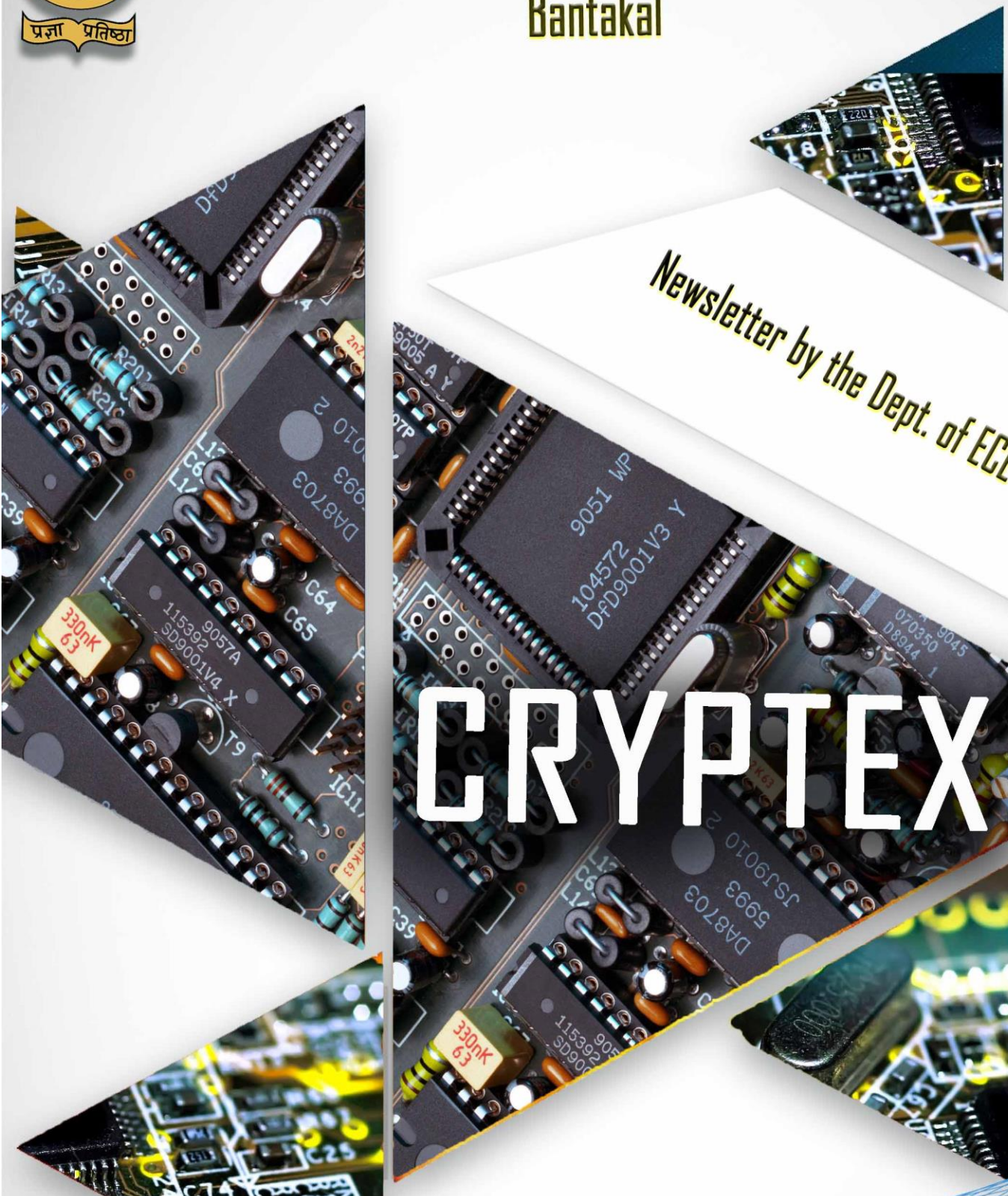
Shri Madhwa Vadiraja Institute of Technology and Management
Bantakal



