K.L.N. College of Engineering

i'Storm

Department of Information Technology

SPECIAL INTEREST GROUP

LIVE WITH TECHNOLOGY

PRINCIPAL MESSAGE

It is a matter of great pride and satisfaction for K.L.N. COLLEGE OF ENGINEERING to bring out the News Letter '**I'STORM**' Released from the Department of Information Technology. The College has made tremendous progress in all areas-academic, non-academics, capacity building relevant to staff and students. The College has achieved another milestone in getting NBA (National Board of Accreditation).I am confident that this issue of Department News Letter will send a positive signal to the staff, students and the person who are interested in the Technical education and Technology based activities. A News Letter is like a mirror which reflects the clear picture of all sorts of activities undertaken by a Department and develops writing skills among students in particular and teaching faculty in general. I congratulate the Editorial Board of this News Letter who have played wonderful role in accomplishing the task in Record time. I express my deep sense of gratitude to Dr.N.Balaji, HOD/IT under whose guidance this Technical work has been undertaken and completed within the stipulated time. Also my heartfelt Congratulations to staff members and Students for their fruitful effort. With Best Wishes.

PRINCIPAL

Dr.A.V. RAMPRASAD

THE EDITOR'S DESK

It gives me immense pleasure to note that response to this newsletter of our department **i'STORM** has been overwhelming. The wide-spectrum of articles in different sections gives me a sense of pride that our students and professors possess creative potential and original thinking in ample measures. Each article is entertaining, interesting and absorbing. I applaud the contributors for their stimulated thoughts and varied hues in articles contributed by them. Commendable job has also been done by the Editorial Board in planning for and producing the Newsletter. My congratulations to the team who took the responsibility for the arduous task most effectively. I am hopeful that this small piece of technical work shall not only develop the taste for reading among students but also develop a sense belonging to the institution as well.

H.O.D (I.T)

Dr.N.Balaji

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OUR COLLEGE :

Vision

To become a Premier Institute of National Repute by Providing Quality Education, Successful Graduation, Potential Employability and Advanced Research & Development through Academic Excellence.

Mission

To Develop and Make Students Competent Professional in the Dynamic Environment in the field of Engineering, Technology and Management by emphasizing Research, Social Concern and Ethical Values through Quality Education System.

OUR DEPARTMENT:

Vision

To emerge as a centre of excellence through innovative technical education and research in Information Technology.

Mission

To produce competent information technology professionals to face the industrial and societal challenges by imparting quality education with ethical values.

Program Educational Objectives

The Educational Objectives of Information Technology Program represents major accomplishments that we expect from our graduates to have achieved three to five years after graduation. More specifically our graduates are expected.

1. *To excel in industrial or graduate work in information technology and allied fields.*

2. *To practice their professions conforming to ethical values and environmental friendly policies.*

3. *To be able to have an exposure in emerging cutting edge technologies and adapt to ever changing technologies.*

4. *To work in international and multi – disciplinary environments.*

Program Specific Outcomes

1. *Ability to apply the fundamentals of mathematics, science, engineering, information and computing technologies to identify, analyze, design develop, test, debug and obtain solutions for complex engineering problems.*

2. *Ability to select and apply appropriate modern tools and cutting edge technologies in the field of Information and communication to meet the industrial and societal requirements with public health and safety considerations.*

3. *Ability to analyze the multidisciplinary problems and function effectively in various teams for developing innovative solutions with environmental concerns and apply ethical principles in their career.*

4. *Ability to acquire leadership and communication skills to manage projects and engage in lifelong technical learning to keep in pace with the changes in technologies.*

Program Outcome

1. ***Engineering knowledge:*** *Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.*
2. ***Problem analysis:*** *Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.*
3. ***Design/development of solutions:*** *Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.*
4. ***Conduct investigations of complex problems:*** *Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.*
5. ***Modern tool usage:*** *Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.*
6. ***The engineer and society:*** *Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.*
7. ***Environment and sustainability:*** *Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.*
8. ***Ethics:*** *Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*
9. ***Individual and team work:*** *Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.*
10. ***Communication:*** *Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.*
11. ***Project management and finance:*** *Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.*
12. ***Life-long learning:*** *Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change*

ICON OF THE MONTH

Tim Cook

Born in Alabama on November 1, 1960, Tim Cook graduated from Auburn University with a bachelor's degree in industrial engineering in 1982, and went on to earn an M.B.A. from Duke University's Fuqua School of Business in the late '80s. Following a 12-year career at IBM, in 1994, Cook became a chief operating officer (Reseller Division) at Intelligent Electronics. He then worked for Compaq as vice president of corporate materials, procuring and managing product inventory. After six months at Compaq, Cook left his position and took a job at Apple. In August 2011, Cook was named Apple's new CEO, taking over the position for former CEO and Apple co-founder Steve Jobs, who died in October 2011 after a years-long battle with cancer.

