

Hamshika Arun -3rd CSE

1 INTRODUCTION

Five pen PC shortly called as P-ISM (“Pen-style Personal Networking Gadget Package”), is nothing but the new discovery, which is under developing stage by NEC Corporation. P-ISM is a gadget package including five functions: a CPU pen, communication pen with a cellular phone function, virtual keyboard, a very small projector, and a camera. P-ISM are connected with one another through short-range wireless technology. The whole set is also connected to the Internet through the cellular phone function.

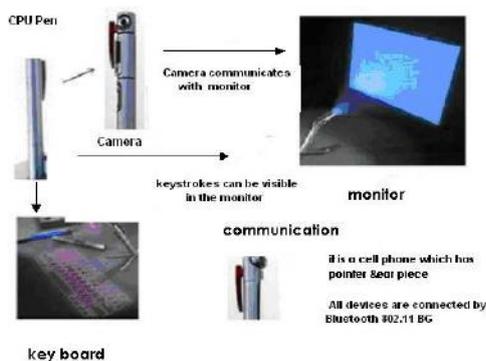


FIGURE OF 5 P-ISM



2 HISTORY

The conceptual prototype of the "pen" computer was built in 2003. The prototype device, dubbed the "P-SM", was a "Pen-style Personal Networking Gadget by Japanese technology

company NEC. The P-ISM was featured at the 2003 ITU Telecom World held in Geneva, Switzerland.

Concept Component	Function	Reliability
CPU Pen	Computing Engine	Open
Communications Pen	Cell Phone, Pressure Sensitive Pointing Device, Pointer and ear piece. Communications using Bluetooth	Near Term
Display	LED Projector A4 Size Approx. 1024 X 768	Slightly Farther Out Than the Phone and Camera
Keyboard	Projected keyboard with 3D IR Sensor	Slightly Farther Out Than the Phone and Camera
Camera	Digital Camera	Near Term
Based	Battery Charger and Mass Storage	Open

The designer of the 5 Pen Technology, "Toru Ichihashi", said that "In developing this concept he asked himself – "What is the future of IT when it is small?" The pen was a logical choice. He also wanted a product that you could touch and feel. Further, the intent is to allow for an office anywhere."

However, although a conceptual prototype of the "pen" computer was built in 2003; such devices are not yet available to consumers.

"The design concept uses five different pens to make a computer. One pen is a CPU, another camera, one creates a virtual keyboard, another projects the visual output and thus the display and another communicator (a phone). All five pens can rest in a holding block which recharges the batteries and holds the mass storage. Each pen communicates wireless, possibly Bluetooth."

3. CPU PEN

The functionality of the CPU is done by one of the pen. It is also known as computing engine. It consists of dual core processor embedded in it and it works with WINDOWS operation system. The central processing unit (CPU) carries instructions of the program in sequence, to perform the base

arithmetical, logical, and input/output operations of the system.

4. COMMUNICATION PEN

P-ISM are connected with one another through short-range wireless technology. The whole set is also connected to the Internet through the cellular phone function. They are connected through wireless modes (Blue tooth, 802.11B/G, and terabytes of data, exceeding the capacity of today's hard disks.

This is very effective because we can be able to connect whenever we need without having wires. They are used at the frequency band of 2.4 GHz ISM (although they use different access mechanisms). Blue tooth mechanism is used for exchanging signal status information between two devices. This techniques have been developed that do not require communication between the two devices (such as Blue tooth's Adaptive Frequency Hopping), the most efficient and comprehensive solution for the most serious problems can be accomplished by silicon vendors. They can implement information exchange capabilities within the designs of the Bluetooth.



Figure of Communication Pen

5 VIRTUAL KEYBOARD

The Virtual Laser Keyboard (VKB) is the ULTIMATE new gadget for PC users. The VKB emits laser on to the desk where it looks like the keyboard having QWERTY arrangement of keys i.e., it uses a laser beam to generate a full-size perfectly operating laser keyboard that smoothly connects to PC's and most of the hand held devices. As we type on the laser projection, it analyses what we are typing according to the co-ordinates of the location. A virtual keyboard is a software

component that allows a user to enter characters. A virtual keyboard can usually be operated with multiple input devices, which may include a touch screen, an actual keyboard, a computer mouse, a head mouse and an eye mouse .