Newsletter by the Dept. of ECE

CRYPTEX

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ACADEMIC YEAR 2016-17

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SHRI MADHWA VADIRAJA
INSTITUTE OF TECHNOLOGY & MANAGEMENT

CRYPTEX

Newsletter of the Department of Electronics & Communication Engineering, Vol. 2, Issue 2, June 2017

EDITORIAL

There was a time when survival depended on just the realization of physiological needs. We are indeed privileged to exist in a time when 'intellectual gratification' has become indispensable. Information is easily available for the soul that is curious enough to look for it. Technological boons enable information availability anywhere, anytime. The difference however, lies between those who look for information and those assimilate knowledge.

It is deemed virtuous to serve knowledge and as educators it is in the ethos of SMVITM to empower every learner who chooses to enter our portals. Driven by our founding philosophy, we believe in building a community of perceptual learners by enabling them to look beyond their abilities and achieve what they assumed impossible.

For any institution, the secret of excellence lies in the transitional abilities of its faculty members and students. Here is another issue of our newsletter 'CRYPTEX', a journey of excellence and a compilation of the immense effort put forward by the invincible SMVITians. This is the second issue of academic year 2016-17. We have started this as a way of keeping in touch with teachers and students who have been an integral part of our journey. This is not the outcome of the effort put in by an individual, but is the immense effort put forward by our Editorial Board, all faculties, students, all near and dear ones.

We hope to use this newsletter partly as an additional tool of input to enrich the knowledge of students and their access to further sources of information. To be sure, faculties and students have been partnering with bus well in ensuring that our vision and mission succeeds. We hope for your continued support in this regard and wish that you would put this newsletter to good use.

We hope you will welcome this effort of ours to connect with you. It goes without saying you are welcome to make suggestions to improve our efforts

Editorially Yours
Sachin S Bhat

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DEPARTMENTAL ACTIVITIES

Practical Integrated Workshop on C-Programming

The department of Electronics & Communication Engineering, in association with ISTE Student Chapter and Cloud-E Mysuru, organized a 3-day practical integrated workshop on C-programming, during 23–25 March 2017. Mr. Mahesh Padyana of Cloud-E, who is also the adjunct faculty in the department of ECE SMVITM, was the resource person. Interested students of sixth semester ECE participated in the workshop.

Mr. Padyana, who has over two decades of experience in industry, and who was part of the recruitment team of Larsen & Toubro, said that most of the engineering graduates lack fundamental knowledge of C programming, because of which they cannot be employed in the electronics and computer industries. The primary reason for this, he said, is the wrong method adapted in colleges, wherein, the students are made to memorize from the text books and reproduce in the examination. More focus is currently given to the theoretical knowledge rather than to the practical exposure, because of which, the students tend to forget what they have learnt, after stepping out of the examination hall. To overcome this drawback, he said, through his company Cloud-E, they conduct practical integrated workshops for engineering students on different topics throughout Karnataka

Earlier, Dr. Balachandra Achar, HOD of ECE department, gave a prelude to the workshop and welcomed the resource person. HOD of Civil Engineering and in-charge Principal Dr. B Radheshyam, faculty and staff of ECE department were present during the inaugural session. The program which began with the invocation by Assistant Professor Mrs. Rashmi KR, was compered by Ms. Vijetha Jain. ISTE office bearers Mrs. Laxmi Shetty, Ms. Sowmya Bhat and Mr. Raghavendra Rao coordinated the workshop.

One-day Workshop on Raspberry Pi

The department of Electronics & Communication Engineering, in association with ISTE Student Chapter of SMVITM, organized a one-day workshop on Raspberry Pi, on 18 March 2017, at the Central Computer Center of SMVITM. Dr. Dinesh Rao B, Mr. Sreepathy H V and Mr. Jeswil Mascarenhas; from the School of Information Sciences, Manipal were the resource persons. Interested final year students of ECE and CSE branches participated in the workshop.