Early Career

Fresh out of graduate school, Cook embarked on a career in the field of computer technology: He was hired by IBM, where he moved up the ranks to become the computer corporation's North American Fulfillment director, managing manufacturing and distribution functions for IBM's Personal Computer Company in both North and Latin America.

Following a 12-year career at IBM, in 1994, Cook became a chief operating officer (Reseller Division) at Intelligent Electronics. After three years there, he was ready for another move: The Compaq Computer Corporation hired Cook as vice president of corporate materials, entrusting him with procuring and managing the company's product inventory. His time there was short-lived, however: After a six-month stint at Compaq, Cook left for a position at Apple.

Career at Apple

"My most significant discovery so far in my life was the result of one single decision: My decision to join Apple," Cook stated nearly 15 years after joining the corporation, while speaking at Auburn University's commencement ceremony in 2010.

But Cook's decision to join Apple wasn't an easy one: He began working for Apple in early 1998, before the company had developed the likes of the iMac, iPod, iPhone or iPad, and when it was seeing declining profits instead of profit growth. According to Cook, prior to accepting his job at Apple, he was actually dissuaded from taking the job, and was told that the company's future looked very bleak: "While Apple did make Macs, the company had been losing sales for years and was commonly considered to be on the verge of extinction. Only a few months before I'd accepted the job at Apple, Michael Dell, the founder and CEO of Dell Computer, was publicly asked what he would do to fix Apple, and he responded, 'I'd shut it down and give the money back to the shareholders,'" Cook explained to Auburn graduates in 2010.

Soon after Cook came on board, however, things began to look a little brighter at Apple. As the corporation's chief operating officer, Cook was responsible for managing all sales and operations worldwide, including sales activities, and service and support. He was also a leader of the company's Macintosh division and in developing reseller/supplier relationship strategies. Less than a year after Cook his Apple debut, the corporation was reporting profits (fiscal year 1998)—an extraordinary shift from it's fiscal 1997 report showed a net loss of $1 billion from the prior fiscal year.

In August 2011, Cook was named Apple's new CEO, taking over the position for former CEO and Apple co-founder Steve Jobs, who died in October 2011 after a years-long battle with cancer. In addition to serving as CEO, Cook sits on the corporation's board of directors.

In May 2014, Apple announced its biggest acquisition to date when it bought Beats Music and Beats Electronics for $3 billion. As part of the deal, Beats co-founders Dr. Dre and Jimmy Iovine would join Apple in executive roles. In a letter to Apple employees, Cook said, “This afternoon we announced that Apple is acquiring Beats Music and Beats Electronics, two fast-growing businesses which complement our product line and will help extend the Apple ecosystem in the future. Bringing our companies together paves the way for amazing developments which our customers will love.”

Following this in June 2014, at the Worldwide Developers Conference, Cook announced the latest version of the Apple operating system for desktop and mobile, OSX Yosemite. In September of the same year, Cook unveiled the iPhone 6 and iPhone 6 Plus, both of which have larger screen sizes and come with new features such Apple Pay and “Burst Selfies.” He also announced the first new product under his reign, a wearable device to track fitness and health, the “Apple Watch,” which is available for purchase from 2015.

- -B.Sathyajothi (second year)

CHATTERBOX

A chatterbot (also known as a talkbot, chatbot, Bot, chatterbox, Artificial Conversational Entity) is a computer program which conducts a conversation via auditory or textual methods. Such programs are often designed to engage in small talk with the aim of passing the turning test by fooling the conversational partner into thinking that the program is a human. However, chatterbots are also used in dialog systems for various practical purposes including customer service or information acquisition. Some chatterbots use sophisticated natural language processing systems, but many simply scan for keywords within the input and pull a reply with the most matching keywords, or the most similar wording pattern, from a textual database.

The term "ChatterBot" was originally coined by Michael Mauldin (creator of the first Verbot, Julia) in 1994 to describe these conversational programs.

Development:

The classic historic early chatterbots are ELIZA (1966) and PARRY. More recent notable programs include A.L.I.C.E., Jabberwacky and D.U.D.E (Agence Nationale de la Recherche and CNRS 2006). While ELIZA and PARRY were used exclusively to simulate typed conversation, many chatterbots now include functional features such as games and web searching abilities. In 1984, a book called The Policeman's Beard is Half Constructed was published, allegedly written by the chatbot Racter (though the program as released would not have been capable of doing so).

