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Vision of the Institution

Vision

Our vision is to impart vibrant, innovative and global education and to make IMS the world leader in terms of excellence of education, research and to serve the nation in the 21st century.

Mission of the Institution

Mission

-  To develop IMSEC as a centre of Excellence in Technical and Management education.
-  To inculcate in its students the qualities of Leadership, Professionalism, Executive competence and corporate understanding.
-  To imbibe and enhance Human Values, Ethics and Morals in our students.
-  To transform students into Globally Competitive professionals.

The vision and mission of the college are available at the college website. These statements are communicated to stakeholders through Information Brochure and have also been displayed at Reception and in each Department and other prominent location of the college.

Vision (Department)

To be recognized as a Centre of Excellence imparting quality education and creating new opportunities for students to meet the challenges of technological development in Computer Science & Engineering.

Mission (Department)

To promote technical proficiency by adopting effective teaching learning processes.—

To provide environment— & opportunity for students to bring out their inherent talents for all round development.

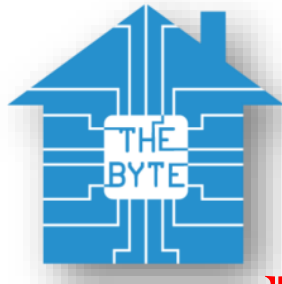
To promote latest technologies in Computer Science— & Engineering and across disciplines in order to serve the needs of Industry, Government, Society, and the Scientific community.

To educate students to be Successful, Ethical and Effective problem-solvers and Life-Long learners—who will contribute positively to the society

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

- 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, review 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.



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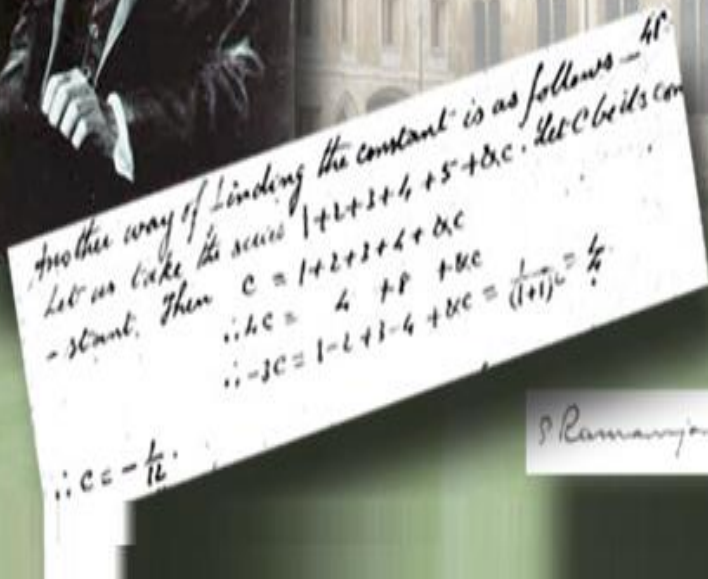
LOOK UP INSIDE

1. *A Tribute to Royal Mathematician*
2. *Cashless payments : Google joins hands with government for consumers awareness*
3. *Top Smartphone features expected in 2017*
4. *Google Teaches machines to become more fluent translators*
5. *Multicore Processors for mobility and industry*
6. *Engineers teaches machines to recognize tree species*



A Tribute to Royal Mathematician (Attempt to awaken intuition from Ramanujan's life)

By : Dr. K.V.V.N.S.Sundari Kameswari



S. Ramanujan

It is very glad to remember Ramanujan on his birthday Dec-22 and this final article on Sri Ramanujan's life is coincidentally is coming out in December.

Ramanujan was awarded a Bachelor of Science degree by research (this degree was later renamed PhD) in March 1916 for his work on highly composite numbers, the first part of which was published as a paper in the Proceedings of the London Mathematical Society. The paper was more than 50 pages and proved various properties of such numbers. Hardy remarked that it was one of the most unusual papers seen in mathematical research at that time and that Ramanujan showed extraordinary ingenuity in handling it. On 6 December 1917, he was elected to the London Mathematical Society. He was elected a Fellow of the Royal Society in 1918, as one of the youngest Fellows in the history of the Royal Society. He was elected "for his investigation in Elliptic functions and the Theory of Numbers." The same year, he was also elected a Fellow of Trinity College the first Indian to be so honoured. In 1918 he was elected a Fellow of the Royal Society, the second Indian admitted to the Royal Society, following Ardaseer Cursetjee in 1841. At age 31 Ramanujan was one of the youngest Fellows in the history of the Royal Society. He was elected "for his investigation in Elliptic functions and the Theory of Numbers." On 13 October 1918, he was the first Indian to be elected a Fellow of Trinity College, Cambridge. He presented three notebooks to the world of mathematics. Later in 1920 G.N.Watson and B.M.Wilson took the task of editing these notebooks.