Raspberry Pi is a card-sized computer that can be connected with monitor, keyboard, mouse and hard drive, to make a complete computer. It can be used in school or college projects, and in many applications such as word processing, spreadsheets, internet browsing, etc. that are normally done using desktop computers.

The workshop mainly focused on the installation and connection of Raspberry Pi using Ethernet and USB. Experiments such as pattern generation, blinking of LEDs, addition and subtraction, etc. using Python and C programming, were carried out during the workshop. Students gained innovative information about Raspberry Pi, and its need in the present era.

Earlier in the day, Principal Dr. Thirumaleshwara Bhat, and Head of the ECE department Dr. Balachandra Achar, welcomed the resource persons. Technical Adviser Mr. Harish Belman, the Heads of various departments, faculty and staff of ECE department were present during the inaugural session. Ms. Anusha Pai, student of final year ECE, compered the program, which was coordinated by Ms. Laxmi Shetty, Ms. Sowmya Bhat and Mr. Raghavendra Rao.

Technical Talk on DSP Applications in Embedded Systems

The department of ECE, in association with ISTE Student Chapter, organized a Technical Talk on the topic of DSP Applications in Embedded Systems on 04 May 2017. Dr. Niranjan U C, Adjunct Faculty at SMVITM, and Director of Research & Training at Manipal dot Net was the resource person. The students of final year E&C Engineering, and the faculty members attended the Talk and gained knowledge about the topic.

Dr. Niranjan, who has vast experience in teaching and research in the field of digital signal processing, discussed about the various embedded systems modules designed and developed at MDN, by using signal and image processing techniques in real time. He also discussed about the architectures of some DSP processors which are custom-made to execute multiply-accumulate operations at a very fast rate, with minimal instructions. Later the students interacted with Dr. Niranjan to clarify their doubts about the implementation of DSP algorithms in system-on-chip.

Earlier, Dr. Balachandra Achar, HOD of E&C Engineering welcomed the resource person with a flower. Ms. Anitha introduced the resource person to the gathering and compered the program. Assistant Professors Ms. Laxmi, Ms. Sowmya and Mr. Raghavendra coordinated the program.

Technical Talk on Embedded Hardware Design

The department of ECE in association with ISTE Student Chapter organized a Technical Talk on the topic "Embedded Hardware Design", on 31 March 2017, in the college premises. Mr. Kumar Bhagawath, Associate Director of i-Wave Systems & Technologies Pvt. Ltd. was the resource person. All the students of third year ECE attended the talk.

Mr. Bhagawath explained the steps involved in the design and development of embedded hardware board based on the customer requirement. He gave an insight into the various components that are usually mounted on a printed circuit board. He also explained the type of work that the new recruits to i-Wave are expected to do.

Earlier, Dr. Balachandra Achar, HOD of ECE, welcomed the resource person. Ms. Yajnika introduced the resource person to the gathering. The office bearers of ISTE coordinated the program.

Guest Lecture by Dr. K Satyanarayana Rao

Dr. K Satyanarayana Rao, Adjunct Faculty in the department of ECE, SMVITM, delivered a guest lecture on "An Inception to Robotics" on 03 March 2017, in the seminar hall. All the students studying in final and pre-final years attended the lecture.

Dr. Rao gave an insight on the history of robots, different types of robots and their applications in various industries. He also advised the students about adopting certain ethics in life for the betterment of the society.

Earlier, Ms. Vijetha Jain, student of 3rd year, introduced the guest speaker to the gathering, and Dr. HVB Achar, HoD of ECE department, welcomed him.

FACULTY ACCOMPLISHMENTS

Guest Lecture on LabView

- Avinash N J delivered a Guest Lecture on the topic "LABVIEW and its Application" at SDM Polytechnic, Ujire, on 5 Jan 2017.