One pertinent field of AI research is natural language processing. Usually, weak AI fields employ specialized software or programming languages created specifically for the narrow function required. For example, A.L.I.C.E. utilizes a markup language called AIML, which is specific to its function as a conversational agent, and has since been adopted by various other developers of, so called, Alicebots. Nevertheless, A.L.I.C.E. is still purely

based on pattern matching techniques without any reasoning capabilities, the same technique ELIZA was using back in 1966. This is not strong AI, which would require sapience and logical reasoning abilities.

Jabberwacky learns new responses and context based on real-time user interactions, rather than being driven from a static database. Some more recent chatterbots also combine real-time learning with evolutionary algorithms that optimize their ability to communicate based on each conversation held. Still, there is currently no general purpose conversational artificial intelligence, and some software developers focus on the practical aspect, information retrieval.

Chatterbot competitions focus on the Turing test or more specific goals. Two such annual contests are the Loebner Prize and The Chatterbox Challenge.

Incorporation in other devices:

A chatterbot may be deployed in a smartphone app. One popular category of smartphone app that relies on a chatterbot is the dating sim or romance bot category. The 36 You Games app "Boyfriend Maker" and WET Productions Inc.'s "My Virtual Boyfriend" are popular examples. According to 36 You Games' Japanese language website, as of 13 November 2012, Boyfriend Maker (later rebranded as "Boyfriend Plus" for iOS users) was ranked the number one free iPhone app in Japan and had been among the top ten overall apps in Singapore, Hong Kong and Taiwan. Such apps allow a user to carry on a textual interchange with a simulated chat partner, much as one might chat with a human partner on a date, or through instant messaging or other forms of online chat. The concept is very similar to chatting with a robot in an internet chat room or on an internet forum. Users can chat about various topics, from school homework to song lyrics, or engage in cybersex-style chats.

- P.G.Saravanan (second year)

3D PRINTING

One place where technology's role as a catalyst for innovation is particularly evident is 3D printing. According to tech research company Gartner, we are in the beginnings of a "Digital Industrial Revolution" that threatens to reshape how physical goods are created and 3D printing is at the heart of it.

1. By 2018, 3D printing will result in the loss of at least US$100-billion per year in intellectual property globally

Near term flag: At least one major western manufacturer will claim to have had intellectual property (IP) stolen for a mainstream product by thieves using 3D printers who will likely reside in those same western markets rather than in Asia by 2015.

The plummeting costs of 3D printers, scanners and 3D modelling technology, combined with improving capabilities, says Gartner, makes the technology for IP theft more accessible to would-be criminals. Importantly, 3D printers do not have to produce a finished good in order to enable IP theft. The ability to make a wax mould from a scanned object, for instance, can enable the thief to produce large quantities of items that exactly replicate the original.

2. By 2016, 3D printing of tissues and organs (bio printing) will cause a global debate about regulating the technology or banning it for both human and non-human use

Near term flag: The US Food and Drug Administration or comparable agency in a developed nation that is charged with evaluating all medical proposals will introduce guidelines that prohibit the bioprinting of life-saving 3D printed organs and tissues without its prior approval by end of 2015.

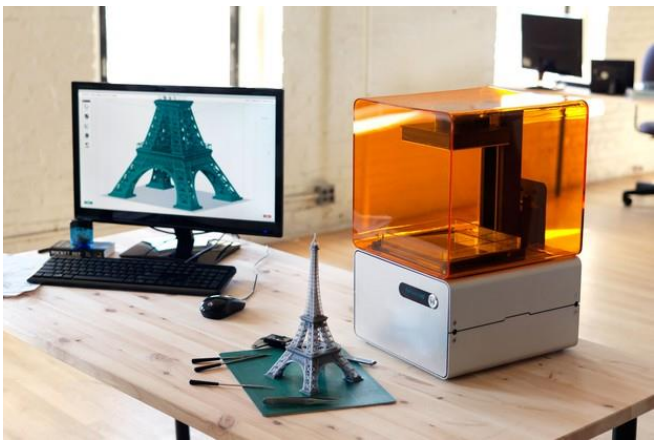
Bioprinting is the medical application of 3D printers to produce living tissue and organs. The day when 3D bioprinted human organs are readily available is drawing closer. The emergence of 3D bioprinting facilities with the ability to print human organs can leave people wondering what the effect of it will be on society. Beyond these questions, however, there is the reality of what 3D bioprinting means in helping people who need organs that are otherwise not readily available.