Towards the end of March 1915, his first winter at Cambridge, he fell ill. By the end of his third year at Cambridge, he was critically ill. And the last two years he was almost confined to sanatoriums and nursing homes. After the world war ended in 1919, Ramanujan returned home but his health continued to deteriorate and on April 20, 1920 he died at the age of 32.

As we say, everyone is different not merely by his appearance, probably by the thinking process also. I just would like to quote an example how different Ramanujan thought. Each number, a pearl to him

If anyone asks us how differently you can write 3

$$3 = 1 + 1 + 1 \text{ or } 3 = 2 + 1$$

But if anyone writes $3 = \sqrt{9}$ as then, he goes in different way

$$\text{Now } 3 = \sqrt{1 + 8} = \sqrt{1 + 2 * 4}$$

$$3 = \sqrt{1 + 2 * \sqrt{16}}$$

Now write $16 = 15 + 1$

$$3 = \sqrt{1 + 2 * \sqrt{1 + 15}} = \sqrt{1 + 2 * \sqrt{1 + 3 * 5}}$$

Now write $5 = \sqrt{25}$

$$3 = \sqrt{1 + 2 * \sqrt{1 + 3 * \sqrt{25}}}$$

$$3 = \sqrt{1 + 2 * \sqrt{1 + 3 * \sqrt{1 + 24}}}$$

$$3 = \sqrt{1 + 2 * \sqrt{1 + 3 * \sqrt{1 + 4 * 6}}} = \sqrt{1 + 2 * \sqrt{1 + 3 * \sqrt{1 + 4 * \sqrt{36}}}} \dots$$

$3 = \sqrt{1 + 2 * \sqrt{1 + 3 * \sqrt{1 + 4 * \sqrt{1 + 5 * \dots}}}}$ a brilliant expression of 3. If anyone thinks that why to write 3 in such a bigger form, but in the other way; the bigger form will give a simple answer 3.

Like this we can prove that

$$n = \sqrt{1 + (-1) * (n + 1)}$$

After going through the example discussed here, one might understand how much he loved the numbers, he played with numbers. Also he prayed for the solutions to the problems day and night. Had he prioritized his family mother and his wife, he would never achieve what he is now for all and our country would not be recognized globally for mathematics to this extent. Goal cannot be accomplished if you are a cat on the wall, unable to decide where to jump.

After through study on Ramanujan's life, I think that one might be able to recognize his inborn talent on the right time. The thought of a person often is influenced by his needs... but rather to keep the needs into corner and bring up the talent indeed first. Anyway we do this first or later, life is not always smooth..it will always have leaps and bounds. Then why do we not think let these hurdles and peaks be with what we like at the right age... we may also be like someone different, someone peculiar, some one recognized by everyone. Why don't we try?

Though everyone knows about Ramanujan, the main intention of presenting Ramanujan story behind is realising the process of plastic thinking prevailing today and then. Let's try to come out from this nutshell. Though it is practically onerous and sometimes impossible, we should always invest the efforts into the thing we passionate. The younger generation should realise about the time and their intuition, the parents must also have a vision of their kid that where he can flourish. But what so may be the process, the destiny of one's life is his own. No one else's.



Aiming to raise awareness about online safety, Google India in collaboration with Ministry of Consumer Affairs on Saturday announced a nationwide 'Digitally Safe Consumer' campaign, as part of a larger effort to help better protect consumer interest online.

As part of this collaboration, Google along with the Department of Consumer Affairs will undertake a yearlong campaign focused on building capacities of consumer organisations, personnel of consumer affairs department and counsellors of National Consumer Helpline on Internet safety and related issues, a statement said here.