Journal Publications

- Chetan R, Rajesh Nayak, Rajashree Nambiar, Vrunda Adkar and Shashikala published a paper titled "Automated Attendance System based on Facial Recognition", in IJRTI, Vol. 2, Issue 6, June 2017

- Chetan R, Rajesh Nayak, Rajashree Nambiar, Vrunda Adkar and Shashikala published a paper titled "Embedded Based Smart Traffic Junction", in IJRTI, Vol. 2, Issue 6, June 2017

- Chetan R, Shwetha, Shushmitha and Shilpa published their project work titled "Embedded Based Vehicle Speed Moderation and Collisionless System", in IJRTI, Vol. 2, Issue 6, June 2017

- Sachin Bhat and Shareen Noronha published a paper titled "Power transmission system for charging smart phones using RF module", in IJARCCE, Vol. 6, Issue 5, June 2017

- Sachin Bhat, Veena Kulal, Shwetha Shetty, Shraddha and Varsha published their project

work titled "Areca Copt: Pesticide sprayer quad copter", in IJIREEICE, Vol. 5, Issue 5, June 2017

- Balachandra Achar, Rohith, Swathi N Rao, Sweeda Noronha, Ujwala Shetty, and Wilson S Mathias, published their project work titled "Automatic Order Management System for Restaurants", in IJIREEICE, Vol. 5, Issue 6, June 2017

- Arun Upadhyaya, Pavan Acharya, Shishira, Suthesh Bhat and Sahana S, published their project work titled "Smart Vehicle Protecting System", in IJSDR, Vol. 2, Issue 6, June 2017

- Sowmya Bhat, Sonia Soans, Sowparnika K.N, Sushmitha and Jagrathi Umesh Kamath, published their project work titled "Intelligent Helmet for Coal Miners Using Voice Over Zigbee and Environment Monitoring", in IJIFR, Vol. 1, Issue 10, June 2017

- Sachin Prabhu, Glan Edbarg Mathias, Supriya and Nelson Fernandes published their project work titled "Embedded Electro-Mechanical Bicycle", in IJIREEICE, Vol. 5, Issue 6, June 2017

- Kusuma Prabhu, Brenda Lewis, Christon Cardoza, Deekshitha N Jathan and Flyacid Rodrigues published their project work titled "A Novel Approach for Intensity Control of a Street Light", in IJIREEICE, Vol. 5, Issue 6, June 2017.

- Raghavendra Rao P, Sridevi, Vasantha Pai, Rakesh Y and Sunil Mendon published their project work titled "IoT Based Unmanned Toll Booth Monitoring System", in IJIREEICE, Vol. 5, Issue 5, May 2017.

- Shashikala R, Divya M Shetty, Anupa, Rakshitha and Deepikaraj Ballal published their project work titled "Analysis of Osteoarthritis in Knee X-ray image", in IJSDR, Vol. 2, Issue 6, June 2017.

- Ganesh Shetty, Shaikh M Rahil, Shreelaxmi, Suhas Meti and Vishwanath GN published their project work titled "Smart Intersection Management System", in IJIREEICE, Vol. 5, Issue 6, June 2017.

- Laxmi Shetty, Ashwini M, Jasmitha, Krishna Sandeep Achar and Pallavi P, published their project work titled "Wireless Bomb Disposal Robot", in IJIREEICE, Vol. 5, Issue 6, June 2017.

Conference Presentations

- Raghavendra Rao, Sunil Mendon, Sridevi, Vasantha Pai and Rakesh, presented their project work "E-rickshaw using solar energy" in the National conference on emerging trends in science and technology, held at SMVITM Bantakal, on 23 Feb 2017.

- Vinay Kumar, Nayana, Namratha Damle, Jesna D'Sa and Anusha presented their project work "Wireless sensor network controlled automated drip irrigation system", in the National conference NCRTEC, held at Kolar, on 16 May 2017.

- Vinay Kumar presented is work "Generation of multiband and design of microstrip fractal patch antenna and simulation for C-band applications", in the National conference NCRTEC, held at Kolar on 16 May 2017.

- Sachin Prabhu and Dr. Manoj Kumar presented their work "Face recognition using a set of rotated Haar like features", in the

National conference NCRSEM, held at PESITM Shivamogga, on 20 May 2017.