Digital business refers to business created using digital assets and/or capabilities, involving digitalproducts, services and/or customer experiences, and/or conducted through digital channels and communities. Gartner's digital business predictions focus on the effect digital business will have on labour reductions, on consumer goods revenue, and on use of personal data. While these do not cover the sum total of digital business, they do highlight critical areas of medium to long-term impact.

3. By 2017, more than half of consumer goods manufacturers will receive 75% of their consumer innovation and R&D capabilities from crowdsourced solutions

Near term flag: Consumer goods companies that employ crowdsourced solutions in marketing campaigns or new product development will enjoy a 1 per cent revenue boost over non-crowdsourced competitors by 2015.

Consumer goods companies are engaging crowds much more aggressively and with increasing frequency using digital channels to reach a larger and more anonymous pool of intellect and opinion. Gartner reckons we'll start to see a massive shift toward applications of crowdsourcing, enabled by technology, such as: advertising, online communities, scientific problem solving, internal new product ideas, and consumer-created products.



4. By 2020, digitisation will cause social unrest and a quest for new economic models in several mature economies

Near term flag: A larger scale version of an "Occupy Wall Street"-type movement will begin by the end of 2014, indicating that social unrest will start to foster political debate.

Digitisation means that a lot less labour is required to deliver goods and services. According to Gartner, this is fundamentally changing the way we pay for work. Long term, the research house says, this makes it impossible for increasingly large groups to participate in the traditional economic system — even at lower prices.

This, it says, will lead to more and more people using alternatives such as bartering, urging a return to protectionism or resurrecting initiatives like Occupy Wall Street, but on a much larger scale.

Mature economies will suffer most as they don't have the population growth to increase demand nor powerful enough labour unions or political parties to (re-)allocate gains in what continues to be aglobal economy.

5. By 2017, 80% of people will collect, track and barter their personal data for cost savings, convenience and customisation

Near term flag: The number of Kickstarter-based auctions of personal data will increase by triple-digit percentages by the end of 2014.

The average person on the street is now, more than ever, aware of how much data is being collected about them. Interestingly, Gartner reckons that this has set the stage for offering people more control over the disposition of personal data — collected both online and offline.

As increasing demand and scarcity drives up the value of such data, it says, it'll become increasingly worth people's while to share it voluntarily. The collective interest in self-tracking meanwhile suggests that people are investing more time and energy in collecting data about themselves. They increasingly view such data as a key asset for life improvement, which could also be consistent with the idea of trading it for value under the right circumstances.

6. By 2020, businesses and governments will fail to protect 75% of sensitive data, and declassify and grant broad/public access to it

Near term flag: By 2015, at least one more Snowden or WikiLeaks moment will occur, indicating an upward trend in corporations and governments' acceptance that they cannot protect all sensitive information.

The amount of data stored and used by businesses and governments is growing exponentially, such that any attempt to protect it all is unrealistic. Instead of facing an unfathomable task of protecting all data, organisations and governments will focus on protecting only a small part of it, but protecting it well. Wider society will also gain from this approach, enabling it to establish better control over government and business, preventing abuses of power and engendering greater trust.

The emergence of smart machines adds opportunity and fear as "cognizant and cognitive systems" and can help with decision-making, but could also remove the need for humans in some processes. Some businesses will see this as a means of delivering greater efficiency, but will have to balance between the active human workforce and the cold efficiency of machines that can learn.

7. By 2024, at least 10% of activities potentially injurious to human life will require mandatory use of a non-overideable "smart system"

Near term flag: Economically priced cars with "automated assist" technology added as standard equipment will increase through 2014.

The increasing roll out of "smart systems" capable of automatically responding to external events is increasing all the time, but there remains a deep-seated resistance to eliminating the option for human intervention. The capability, reliability and availability of appropriate technology are not the issue. The real issue is the willingness of people to accept both it and increasing removal of manual override options.

8. By 2020, a majority of knowledge worker career paths will be disrupted by smart machines in both positive and negative ways

Near term flag: Virtual personal assistant usage in business grows more quickly in 2017 and 2018 than iPad usage did in 2010 and 2011.

Gartner reckons that smart machines will upend a majority of knowledge workers' career paths by 2020. Smart machines exploit machine learning and deep-learning algorithms. They behave autonomously, adapting to their environment. They learn from results, create their own rules and seek or request additional data to test hypotheses. They are able to detect novel situations, often far more quickly and accurately than people. Anyone who's a part of the knowledge economy needs to recognise that smart machines can create substantial competitive advantages, as well as entirely new businesses.