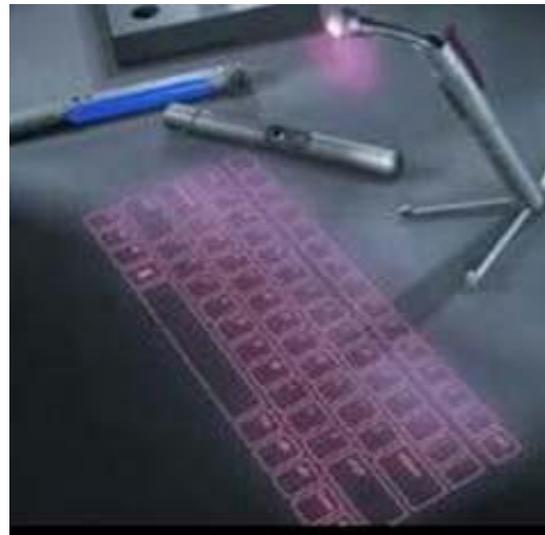


Figure of Virtual Keyboard

6. DIGITAL CAMERA

The digital camera is in the shape of pen .It is useful in video recording, video conferencing, simply it is called as web cam. It is also connected with other devices through Blue tooth. It is a 360 degrees visual communication device. This terminal will enable us to know about the surrounding atmosphere and group to group communication with a round display and a central super wide angle camera .



Diagram of digital camera

A digital camera is a camera that takes video or still photographs, or both, digitally by recording images via an electronic image sensor.

7 LED PROJECTOR

The role of monitor is taken by LED Projector which projects on the screen. The size of the projector is of A4 size. It has the approximate resolution capacity of 1024 X 768. Thus it gives more clarity and good picture.

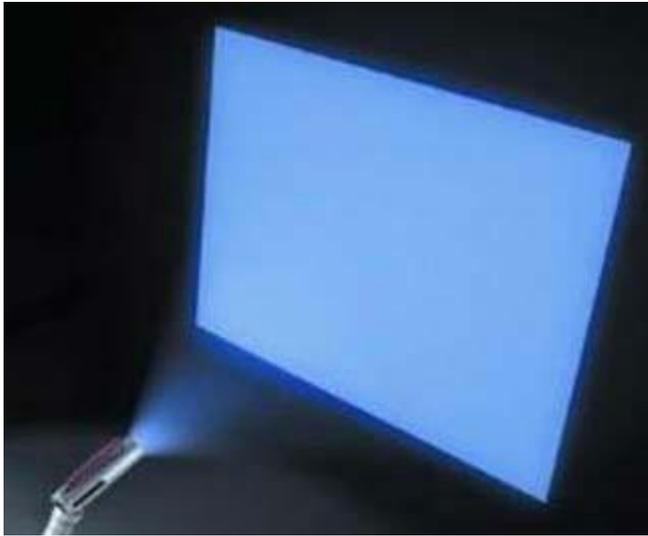


Figure of Led Projector

OS X EL CAPITAN

Ushadevi A- Assistant Professor-CSE

OS X El Capitan (version 10.11) is the upcoming twelfth major release of OS X, Apple Inc.'s desktop and server operating system for Macintosh computers. It is the successor to OS X Yosemite and focuses mainly on performance, stability and security. The first beta of OS X El Capitan was released to developers on June 8, 2015.

Features

- OS X El Capitan includes features to enhance the design and usability of OS X and also includes performance improvements and security updates.
- Apple states that opening PDFs is 4x faster, viewing messages in Mail is 2x faster, app switching is 2x faster, and launching apps is 1.4x faster than in OS X Yosemite
- OS X El Capitan introduces support for snapping two windows side by side to create a split view,

similar to the snap-assist feature in Windows 7. It also comes with a feature that enables users to spot the pointer more easily by enlarging the pointer while shaking the mouse or swiping a finger back and forth on the trackpad.

