II Om Shree Manjunathaya Namaha II

MMK & SDM MAHILA MAHAVIDYALAYA

Krishnamurthypuram, Mysore

GI Talk

Girls IT Talk...

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Principal

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Department of Computer Science
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From the Principal's' Desk

It really gives me great pleasure to write a few words in this news letter "GI Talk" brought out by the Computer Science Department of the college. At the outset, I take this opportunity to congratulate Smt. Sukrutha .K.S. and team for taking all efforts to record exuberant activities and achievements of the students and staff of the department in the form of News Letter - GI Talk. Definitely, in the present condition, it goes long way in bringing core activities of the department in general and the College in particular when accreditation by NAAC, ranking by NIRF and other agencies are becoming need of the hour. Moreover, such an attempt of the Computer Science Department will encourage those who have been left out, to come in enthusiasm to participate in overall development of the College and themselves.

GI TALK girls IT talks…. really gave a platform to our women students to show their talents. The number of articles written down in this news letter on computer IT field clearly shows that our vision of 'Empowerment of Women to Build Enlightened Society' has been actualizing. Whoever comes across this news letter will find it useful.

I take this opportunity, along with everyone at SDM_MMK to bestow our respectful 'Pranama' to our Honourable Chairman, Dharmadhikari of Shree Kshethra Dharmasthala Padmavibhushan Awardee Dr D. Veerendra Heggadeji for his everlasting blessings and confidence on us. The management also needs to be applaud for its unstinted support in our endeavor.

May Lord Manjunatha Swamy shower His blessings on all of us.

Prof. Sainath Malligemadu
Principal

Message by HOD

I am very happy that our BCA students have taken up the initiative to publish the 20th issue of Biannual News Letter GI Talk. The News Letter comprises the student and staff activities and achievement of the Department in the Curricular and Co-curricular activities. Department of Computer Science commits to work towards developing Software Engineers with a rich blend of competent, technical and social skills and contribute to nation building. In order to fulfill this, GI Talk News Letter is a platform for students of this Department to explore and galore in IT field.

I congratulate the team of faculty members and the students for their brilliant and sincere efforts. I wish all the Students and Faculty a great academic career. We will be happy to receive reader's suggestions for further improvement and development of the News Letter.

K.S. Sukrutha
HOD, Computer Science

Photo Gallery

The inauguration of the Department Wall Magazine "Tech - World" on 25th July 2017 by Prof. Sainath Malligemadu, Principal of the College accompanied by Mrs Brunda, Head of the Department of English and Coordinator of Literary Club of the College.

Students watching TED Talk on Li-Fi Technology organized by Department of Computer Science on 28th July 2017

Smt. K S Sukrutha, Head of the Department orienting the students of I BCA and I B Sc Computer Science on 20th July 2017

Inauguration of Tech Amateur IT Club by Dr Manjunatha K S, Associate Professor and Head Department of Computer Science, Maharani's Science College for Women Mysuru on 23rd August 2017

Guest Lecture Programme organized by Dept. of Computer Science on the topic Biometric- Its Applications, Opportunities and Challenges by Dr Manjunatha K S, Associate Professor and Head of the Dept. of Computer Science, Maharani's Science College for Women, Mysuru on 23rd August 2017

Newly Elected Office Bearers of Tech Amateur IT Club are seen with Dr Manjunatha K S, Associate Professor and Head of the Dept. of Computer Science, Maharani's Science College Principal, Prof Sainath Malligemadu and Staff members of the Computer Science Dept.

A book titled "Object Oriented Programming with JAVA" authored by Dr. M T Somashekara Dr. D S Guru, Dr K S Manjunatha published by PHI was donated by Dr K S Manjunatha to the Computer Science Department Library.

Students of Bhagini Seva Samaja High School, Krishnamurthypuram, Mysuru who attended "Internet Awareness Programme" organized by the Department of Computer Science on 28th August 2017 are seen with Principal, Prof Sainath Malligemadu and Staff members of the Computer Science Department.