9. By 2017, 10% of computers will be learning rather than processing

Near term flag: In 2014, the number of speech recognition applications running on deep neural network algorithms will double.

Deep learning methods, based on deep neural networks, are currently being applied in speech recognition systems as well as some object recognition applications. Quality of life improves when society is able to derive useful information from the copious amounts of unstructured data collecting in the internet. The most important implication of a learning computer is that it expands much less energy to recognise more complex patterns.

The Internet of Things cements the connection between machines, people and business interactions in the modern era.

With the advent of massively connected devices, businesses, governments and people now have access to more information about themselves and their surroundings than they can actually act on.

Gartner reckons there's serious opportunity to build applications and services that can use that information to create new engagement models for customers, employees and partners, and to foster a new set of business and marketing models that give the word "engagement" real value.

10. By 2020, consumer data collected from wearable devices will drive five percent of sales from the Global 1000

Near term flag: The number of smartphone apps requesting to share consumer data will increase twofold by 2015, indicating a rise in the number of people looking to get their hands on customer profile data.

Wearable computing, or wearables, is quickly moving into mainstream society, led by the growing, multi-billion dollar health and fitness markets (think about the Nike+ Fuelband and the Jawbone Up). Within five years, says Gartner, consumer wearables will become more sophisticated, capturing what the user sees, hears or even feels through biorhythmic responses. The technical hurdles that have stalled the adoption of wearables (battery life, augmented reality, chip evolution and bandwidth) are quickly eroding; opening doors to creative minds determined to exploit this technology for commercial gain as evidenced by sizable investments in wearable technology from Samsung, Google, Apple and Microsoft.

- C.V.Shanthi (second year)

TOP FIVE TRENDS OF MOBILE COMMUNICATION IN TECHNOLOGY 2015

1. 5G

As the next step in the continuous innovation and evolution of the mobile industry, 5G will not only be about a new air interface with faster speeds, but it will also address network congestion, energy efficiency, cost, reliability, and connection to billions of people and devices. In 2014 we heard of new antenna/RF technologies (Massive MIMO, wider bandwidths), proposed deployment of small cells in higher mmWave frequencies, shorter transmission time intervals, reduced latency, and possibly new modulation

methods beyond OFDM. With a 2020 commercialization horizon, 2015 be the year when we move from these concepts to technology trials and standards development. And we shall see if/how this year's ITU World Radio Conference (WRC-15) tackles 5G's spectrum aspects.

2. Fiber everywhere

2014 was the year of "fiber everywhere" propelled by efforts to improve connectivity and address demand increases from the use of high definition video, 3G/4G, streaming, podcast and other broadband services. This increased demand exposed existing bottlenecks in the communications infrastructure, and the solution that the doctor prescribed was a fresh new round of investments and activity in fiber (FTTx). In developed markets, FTTH/FTTC dominated deployments, and continued to do so into 2015. In the backbone network, Carrier Ethernet is well underway and it will continue to make inroads towards 100/400G switching hardware deployments, and around Tb/s of bandwidth.

3. Virtualization SDN, NFV

The "software-ization" of Telco continued throughout 2014. The year saw open source going main stream with the news that Midokura and Microsoft, the last two major players with closed source solutions, released their source code and went open. In 2015, the adoption of OpenStack, OpenDaylight, OpNFV for software and services, and Open Compute for hardware supported more virtualized, more open source network computing platforms and architecture.

4. Connectivity for IoT and IoE

Over the last year we have seen heightened interest in the Internet of Things (IoT) and of Everything (IoE) including several acquisitions by major players such as Google's purchase of Nest Labs for $3.2 billion. Bob Metcalfe, inventor of the Ethernet, said that the power of a network increases proportionally by the square of the number of users (Metcalfe's Law) which puts IoT –forecasted to be 50 billion connections by 2020- in a powerful and strategic position. The challenge that IoT faces is that everything sits in isolation thus an IoT standard is a must, and many see this happened in 2015.

5.Cognitive network and big data

Communication systems handle volumes of data generated by embedded devices, mobile users, enterprises, contextual information, network protocols, location information and such. It is a vast amount of information: A global IP backbone generates over 20 billion records per day, amounting to over 1 TB per day! Processing and analyzing this "big data" and presenting insights in a timely fashion are becoming a reality with advanced analytics to understand the environment, to interpret events, and to act on them. This is a positive development that helps unleash the intelligence in communication systems where networks are no longer labeled "dumb pipes" but as smart cognitive networks.