Workshop / FDP Participations

- Nagaraja Rao, Raghavendra Rao and Kalavathi Nayak participated in the three-day workshop on "Programmable Logic Controllers and SCADA", held at SJEC Mangaluru, during 9–11 Jan 2017

- Arun Upadhyaya participated in the three-day workshop on "Recent Trends in Multimedia Computing and Security", held at NMAMIT Nitte, during 18–20 Jan 2017

- Kusuma Prabhu, Sachin Prabhu and Krishna Kumar participated in the five-day workshop on "Advanced Instrumentation", held at MIT Manipal, during 12–16 June 2017

STUDENT ACCOMPLISHMENTS

- Final year ECE students Rohit V Acharya and Wilson Samuel Mathias, along with few other students of CSE, participated in "Smart India Hackathon 2017" conducted by the Ministry of External Affairs, Government of India, in New Delhi, on 1 and 2 April 2017, and received certificates of Exceptional Participation.

- Parithosh Amin of final year ECE won 2nd prize in Table Tennis, in the State-level inter-collegiate Techno-Cultural Fest held at Srinivas College of Engineering, Mukka, on 6-7 April 2017

- Parithosh Amin of final year ECE, and Arjun Acharya of 3rd year ECE, participated in Adreline-2017 held at Father Mueller Medical College Mangaluru, on 24 Feb 2017, and won 2nd place in the Table Tennis event

- Srinidhi Raghu Moolya, Pragathi Nayak and Krithika Pai of 3rd year ECE participated in "Lead Prayana" organized by Deshpande Foundation Hubli, from 16 to 29 Jan 2017.

- Anusha Pai and Akhila Rao of 4th year ECE, Akshay Acharya and Shreeraksha N Acharya of 3rd year ECE, along with other students of the college, participated in the 7th Bharatiya Chhatra Sansad organized by MIT School of Government, Pune, from 17 to 19 Jan 2017

- Swathi M Padmashali of 3rd year ECE attended one-week internship program in Data-Sensor India Pvt Ltd., Bengaluru, from 16 to 22 Jan 2017.

- Prateek Devendra Nayak, Aaron Sebastian, Akash Shetty, Aniruddha, Dhanush Sherigar, Laskshmeesha Acharya, Arjun Acharya, K Ganesh Bhat, Vikas Rao GK and Rahul Hebbar of 3rd year ECE, participated in the one-week Telecom Technology Awareness Course on "Mobile Communication", conducted by BSNL Mangaluru, from 16 to 21 Jan 2017.

- Abhishek M Naik, Aishwarya Krishna, Akarsh P K, Joncil Niha D'Souza, Jyotsna U Bailoor, Karthik R Anchan, Lakshminarayana K N, Nathasha Pearl Tauro, Prajwal C Rao, Rakshith Acharya, Ranjitha M, Rohith Prabhu, Shubin, Sukumara, Vibhor Saxena of 3rd year ECE, participated in the short-term course on "Designing with FPG" at Sandeepani School of Embedded System Design, a Training division of Core-EL Technologies Bengaluru, from 17 to 31 Jan 2017.

PLACEMENTS

Thirty students of final year ECE got placed in various companies in the campus placement interviews held during the academic year 2016-17. Some of them even got more than one offer. The department congratulates all the successfully placed students, and wishes them all the best in their future career.

Sl.No.	***Name of the company***	***Names of the students placed***
1	Amazon India	Suhas Meti
2	Anora Semiconductor Labs	Sweeda Noronha
3	Artech Info Systems	Shwetha R Shetty, Ashwini M, Swathi N Rao
4	Atria Convergence Technologies	Anitha Acharya, Vishwanath G N
5	Diya Systems	Ashwini Shet, Nikhil G Karkera, Pratheeksha Prasad, Ramya, Shishira
6	Focus Academy of Career Enhancement	Akhila V Rao
7	IBM India	Anusha V Pai
8	Karmic Designs	Pratheeksha Kanchan, Shreelaxmi, Shwetha Shetty, Pavan Acharya
9	Mindlance Technologies	Pavan Acharya, Rohith, Veenashree, Ramya
10	Mphasis	Divya M Shetty
11	Software Specialists Inc	Brenda N Lewis, Deepikaraj Ballal, Prajna P
12	Solvers India	Archana B S Rao, Namratha K Karkera, Divya M Shetty
13	Tetherfi Technologies	Rohith, Anitha Acharya
14	Aradhya's Brilliance Center	Anusha V Bhat, Lahari Vaidya, Lekhana S Bhandary, Pawan Kumar Shetty, Shraddha, Ashwini M