- OS X El Capitan adds multi-touch gestures to applications like Mail and Messages that allow a user to delete or mark emails or conversations by swiping a finger on a multi-touch device, such as a trackpad. OS X also analyses the contents of individual emails in Mail and uses the gathered information in other applications, such as Calendar. For example, an invitation in Mail can automatically be added as a Calendar event.
- The Notes application receives an overhaul, similar to Notes in iOS 9. Both applications will have more powerful text-processing capabilities, such as to-do lists (like in the Reminders application), inline webpage previews, photos and videos, digital sketches, map locations and other documents and mediatypes.
- Spotlight is improved with more contextual information such as the weather, stocks, news and sports scores. It will also be able to process queries in natural language. For example, users can say "Show me pictures that I took in Yosemite National Park in July 2014" and Spotlight will use that request to bring up the corresponding info.

THE TACTILE INTERNET

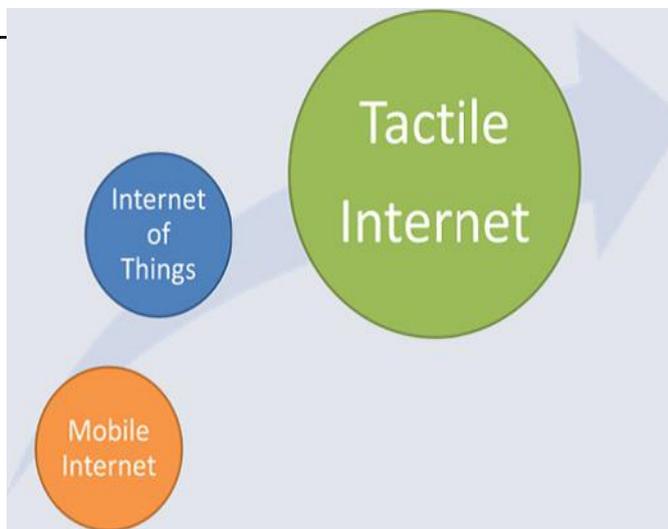
Smitha V. George-Assistant Professor-CSE

Mobile data communication is omnipresent. The Mobile Internet connects people anywhere and allows for voice services and the exchange of data and multimedia content at any time. Numerous innovations in the information and communication technology (ICT) sector have enabled exponential growth in network capacity, leading to the emergence of smartphones and a user-experience rich in multimedia.

The Internet of Things (IoT) connects devices, or objects, to increase their efficiency by exploiting the potential of networking.

The next wave of innovation will create the Tactile Internet. Extremely low latency in combination with high availability, reliability and security will define the character of the Tactile Internet. It will have a marked impact on business and society, introducing numerous new opportunities for emerging technology markets and the delivery of essential public services.

This will be possible with the 5G technology -only five years from now -- data-transfer rates will be a thousand times faster than 4G LTE. With 5G, "the user experience will be about touch," In terms of real-world data rates, the average user should experience speeds ranging from 100 Mbit/s to 2 Gbit/s.



Impact on Society

The instantaneous reaction of the Tactile Internet will enhance the way we communicate and lead to more realistic, immersive social interaction in private and business environments.

1) Education and Lifelong Learning: Modern methods for teaching – such as e-Learning, Blended-Learning and Massive Open Online Courses, as well as simulations of movements (e.g. flight simulators) – will be augmented by interactive elements far more advanced than today's embedded tests or didactic playing elements. The instantaneous reaction times of the Tactile Internet will make it possible to enable haptic overlay of the teacher and learner. This will result in novel learning experiences.

2) Healthcare: Better quality care will be possible by exploiting the amalgamated

expertise of medical doctors connected via the Tactile Internet during remote diagnosis and treatment, as well as through the combination of experienced surgeons' tactile sense with the high spatial precision of robot-assisted operations. Additionally, the support and assistance provided to people with disabilities by exoskeleton-based artificial limbs and power amplifiers will improve their mobility, ensuring them the ability to lead a self-determined life.