6. Cyber security

2014 was most remarkable for demonstrating that everything connected to the Internet can, and will be hacked. On daily basis we heard of retailers (Target, Home Depot, Neiman Marcus), financial institutions (Chase), technology companies (Snapchat, eBay, Sony) being hacked. No one is cyber-safe, and the road to the future leads through new cybersecurity technologies beyond current perimeter firewall-like defenses. The coming year will bring significant changes in the industry as it responds to recent increases and sophistication of cyberattacks. We will see better solutions to protect devices and endpoints, advances in the default use of encryption, in authentication schemes, and in BYOD solutions.

7. Green communications

It is being reported that communications technologies are responsible for about 2-4% of all of carbon footprint generated by human activity.

This highlights the need to focus on managing these numbers, and Green communications is doing just that. The trend is tackling first mobile networks because of their high energy use. Basestations and switching centers could count for between 60% and 85% of the energy used by an entire communication system. Environmentally friendly batteries, renewable energy sources, and intelligent management of the power systems are some of the proposed solutions. Besides this mobile network focus, there is a 2015 and beyond trend to manage total energy usage, compute-to-consumption ratios and performance KPIs for best in class green operations.

8. Smarter smart phones, connected sensors

The indisputable rock-start of devices is the smartphone, and its future can't be brighter. In 2014 we saw that only a few days after the iPhone 6 was released, there are already articles being written about the next-generation iPhone 7. Size, shape, and capabilities of these ubiquitous communication devices continue evolving, and so are prices which, driven by cost and performance improvements in digital technologies, are falling rapidly. The average selling price of a smartphone went down in 2014, and we expect this to continue in 2015 with low-cost OEMs such as Xiaomi and Lenovo leading the trend.

Beyond smartphones, tablets, connected sensors and body-worn wearables will also make headlines. Connected sensors will find their way into vehicles (smartcards), into urban areas (smartcies) and into our infrastructure (smartgrid).

9. Network neutrality, internet governance

The Internet has been operating since its inception under "open" principles, i.e. an open standards-based network that treats all traffic in roughly the same way, i.e. no connection blocking, bandwidth transparency, universal connectivity, and best effort service. Can these principles be sustained in a new word of data-hungry applications and services? Is regulation needed to prevent traffic throttling, unfair raise of fees, and construction of preferential high-speed Internet lanes? In 2014, Network Neutrality (NetNeutrality) discussions covered these questions in the context of ISPs transit and peering, and CDNs. Governments and institutions around the world will continue working on it during 2015. They will also be working on the Internet governance transition plan as current ICANN framework is set to expire in October.

10. Molecular communications

Molecular communication is an emerging paradigm where bio-nanomachines (e.g., artificial cells, genetically engineered cells) communicate to perform coordinated actions. Unlike traditional communication systems which utilize electromagnetic waves, molecular communications utilize biological molecules both as carriers and as information. The advantages provided by this "molecular" approach to communications are size, biocompatibility, and biostability. Examples of applications are drug delivery system (DDS), bio-hybrid implants, and lab-on-a-chip (LoC) systems. This trend is not ready for mass market but with an approach so radically different to Today's communications, following its developments is a must.\

- P.Sushma (second year)

RECENT TRENDS IN WEB TECHNOLOGY

BOOTSTRAPPING

Bootstrapping usually refers to a self-starting process that is supposed to proceed without external input.

In web technology, Bootstrap can refer to free and open-source collection of tools for creating websites and web applications. It contains HTML and CSS based design templates for typography,forms,buttons,navigation and other

interface components as well as optional Javascript extensions. It aims to ease the development of dynamic websites and web applications.

Bootstrap is a front-end web framework that is an interface for the user, unlike the server side code which resides on the back end server. Bootstrap is the most starred project on Github, with over 90k stars.

Bootstrap is compartable with the latest versions of google chrome, Firefox, Internet explorer, Opera and Safari browers. Bootstrap Version 2.0 supports responsive webdesign. Version 3.0 Bootstrap abopted a mobile first design philosophy. Bootstrap Version 4.0 alpha release added sass and flexbox support.

Stylesheets - Bootstrap provides a set of stylesheets that provide basic style definitions for all key HTML components. These provide a uniform, modern appearance for formatting text,tables and form elements.