STUDENT PROJECTS

The students of final year ECE undertook 24 different project works as part of their curriculum. Three best projects were selected by the judges during the project exhibition and competition held on 25 May 2017.

DIGITIZED PRESCRIPTION SYSTEM USING R.F.I.D. MODULE

According to a report from the International Narcotics Control Board (INCB), South Asia is facing a serious and growing problem of drug abuse. Drug abuse is a patterned use of a drug in which the user consumes the substantial amounts or with methods which are harmful to themselves or to others. Prescription drug abuse is growing in India. Despite efforts by India to tackle the problem, diversion from illicit channel in the country remains a major source of pharmaceutical preparations trafficked in the region. Many a times the prescriptions given by the doctor to the patient consist of sensitive drugs which, when taken in excessive quantities can be harmful to the patient. A system is required through which the quantity and the time of purchase of the drug can be controlled as per the doctor's advice.

To this effect, the final year ECE students of SMVITM; Abhilash Kulthamutt, Anitha, Anusha V Pai and C A Adarsh, under the guidance of Assistant Professor Mr. Rajesh Nayak; have developed a system which can achieve the drug abuse control. In the existing system, the patients are free to purchase any quantity of the drug very easily; sometimes even without the prescription from the doctor, which if taken in excessive quantities can be harmful to the patients. The proposed system reduces the same by employing Radio Frequency Identification (RFID) module and Raspberry Pi-3 processor.

The RFID card is given to the patient, instead of a paper prescription. The RFID card contains a unique user Id called UID. The doctor first opens a raspberry pi terminal application, logs into the database with his user id and password, detects the UID of the card with the help of RFID reader, prescribes the medicines in the database and gives back the RFID card to the patient. The patient now carries the RFID card to the pharmacy. The pharmacist takes the card and detects it in the same way as followed at the doctor's side. The pharmacist has to login into the database with his user id and password and search for the UID of the card and he gives the medicine as prescribed in the database.

There is no security issue for the patient details because only the doctor and the pharmacist can access the database by logging into database with their user ids and passwords. This system can be used to avoid the self-treatment method of patients, because there is no way to purchase drugs without the knowledge of the doctor. It also avoids the usage of paper. Moreover, due to negligence, the doctor cannot deny the prescription he has prescribed. This approach will reform the prescription system which is presently used in our country.

SMART VEHICLE PROTECTION SYSTEM

Accident while driving on the road is a primary concern for everyone. Vehicles which are large in size, such as truck and other loading vehicles, have some drawbacks while driving. In such vehicles, there are some points known as "blind points", which are not visible from the driver's seat. Sometimes, even if an object is very near to the vehicle, it may not be visible to the driver.

This is called "blind spot". Due to fog and rain, obstacles and other vehicles may not be visible to the driver. In such cases, there is a very high chance of accident taking place. During night time, if the driver feels sleepy, accident can happen. Nowadays, another common reason for accident is drunk driving.

In order to prevent accident due to the above mentioned reasons, a group of the final year ECE students of SMVITM, have designed an alarm system that can monitor the vehicle condition during travel. In this system, several ultrasonic sensors are mounted around the vehicle to detect objects nearing the vehicle, and alert the driver through voice messages and LCD display kept in front of him. Alcohol sensor is mounted near the driver seat so that if the driver has consumed alcohol, then the vehicle does not start; or if the driver consumes alcohol while driving, then the engine automatically stops. The system also has temperature sensor to detect excessive heat in the engine, and thereby prevent a possible fire. Even after these precautions if the vehicle meets with an accident then the system automatically sends message to the emergency number with the location information.