Cashless payments: Google joins hands with government for consumer awareness



With the rapid increase in digitisation across all spheres, the message of internet safety needs to be integrated into the everyday tasks that the consumer undertakes online. In order to provide training and information on online safety tools, Google with the help of partner agencies will work towards advocating digital security and privacy needs through 'Digital Literacy, Safety & Security' workshops through a 'Train the Trainer' model for approximately 500 people including 250 consumer organisations across the country, the statement said.

—SHIVANI SINGH ,EC2 2ND



Top Smartphone features expected in 2017

A new year is almost upon us. And we in the world of technology definitely know what that means - new tech that is going to make today's gadgets look positively medieval. Nowhere is that more apparent than in the world of smartphones. Every new year, smartphones continue to dazzle us with their increased and more diverse abilities than the year before. And 2017 is going to be no different when it comes to smartphone technology. Based on multiple rumours about specific devices as well as things being worked on right now, a few trends that are going to hit the smartphone industry are pretty apparent.

Edgeless display

Edgeless or bezel-less displays are definitely going to pick up pace. Xiaomi recently unleashed its Mi MIX concept phone into the market which has brought us the closest we have ever been to true bezel-free design. And if reports are to be believed, the next iPhone and the next Samsung flagship both will be going down the edgeless road next year. We all know what happens after that! Once these two giants successfully launch their devices, pretty soon the market will be flooded with Chinese and other entrants with their own edgeless display variants. The practicality of using OLED screens to build this design along with the accompanying technology is what will make it possible.

Dual Camera

It wouldn't be fair to say that we are still waiting for this. Quite a few manufacturers, including Asus, XOLO, LG, ZTE make dual camera smartphones. But by next year, you'd be seeing them a lot more and almost on phones of all shapes and sizes. And why shouldn't you? Dual cameras are taking photography to new levels. For example, the dual camera in iPhone 7 features a wide angle lens along with a telephoto lens. What this offers is a new depth of field mode, 2X optical zoom, and even a quite well done Bokeh effect.



Augmented Reality

If you honestly haven't heard about Pokemon Go, well, you must have had some REALLY important things to do. Jokes apart, if someone would have told an average smartphone user that next year a game will be introduced that will bring Augmented reality (albeit unpolished) to every smartphone out there, I'm pretty sure they would be laughed at. Cut to 2016, Google has already revealed Project Tango earlier this year on the Lenovo Phab 2 Pro. So it is quite evident that with more powerful internals along with dedicated AR hardware, smartphones are only going to raise their AR game further.

Better battery

We talk about not tech companies not being able to solve the battery problem in smartphones - they still run out of it pretty quick. While smartphones are being launched with increasing battery capabilities regularly, they still have not seen a major leap in terms of battery life, mainly due to size restrictions. All that might change with upcoming tech that allows the designer to literally forget about battery shape and fit a stacked battery literally anywhere they can in the chassis. Also expect LiO2 batteries to increase battery capacity up to 5 times and motion charging to remove the need to plug your chargers.

Really tough screens

Apple is using sapphire in the Apple Watch glass. Sapphire is significantly more resistant to damage than glass and Apple manufacturer Foxconn is reportedly preparing to make its own sapphire ready plant in Taiwan. To put this into perspective, Sapphire scores a 9 on the Mohs scale of mineral hardness. Diamond gets a 10. Well, if Apple does pick this one up we know that a big portion of the smartphone industry is soon to follow, and who are we to complain?



Foldable screen

While a number of phones have sported curved displays over the years, Samsung will reportedly be taking it one step further in 2017 by finally revealing the much-awaited Galaxy X. Patent applications have revealed a hinge design much like the Microsoft Surface Book, with the bottom of the smartphone (where you usually plug the charger in) will also be a ticker-like display. This would be very similar to what Samsung already pushes on the Edge variants of its flagships.

Ultrasonic fingerprint sensor

One of the necessities to facilitate an edgeless display would be a fingerprint scanner that doesn't depend on a physical scanner being on the front. And to make that happen, you need tech like an ultrasonic fingerprint scanner. Xiaomi's Mi5s does already feature one and pretty soon, we expect to see them on more phones.