-A.D.Jeeva Lakshmi (second year)

FIVE PREDICTIONS FOR THE FUTURE OF MOBILE COMPUTING HARDWARE AND SOFTWARE

When analysts and bloggers look at the future of computing, mobile or otherwise, they often focus on hardware developments. Whether their enthusiasm is justified or not, people get excited about higher resolution screens, front facing cameras and dual-core processors. The majority of the growth experienced by the mobile industry over the last several years, however, can be attributed to the proliferation of software and services that take advantage of these increases in connectivity, computing power, sensors and battery life – not the hardware itself.

So, while a proclamation that, "4G phones with 3D cameras will become the norm in 2 – 3 years," is a prediction that may possibly come true, it is disingenuous to say it without also discussing the software that will emerge to facilitate the trend. That said, here are 5 emerging mobile hardware trends and the software that will drive them:

1. Near Field Communication (NFC)
2. 3D cameras
3. Low power GPS
4. Higher resolution screens
5. Greater processing power and capacity

- Kamalesh Jain (second year)

FUTURE PIPES: 4 NETWORKING TECHNOLOGIES FOR THE FUTURE

What will the network look like tomorrow? Although the traffic itself probably won't change too much, the topology and tools that enable the network will be new and will require network administrators to educate themselves and their teams. Here are four network technologies and trends that everyone in IT will be hearing more about in the coming year and beyond.

OpenFlow:

This open standard, which was developed at Stanford University, is being used to deploy innovative protocols in production networks, according to the Open Networking Foundation. It enables organizations to remove the control plane from the forwarding plane or the

routers and bring it back and centralize it so they can easily partition and run different services, said Bob Laliberte, a senior analyst at Enterprise Strategy Group. "Companies like Google use it," he said. "The main reason to use OpenFlow is that it is an API that allows a switch to talk to a controller. An OpenFlow controller can help derive some of the more intelligent network functions. By adding this level of programmability into the switches, it allows the ability to scale an environment without having to deal with all the manual processes that usually accompany consolidating or scaling out a data center."

NetFlow:

This network protocol, developed by Cisco Systems, has a big place in today's network and the future. At its core, NetFlow lets network administrators monitor all the different network sessions going on at any given time. Although the protocol isn't new, the fact that a wide variety of network management systems are designed specifically to harvest and analyze NetFlow records is. Another emerging trend: The use of tools designed to find security issues using NetFlow records.

5G Wi-Fi (802.11ac):

The next step after 802.11n, which enjoys wide deployment, is backward-compatible so network administrators can deploy it today to support current and future devices. The main benefit of 802.11ac is speed, said Craig Mathias, principal analyst at Farpoint Group, an advisory firm specializing in wireless and mobile technologies. The technology ups the amount of spectrum that we use in a channel. With 802.11n, there were 40 MHz channels. With 802.11ac, network managers will use 80 MHz and conceivably even 160 MHz channels.

"That's a lot of spectrum," Mathias said. "The initial performance that people are going to hear about is 1.3 gigabits/sec versus the upper [boundary] of 600 megabits/sec — or, practically speaking, 250 megabits/sec — in 802.11n. So we're going from [250 megabits] to 1.3 gigabits." In practical terms, 802.11ac is the first wireless standard to break the gigabit barrier, a fact that has been widely reported and anticipated.

Ultimately, it's not all about throughput, it's about capacity, and 802.11ac delivers, Mathias said. "It's not so much about giving you hundreds of megabits per second. It's more about getting a lot of users on the air with an incredibly diverse array of applications and data types."

Centralized network controls and out-of-band management:

Network administrators will need greater control over all the networks in their organizations — wired and wireless — as well as disparate devices. Today's users are likely to have multiple devices and use them fluidly, moving from their desktop to their tablet PC to their smart phone in a matter of minutes. When they do that, they want access to their data, and they expect their experience to be the same no matter which device they are using, said Jon Oltsik, a senior principal analyst at IT advisory firm Enterprise Strategy Group.

Because of those trends, network administrators will need the ability to control and enable access across multiple devices and networks while at the same time enforcing network access policies at a more granular level, Oltsik said.

- L.Esakki Chandra (second year)

STUDENT'S CORNER

Aptitude questions

Find the odd man out.

1.3, 5, 11, 14, 17, 21

A. 21
B. 14
C. 7
D. 3

Answer: B

Explanation: Each of the numbers except 14 is an odd number. The number '14' is the only EVEN number.

2. 8, 27, 64, 100, 125, 216, 343

A. 27
B. 100
C. 125
D. 343

Answer: B

Explanation: The pattern is 23, 33, 43, 53, 63, 73. But, 100 is not a perfect cube.