The system was designed and developed by Pavan Acharya, Sahana S, Shishir and Suthesh Bhat, with the guidance of Asst. Professor Mr. Arun Upadhyaya.

TONGUE DRIVEN WIRELESS ASSISTIVE TECHNOLOGY FOR WHEELCHAIR MOVEMENT

Persons with severe disabilities due to spinal cord injury and quadriplegia find it extremely difficult to carry out their daily work independently. These individuals completely depend on wheeled mobility for transportation, in and out of their homes. Sometimes if the disability is severe, the individuals cannot even use their hands to maneuver the wheel chair.

In order to help such people, the final year ECE students of SMVITM; Archana Rao B S, Ashwini Shet, Namratha Karkera and Shahana, under the guidance of Ms. Vrunda Adkar; have developed a prototype of a wheelchair which can be maneuvered using individual's tongue.

It intends in the usage of unconstrained motion of tongue as its movements are fast and do not require much of thinking concentration or effort. The key components of the project are three Hall-Effect sensors, a permanent magnet, microcontroller ATmega328, RF module, Encoder HT12E, Decoder HT12D, H-bridge driver, DC motor. A tiny permanent magnet is secured on the tongue and three Hall-Effect sensors are placed on the monkey cap, outside the mouth. Three Hall-Effect sensors are used for three directions of

wheelchair motion, i.e, left, right and forward. When a magnet is brought near any one of the sensor, the corresponding movement of wheelchair takes place.

The sensor generates analog signal which will be digitalized using ADC. Digitalized data is sent to encoder and then to RF transmitter. Transmitter section which consists of encoder and RF transmitter is placed on neck of the paralyzed person. The signal is sent wirelessly, which is received by the RF receiver. Then it is decoded and sent to microcontroller. Microcontroller is programmed to drive a motor in a particular direction. Since the output of microcontroller is not enough to run the motor, H-bridge driver is used to drive the motor. Receiver section consisting of RF receiver, decoder, microcontroller and H-bridge driver is kept beneath the wheelchair. This device helps the individuals to become independent and lead productive lives.

GROUP PHOTOS

DEPARTMENT PROFILE

The Department of Electronics and Communication Engineering in SMVITM was established in the year 2010, initially offering an undergraduate program with an intake of 60 students per year. The intake was increased to 120 in the academic year 2012-13. The department has well-qualified 24 faculty members, and 8 lab staff, highly motivated in teaching and guiding the students in exploring newer avenues of E&C. The department regularly organizes seminars, symposiums, workshops and invited talks by eminent faculty from reputed institutions and industry experts, to keep the students abreast of the latest technological developments in related fields. The department has its own library comprising of over 125 text books and technical magazines for quick reference. To nurture creative ideas and provide hands-on training to the students, the department has set up an Innovation/Project laboratory with state-of-the-art equipment and latest versions of software tools, in addition to the regular laboratories.

DEPARTMENT VISION

To emerge as an excellent technical education center and be an integral part in the development of advancing technologies and global challenges, in the field of Electronics and Communication Engineering