3) Personal Safety Zones: The capabilities of the Tactile Internet will permit the creation of a personal spatial safety zone, or 'bubble', able to interact with nearby objects also connected to the Tactile Internet. Applied to road traffic, in the long term this safety zone will be able to protect drivers, passengers and pedestrians. Vehicles will detect safety-critical situations and react instantly to avoid traffic accidents and warn other objects of impending danger. In production environments, occupational safety levels will improve as production machines or robots will detect and avoid the risk of harm to people in their vicinity.

4) Traffic in a Smart City: The connectivity of vehicles in the Tactile Internet will enable cooperative traffic modes, where traffic flow will be optimized by heeding local safety constraints as well as parameters such as the overall traffic density in a Smart City. Guided autonomous driving or platoon driving will allow for a continuous traffic flow in which safety and energy efficiency will be significantly improved as compared to today's situation

System Architecture

The Tactile Internet requires the best possible response times, availability, reliability and security. These objectives can only be accomplished by a distributed service platform architecture. The need for ultra-low end-to-end latency requires that tactile applications be kept local, close to the users.

In an initial step, a small local data center or 'Mini Cloud' may support a cluster of user devices in its vicinity. This Mini Cloud then provides the complete functionality of a wireless network as well as all tactile services required within the cluster. Such a Mini Cloud could control and steer all of the robotics of a large industrial complex.

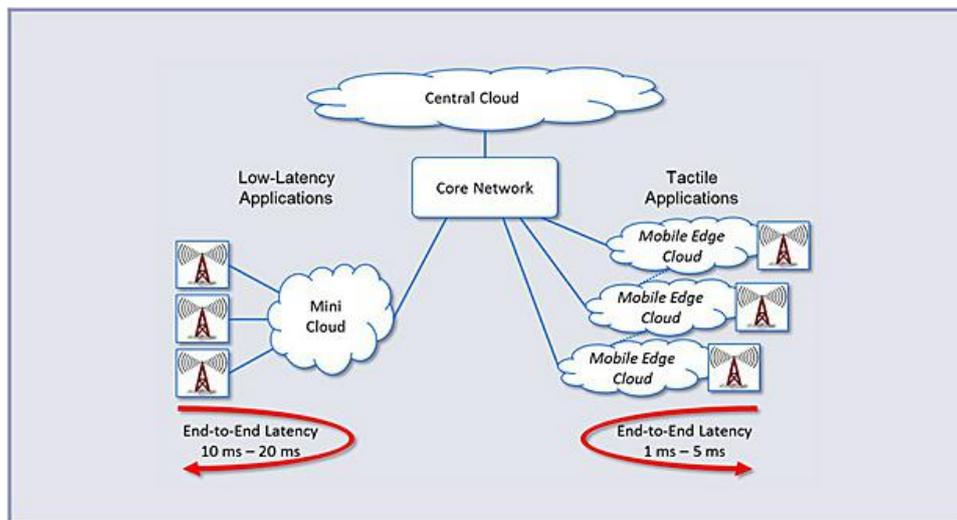
The next step would be to deploy a Mobile Edge-Cloud responsible for the tactile applications' network functions at the edge of the mobile access network, close to the user devices.

Mini Clouds and Mobile Edge-Clouds include three basic functional units:

1. A cloud-based service platform for tactile applications, online games, web caches and other delay-sensitive services.
2. Virtualized network control functions, performance optimizers and security systems.
3. All necessary interfaces with the wireless network.

Step-by-step, a multi-stage hierarchy of cloud platforms will arise: many Mobile Edge-Clouds at the level of the user devices, Mini Clouds at the local level, and a limited set of larger central clouds.

In principle, the Tactile Internet will enable haptic interaction with visual feedback, with technical systems supporting not just audiovisual interaction, but also that involving robotic systems to be controlled with an imperceptible time-lag.



FUN FACTS

1. The verb "cleave" is the only English word with two synonyms which are antonyms of each other: adhere and separate.
2. When you blush, the lining of your stomach also turns red.
3. When hippos are upset, their sweat turns red.
4. Every time you sneeze some of your brain cells die.
5. Your left lung is smaller than your right lung to make room for your heart.
6. The first Harley Davidson motorcycle was built in 1903, and used a tomato can for a carburetor.
7. The lion that roars in the MGM logo is named Volney
8. Switching letters is called spoonerism. For example, saying jag of Flapan, instead of flag of Japan.