3. 396, 462, 572, 427, 671, 264

A. 396
B. 427
C. 671
D. 264

Answer: B

Explanation: In each number except 427, the middle digit is the sum of other two.

4.2, 5, 10, 17, 26, 37, 50, 64

A. 50
B. 26
C. 37
D. 54

Answer: D

Explanation: (1*1)+1 , (2*2)+1 , (3*3)+1 , (4*4)+1 , (5*5)+1 , (6*6)+1 , (7*7)+1 , (8*8)+1 But, 64 is out of pattern.

5.331, 482, 551, 263, 383, 362, 284

A. 263
B. 383
C. 331
D. 551

Answer: B

Explantion: In each number except 383, the product of first and third digits is the middle one.

BULLETINS

CCNA certificate issue:

On 4.2.16, CCNA certificates were issued to the students of M.E by Dr.N.Balaji, HOD, IT

Advisory meeting:

An advisory meeting for the staffs of our department was conducted on 04.02.16 by our college principle Dr.A.V.Ram Prasad.

Workshop on MATLAB:

A workshop on MATLAB was conducted on 22.2.16 and 23.2.16 for the final year students by Mr.Pandian and Mr.Rajesh Kanna from Alpha Beta solutions.

Valedictory function:

The valedictory function of the short term course Technology For Software Development (TFSD) was held on 26.2.16.

Special Interest Group-2016

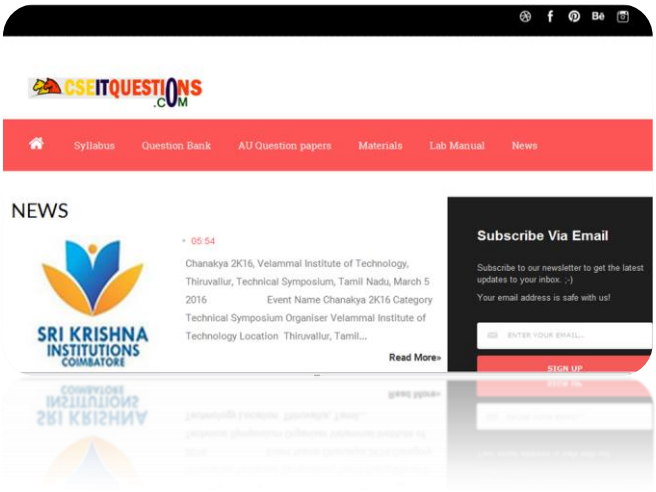
SIG Domains	SIG Head
Data mining	Ms.J.S.Kanchana, ASP
Internet of Things	Mr.N.Satheesh Kumar, AP2
Mobile Computing	Ms.N.Nandhini, AP2
Networks	Mr.S.Ramesh, AP2
Web technology	Mr.R.Srikkanthan, AP2
Software engineering	Ms.T.R.P.Monisha, AP2
Robotics	Mr.J.Karthikeyan, AP2

STUDENT'S ACHIEVEMENTS

CSEITQUESTIONS.BLOGSPOT.IN

This website is mainly designed for BTECH (IT) & BE(CSE) Engineering students .This is for Anna University 2013 Regulation syllabus. Here you can find information about Anna University updates, all subjects study materials, lecture notes including lab manuals.

You people can easily surf into syllabus , important questions etc.. which is useful for all your AU practical & theory examinations.



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   - Question bank
   - Anna university question bank

- Materials (two mark with answers, pdf notes and ppt)
- Lab manuals
- News

2. View and download option for the attachments.
3. Easy way to share the links to your friends.

Software specifications:

FRONT END : HTML,CSS,JAVA SCRIPT,PHP.

BACK END:GoogleDrive Scribd, PHPMyAdmin.

TOOLS : PHP Netbeans IDE 8.1; Wamp server.

Contact:

Please contact us nrp2013batch@gmail.com. View our post on facebook by giving friend request to facebook id : Cseit

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R.Rajeswari
T.Swathika
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(IT-B)

Placement details: CTS

	K.Apsana Fathima (125009)
	G.M.Sri Vidhya (125111)

IVTL

	E.Gayathri (125038)
	R.Priyanka (125004)
	N.Srinithi kannamma (125022)

OFS

	M.Sundar (125032)

Soft Square

	S.Natchiappan (125015)
	S.Vishnu Prasad (125019)

HEAD COUNT OF STUDENTS PLACED IN FINAL YEAR (2012-2016)

Company name	Count
CTS	2
IBM	3
IVTL	3
OFS	1
Polaris	1
Soft square	2
TCS	12

Suggestions and Feedback Contact:
klnceitsig@gmail.com