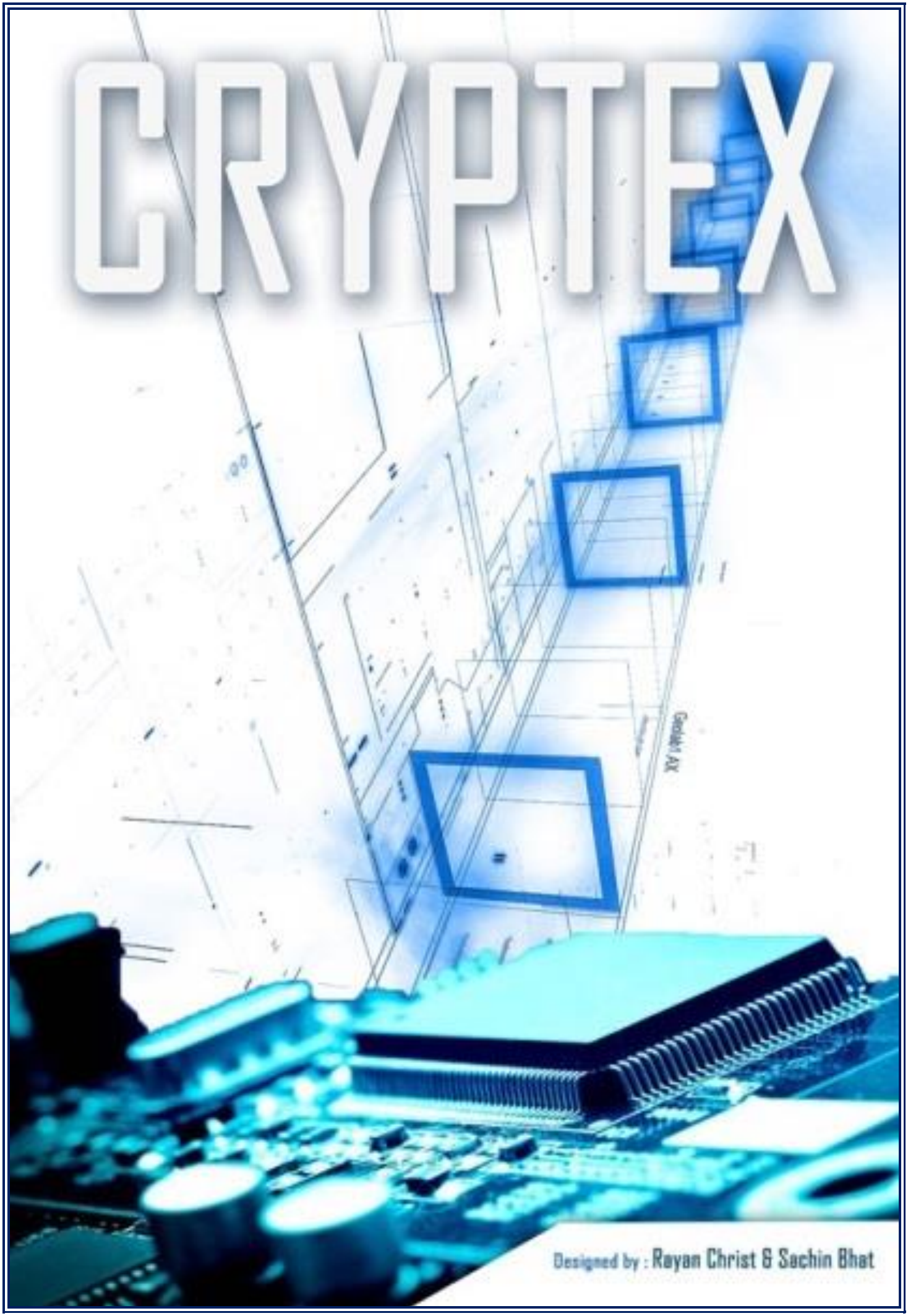
DEPARTMENT MISSION

- To facilitate an ambience conducive to the excellence in technical education
- To provide a platform that will ensure the exchange of ideas and dissemination of knowledge.
- To establish a research oriented center by having rapport with industries.
- To foster ethical and value based education with credibility by promoting activities that have societal impact.

PROGRAMME EDUCATIONAL OBJECTIVES

The graduate of Electronics and Communication Engineering should be able to:

PEO-1	Exhibit essential knowledge of applied sciences, mathematical modeling, logical interpretation and virtual realization to resolve real-time problems in the field of Electronics and Communication Engineering.
PEO-2	Work productively as an Electronics and Communication Engineer, including supportive and leadership roles on multidisciplinary teams.
PEO-3	Inculcate effective communication skills to excel in professional growth.
PEO-4	Take part in lifelong learning in pace with the advancing technological society.


CRYPTEX
Designed by : Rayan Christ & Sachin Bhat