Geetha R, Technical Staff, Dept. of CSE

NON TECHNICAL SECTION

ONE STEP CLOSER TO UNDERSTANDING NATURE

Akshatha 2nd CSE A section

What causes bubbles to form while boiling water? Does crushing ice cubes and adding to your drink really takes lesser time to make the drink cold than directly adding the cubes? Have you always thought physics is just a bunch of derivations and formulas?? Physics is deeper than that and a lot more interesting than that!

Nature is composed of interesting puzzles and myriads of unanswered questions. It's a human's quest for the search of answers to these enigmas. Physics is a MEDIUM, on a large scale, that provides answers to these questions. But physics alone is not enough to realise the world, we mix a tinge of chemistry, add a bit of statistics for flavour and serve it with lots and lots of mathematics! Does it mean that physics doesn't have its independent existence? Of course NOT. Physics has a weapon stronger than anything else, the power to EXPERIMENT. If experiment is the licence to truth then a good theory is its registration number, we need to elaborate on a good theory before proceeding further. One of the exciting property of physics is its uncertainty lying in the theory. Any theory proposed would end up being incomplete since no theory can be completely efficient. Hence the most successful ones are called as a good theory. REMEMBER good theories are like toothbrushes, with indicators as experiment. Every time the band fades, you know you have to get a new one!

So when you see anything happening around you, ask why, nature always has wonderful answers to your questions. And well, if you ask me where you'd find the answers, I'd say most probably a physics book, if not, this puzzle of nature is too tricky, try your luck proposing theories on it, set up an experiment, who knows, what surprises nature has for you!

BEACH

Sanjana Bhat, 2nd CSE B Section



Life at the beach is always better,
The roaring waves rushing to the shore and going
back calm,
Tell us of the ups and downs of life.
The greenery of the grass and trees,
Tell us to keep our relationships evergreen.
The strong rocks, tell us to be strong,
The tickling breeze makes us smile.
Like they say salt water heals everything,
A day well spent at the beach refreshes our
memory,
Sky above your head and sand beneath your feet,
Enjoy the moment taking all the chances you have,
The sand can be brushed off and the tan
slowly fades away,
All of them will make up the memories,
The memories that you will cherish in the coming
days.
It maybe a sunny day or a rainy day,
Sunday or a weekday, any time of the day,
The day at the beach is beautiful any day.
Lovers and families,
Friends and loners;
From the young to the old, all love to spend time at
the beach.
Remember to live each day,
Forget the past and don't search for what you've
lost,
Leave behind all the broken pieces of yesterday,
Because you may find something better tomorrow.

BYLA

Aatash Ranjan Sengupta
2nd CSE A Section

It starts with the drums. No, not the drums. The beat. The beat... it never stops. It never rests. It's always there. A creation of humanity, that turns around to possess them. There's no escape. No place to hide. Your only hope is to not be there when it begins. If you can hear it, however faintly, you know it's already too late.

It's a relentless rhythm; powerful enough to shake you right to your bones your bones. It sets the pace, never wavering nor tiring; a thunderous warning of what comes next, like the heralds of old, announcing the beginning of a Great War. Then, the screaming starts. Nobody knows who. Nobody ever remembers who starts it, but soon everyone is screaming. Look around and see their eyes alight with madness, arms beginning to flail about and mouths wrenched open in powerful, primal yells. The madness is infectious. It has always been so. And the spread has begun.

Out of the corner of your eye, you see it begin. Don't try to catch it, because before you can blink, it's everywhere. Bodies are twisting and writhing, some bending to ridiculous angles before snapping back. People who normally never even stand straight are now literally bending over backwards and twisting to impossible angles. The short jump and leap over the tall. The tall dive and roll below the short. The big move their mass with unbelievable speed, while the small move around so fast that they need a metre of clearance on every side.