-ANUBHUTI SINGH ,2EC 2ND YR





Google teaches machines to become more fluent translators

That may sound simple, but it took years of engineering to pull off. Until now, Google's technology analyzed phrases in pieces and then cobbled together a sometimes stilted translation. Now that Google's machines can interpret entire sentences, the translations of extended passages of text should read and sound much more like a native speaker of the language. The technology, dubbed "neural machine translation," is similar to what Google has been using for the past few years to identify people and objects in pictures stored in its Photos service.

Google described its neural machine tool as the biggest leap for its translation service in a decade.

Forrester Research analyst Mike Gualtieri also believes Google's new method is a significant breakthrough, although he said he expects it to make some potentially embarrassing mistakes in its early stages, much like the Photos service misidentified some things when it first rolled out.

"I doubt it will be translating like the computers on 'Star Trek' quite yet," Gualtieri said.

Starting Tuesday, the technology is being used to translate phrases to and from English and eight other languages—French, German, Spanish, Portuguese, Chinese, Japanese, Korean and Turkish.

Those languages cover about one-third of all the translation requests that Google gets. It says that on average it translates about 140 billion words per day for the more than 500 million people who use the service.

Google, part of Alphabet Inc., eventually hopes to apply the neural machine technology on all 103 languages in its translation service.

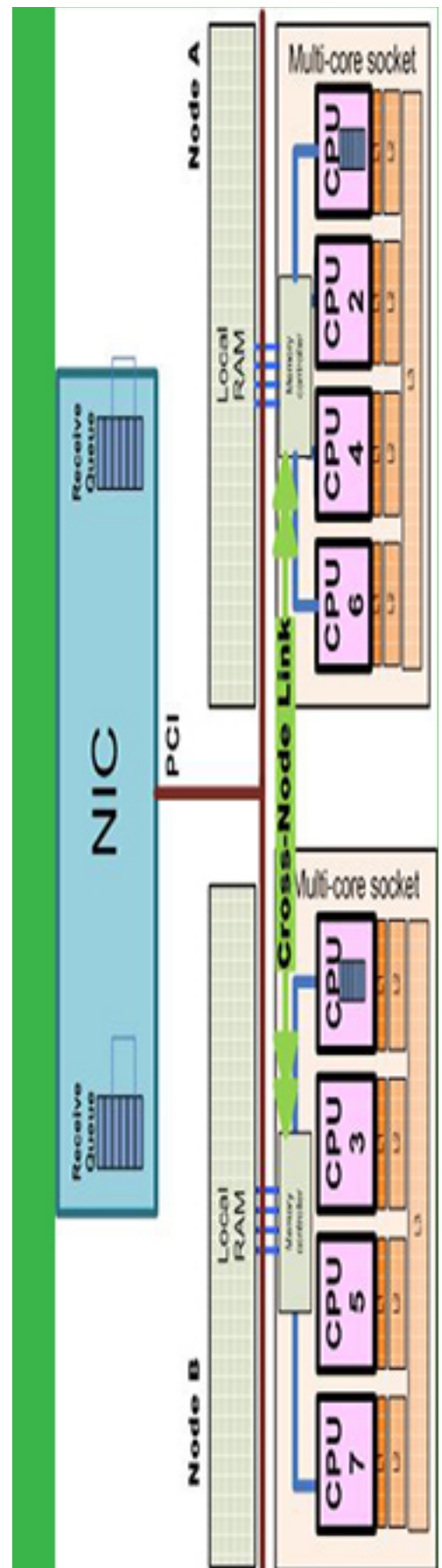
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-Navya Srivastava
2CS 2nd Year

Multi-core processors for mobility and industry 4.0

Safety-critical applications in automobility, aviation, and industry 4.0 will require far more digital computation capacity in the future. This requirement can be met by multi-core technologies. Using demonstrators, the ARAMiS project coordinated by Karlsruhe Institute of Technology (KIT) proved that multi-core processors are suited in principle for safety-critical applications. On this basis, the ARAMiS II project was started recently to study and optimize development processes, development tools, and platforms for the efficient use of industrially available multi-core architectures.

The need for digital computation capacity is increasing enormously. This is also due to highly automated vehicles and interconnected machines with real-time capability, as well as to increasing integration and interaction with other products and services. Use of multi-core technologies allows to considerably increase the computation capacity of systems embedded in vehicles, aircraft, or industrial facilities. Multi-core processors have several processor cores that are run in parallel to reach a higher computation speed. In many applications, such as PCs, tablets, smartphones, they are already applied successfully. Safety-critical applications in mobility and industry, however, have to meet additional complex requirements. "The new ARAMiS II project is aimed at developing indispensable methodological prerequisites to enhance the safety, efficiency, and comfort of using multi-core technologies and to make them available on the industrial scale.