In the chaos, accidents are inevitable. A fist to the gut. A blow to the head. Crushed toes. It's been seen, done by, and done to everyone. But the craziness is commander and King. It will not allow any distractions. It will not allow you to slow. It's a merciless master. So, they ignore the pain (maybe, after so long, they don't feel it) and continue with their thrashing about. It's a grotesque spectacle.

Humans are not built to accept Chaos. Our minds cannot withstand it. Slowly, patterns begin to emerge. Circles. Always circles. Usually just a border, an outline, with an empty space in the middle. But, sometimes they use it for protection.

Men, tall and powerful, form a protective ring around the women. But, the protective ring itself turns on them, herding the women like cattle, surrounding them, leaving them with no place to escape the hungry animals. But, the Chaos reigns supreme here. Its captains, mad and crazy, disrupt the groups that form, trying to break it up to individuals. But, humanity is resilient. It will not give up easily. The Line forms. Again, who, how, when and where are mysteries that will last through time. But, the event occurs every single time.

The head of the Line blasts past you. It feels like a sledge hammer, but functions like a carving knife, slicing through the crowd, going where it will. None can stop it. None try. They join it. With the head taking the brunt of the damage, the remainder gets free passage. They line up, arms on their predecessor's shoulders, carrying forward those behind them as they move together, as a team. But, even this cannot last. Some move faster. The others can't keep up. They move faster still. You can see them strain to stretch their arms just a bit more, move just a bit faster. But, you can see it coming, with the inevitability of the explosion from a dropped bomb. Chaos is not to be denied. The Line breaks.

The Line breaks, but is not yet unmade. The two smaller lines try to continue their parent's work. One is successful. The other fractures further. The lines, once a bastion of order, now clash and collide, aiding Chaos to an even greater degree than any individual could manage. Each line, every circle, is now trying to fend for it, while they crash and collide with the others. This is on a greater scale than ever before. For each line that dissipates, another segment breaks off from a larger one. For each circle that breaks, another pulls into existence from the whirling mass of bodies. Individuals drift and flow in the midst of all this, none remaining anywhere permanently as they entire mass of bodies writhes and shifts and squirms with its contents.

But, even as the crowd dissipates, soaked in sweat, nursing injuries and carrying the injured, they know that Chaos is not gone. It's simply resting. You can see it in everyone's eyes. The madness that possessed them hasn't gone and is waiting, to break free once more.

WHO AM I??

Sanjay P
2nd CSE B Section



1. Nobody can catch me,
Yet I warn one and all,
One who does not value me, have to repent.

2. My job is to entertain you,
Even with my body injured with holes,
Slim is my body because of no food to eat,
It is only the air on which I subsist.

3. Jet black is his uniform,
Slow and steady is his gait,
Moves around everywhere,
Like a smart baby with a dub in his hand.

4. One face but with three hands,
Hangs like a bat but on one leg,
Gives you cool comfort when it is hot
Can you guess it fast?

5. I am the most valuable treasure,
Not money, not gold
I can only be earned with hard work
I grow when I am shared
Can you guess me?

Answers: 1. Time 2. Flute 3. Crow 4. Fan 5.
Education

CANVAS OF LIFE

Rayan Rahul, 2nd CSE B Section

I painted my life in monochrome
A perfection of black, white and grey
I was content, but then came the world
It scrutinized and added its own shades

"This isn't perfect,
That right there It needs this, trust me", they said
I begged and cried for them to stop
But they said it was for my own good

The color black covered my canvas from end to end
"You did that to yourself", the world taunted me as it left
I stumbled to restore it to its former self
But a canvas lost is lost forever.

THE CREEPY REALITY

Prajna G Puranik
3rd CSE, B Section

It was a typical winter morning. The cold weather enveloped the entire city, lulling the inhabitants into a deep slumber and punishing those of us who dared to leave the comfort of our sheltered and cozy homes. Biting cold wind howled through the empty streets, forcing me to pull my coat tighter around me. Suppressing a yawn, I rubbed my gloved hands together in a futile attempt to warm myself.

"Go back to bed", a voice whispered in my ear; "Go back to the warmth. Nothing matters except warmth...heat...comfort". I shook my head to clear it. There it was again. That stupid voice inside my head that had been trying to get me to go back home since I'd left it. I was on my way to the city bus stand to catch a bus to my college. Today was the last date for submitting a project I'd been working on for the last two months. So, I couldn't bunk the college today, even if I wanted to and I did want to. So, so badly. I never did fare well in cold weather. I preferred warmth and the sunshine. I simply was not wired for braving the cold. We should have winter holidays, I thought wistfully as my eyes scanned the surroundings Empty street, closed shops and houses with windows shut tightly. Not a single person was visible in any direction. Talk about desolation!

The melancholy mist hung heavily in the air, restricting my visibility. My body whined in protest with each step I took. Reminding myself about the importance of the project submission, I quickened my pace, slipping into a narrow alleyway which served as a shortcut to the bus stand. My footsteps echoed eerily, making me shiver with not just cold but also fear. I was spooked. Guess I really wasn't as brave as I liked to think. There was just something about the deserted streets, the biting cold and the soft taps of my footsteps on the path that heightened my senses and set my body on the edge.

So it was no wonder that I nearly jumped out of my skin when a high pitched scream tore through the alley and echoed out into the sky,

Instinctively, I surged forward in the direction the scream had come from. I didn't think; didn't evaluate the possible consequences of this action. I just moved forward recklessly. Adrenaline pumped through me, pushing me to run faster than I ever had. I didn't have to go far to find the source of the scream...

My steps faltered then halted completely at the sight before me: A woman was sprawled eagle-backed on the ground, in a pool of blood. The blood sprouting from the multiple injuries on her body. Injuries no doubt inflicted by the knife in the man's hand. Yes, the murderer was right there, crouching beside the body of the woman with a knife held in his grasp.

My brain went numb for a second at the sight. I was frozen like a statue made of cold hard ice. Horror echoed through the frozen recesses of my brain. The horror was replaced by a huge rush of fear when the murderer looked up and locked eyes with me. He'd heard me. Of course he had. The murderer's eyes which had widened in shock on seeing me turned angry now. He leapt to his feet, brandishing his knife in my direction.

The sight of his knife dripping with blood spurred me into action. In the blink of an eye, I turned and ran like a bat out of hell. As I ran, I heard his loud footsteps behind me. He was following me...may be to silence me? Oh no! A sudden image of me lying in a pool of my blood flashed before my eyes. I would not be another one of his victims! It was with this determination that I pushed myself to run faster. I didn't know where I was running to. I just knew that I had to get away from him.

I heard an angry cry from behind me just as the earth started to shake. What the...? Earthquake? No, no!

A particularly nasty jolt sent me flying. I landed hard on the ground which was still shaking. I was pushed and pulled and jostled and shook. Gravity had defeated me and now I'd become his prey, the murderer's second victim....NO!!

"Wake up!" I heard someone call loudly. Blinking, I focused on my mother who was standing before me. Wait a second! Where was the murderer? And how did my mother appear here suddenly? What about the earthquake? "You'll be late if you don't

get up now!" My mother told me sternly. Blinking, I tried to focus on my surroundings. I was in my room. I was safe in my house. The earthquake must have been my mother shaking me. Apparently, I'd fallen down from the bed, all tangled up in my blankets. Looking up at my mother from my position on the floor, I grinned crazily. There was no murderer chasing me after all. I was safe and warm as a baby bird. It was with a cheerful mood that I set out to college later on. I think I was even whistling. My cheerful mood kept me energized as I walked through the deserted streets and slipped into the familiar alleyway.

However, my good mood went off abruptly. Bile rose up my throat as goosebumps erupted on my skin. Because...lying in front of me, in a pool of blood was the murdered woman from my dreams.....

Quotes

1) Feeling gratitude and not expressing it, is like wrapping a present and not giving it.