The results of ARAMiS II will be incorporated in standardization activities in the areas covered and supplied to other industry partners. This will maintain or increase the innovative power and international competitiveness of German products on important sales and growth markets," Professor Jürgen Becker, Spokesperson of the Board of KIT's Institute for Information Processing Technology (ITIV), explains. Together with Falco Bapp of ITIV, he coordinates ARAMiS II.

Within the framework of the ARAMiS project, KIT, in cooperation with partners from research and industry, successfully demonstrated that multi-core technologies can be applied for and integrated into safety-critical applications in principle. On this basis, ARAMiS II will study, further develop, and optimize efficient development processes and in particular the systematic tool chain and industrial platforms for the reliable use of multi-core architectures. Demonstrators in the areas of automotive engineering, aviation, and industry automation will confirm applicability of the concepts and methods developed across all domains. During the kick-off meeting on December 01 and 02, 2016, all partners planned their next activities in these six partial projects: Application Cases and Requirements, Structured Multi-core Development, Multi-core Methods and Tools, Multi-core Platforms and Architecture Patterns, Implementation and Evaluation, Validation of Results and Exploitation.

-Richa Bhatnagar
CS3 3rd Year

"...aimed at developing indispensable methodological prerequisites to enhance the safety, efficiency, and comfort..."



Engineers teach machines to recognize tree species

Engineers from Caltech have developed a method that uses data from satellite and street-level images, such as the ones that you can see in Google maps, to create automatically an inventory of street trees that cities may use to better manage urban forests.

Their work is described in the proceedings of the 2016 IEEE Conference on Computer Vision and Pattern Recognition, which was held in Las Vegas this summer.

"Cities have been surveying their tree populations for decades, but the process is very labor intensive. It usually involves hiring arborists to go out with GPS units to mark the location of each individual tree and identify its species," says senior author Pietro Perona, the Allen E. Puckett Professor of Electrical Engineering in the Division of Engineering and Applied Science. "For this reason, tree surveys are usually only done every 20 to 30 years, and a lot can change in that time."

Perona and his team are not expert arborists. Rather, they are leaders in the field of computer vision: they specialize in creating visual recognition algorithms—computer programs capable of "learning" to recognize objects in images—that can see and understand images much like a human would. These algorithms, by replicating the abilities of experts, can sometimes even understand images better than the average person. As part of an ongoing project called "Visipedia," a collaboration with Serge Belongie (BS '95) of the Joan & Irwin Jacobs Technion–Cornell Institute and Cornell University and the Cornell Lab of Ornithology, the engineers have developed algorithms that can recognize the species of a North American bird from a single picture (merlin.allaboutbirds.org/photo-id/).

"...computer vision might be able to help. By analyzing automatically satellite and street-level images that are routinely collected..."



The team eventually hopes to develop Visipedia's capabilities until it can accurately recognize nearly all living things. But they were inspired to turn their attention toward trees when Perona noticed the effects of the years-long California drought on the trees near the Caltech campus in Pasadena.

"I happened to notice that many people in Pasadena were putting drought-resistant plants in their yards to save water, but when they took out the lawns and stopped watering, many trees started dying, and that seemed like a shame," Perona says. "I realized that computer vision might be able to help. By analyzing automatically satellite and street-level images that are routinely collected, maybe we could carry out an inventory of all the trees and we could see over time how Pasadena is changing, whether the trees that are dying are just a few birch trees, which are not native to California and require frequent watering, or whether it's truly a massive change."

-Aman Dhoundiyal
2CS 3rd Year





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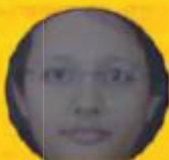


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B.Tech CS.4th yr



Asmita



Aayushi



Akanksha



Arohi



Charchil



Apeksha



Ankita

3rd YR COORDINATORS



Ranjeet, 2nd yr 205

2nd yr COORDINATORS

THE BYTE team wishes full of success, prosperity, happiness and



Happy Newyear