- William Arthur Ward

2) The ones who are crazy enough to think that they can change the world are the ones who do

-Steve Jobs

3) Don't Compare yourself with anyone in this world...if you do so you're insulting yourself

-Bill Gates

4) Life opens up opportunities to you, and you either take them or you stay afraid of taking them

-Jim Carrey

5) If you can't explain it simply, you don't understand it well enough

-Albert Einstein

6) He who fears being conquered is sure of defeat.

-Napoleon Bonaparte

ART GALLERY



Harshitha, 8th Sem



Harshitha, 8th Sem



Brian, 7th Sem



Brian, 7th Sem



Rashmi, 4th Sem

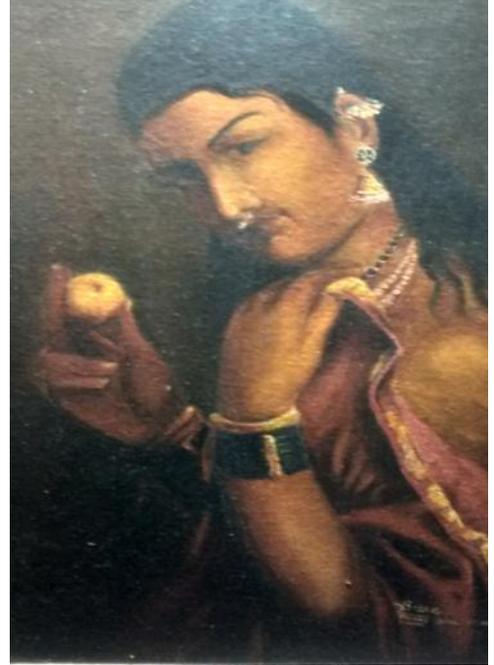


Blackrose, CSE Dept

ART GALLERY



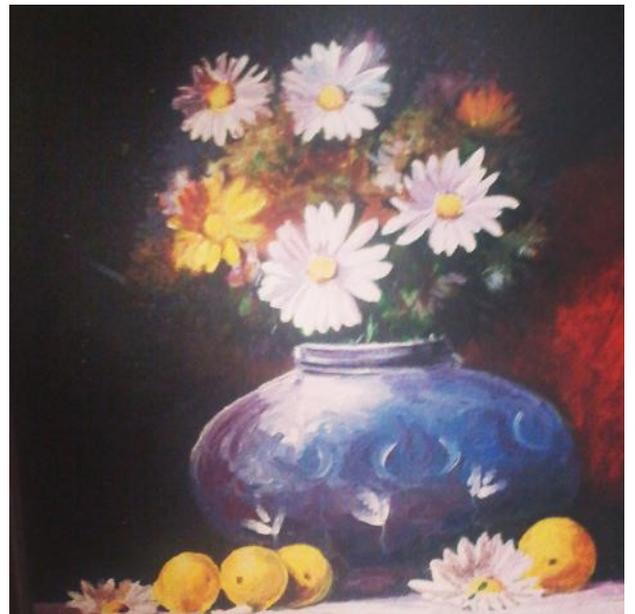
Shreya Pai 4th Sem



Brian 7th Sem



Brian 7th Sem



Brian 7th Sem

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ST JOSEPH ENGINEERING COLLEGE , VAMANJOOR , MANGALURU

VISION OF THE DEPARTMENT

To be recognized as a centre of excellence in computer and allied areas with quality learning and research environment.

MISSION OF THE DEPARTMENT

1. Prepare competent professionals in the field of computer and allied fields enriched with ethical values.
2. Contribute to the Socio-economic development of the country by imparting quality education in computer and Information Technology.
3. Enhance employability through skill development.

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Programme Educational Objectives:

1. To impart to students a sound foundation and ability to apply engineering fundamentals, mathematics, science and humanities necessary to formulate, analyze, design and implement engineering problems in the field of computer science.
2. To develop in students the knowledge of fundamentals of computer science and engineering to work in various related fields such as network, data, web and system engineering.
3. To develop in students the ability to work as a part of team through effective communication on multidisciplinary projects.
4. To train students to have successful careers in computer and information technology industry that meets the needs of society enriched with professional ethics.
5. To develop in students the ability to pursue higher education and engage in research through continuous learning.