AUTOMATIC CODE REUSE

Researchers at MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) have developed a new system that allows programmers to transplant code from one program into another. The programmer can select the code from one program and an insertion point in a second program, and the system will automatically make modifications necessary - such as changing variable names - to integrate the code into its new context.

Crucially, the system is able to translate between "data representations" used by the donor and recipient programs. An image-processing program, for instance, needs to be able to handle files in a range of formats, such as jpeg, tiff, or png. But internally, it will represent all such images using a single standardized scheme. Different programs, however, may use different internal schemes. The CSAIL researchers' system automatically maps the donor program's scheme onto that of the recipient, to import code seamlessly.

The researchers presented the new system, dubbed CodeCarbonCopy, at the Association for Computing Machinery's Symposium on the Foundations of Software Engineering.

"CodeCarbonCopy enables one of the holy grails of software engineering: automatic code reuse," says Stelios Sidiroglou-Douskos, a research scientist at CSAIL and first author on the paper. "It's another step toward automating the human away from the development cycle. Our view is that perhaps we have written most of the software that we'll ever need - we now just need to reuse it."

The researchers conducted eight experiments in which they used CodeCarbonCopy to transplant code between six popular open-source image-processing programs. Seven of the eight transplants were successful, with the recipient program properly executing the new functionality.

Joining Sidiroglou-Douskos on the paper are Martin Rinard, a professor of electrical engineering and computer science; Fan Long, an MIT graduate student in electrical engineering and computer science; and Eric Lahtinen and Anthony Eden, who were contract programmers at MIT when the work was done.

Mutatis mutandis

With CodeCarbonCopy, the first step in transplanting code from one program to another is to feed both of them the same input file. The system then compares how the two programs process the file.

If, for instance, the donor program performs a series of operations on a particular piece of data and loads the result into a variable named "mem_clip->width," and the recipient performs the same operations on the same piece of data and loads the result into a variable named "picture.width," the system will infer that the variables are playing the same roles in their respective programs.

Once it has identified correspondences between variables, CodeCarbonCopy presents them to the user. It also presents all the variables in the donor for which it could not find matches in the recipient, together with those variables' initial definitions. Frequently, those variables are playing some role in the donor that's irrelevant to the recipient. The user can flag those variables as unnecessary, and CodeCarbonCopy will automatically excise any operations that make use of them from the transplanted code.

New order

To map the data representations from one program onto those of the other, Code Carbon Copy looks at the precise values that both programs store in memory. Every pixel in a digital image, for instance, is governed by three color

values: red, green, and blue. Some programs, however, store those triplets of values in the order red, green, blue, and others store them in the order blue, green, red.

If CodeCarbonCopy finds a systematic relationship between the values stored by one program and those stored by the other, it generates a set of operations for translating between representations.

CodeCarbonCopy works well with file formats, such as images, whose data is rigidly organized, and with programs, such as image processors, that store data representations in arrays, which are essentially rows of identically sized memory units. In ongoing work, the researchers are looking to generalize their approach to file formats that permit more flexible data organization and programs that use data structures other than arrays, such as trees or linked lists.

"In general, code quoting is where a lot of problems in software come from," says Vitaly Shmatikov, a professor of computer science at Cornell Tech, a joint academic venture between Cornell University and Israel's Technion. "Both bugs and security vulnerabilities - a lot of them occur when there is functionality in one place, and someone tries to either cut and paste or reimplement this functionality in another place. They make a small mistake, and that's how things break. So having an automated way of moving code from one place to another would be a huge, huge deal, and this is a very solid step toward having it."

"Recognizing irrelevant code that's not important for the functionality that they're quoting, that's another technical innovation that's important," Shmatikov adds. "That's the kind of thing that was an obstacle for a lot of previous approaches - that you know the right code is there, but it's mixed up with a lot of code that is not relevant to what you're trying to do. So being able to separate that out is a fairly significant technical contribution."

Anusha M
III BCA

CHESTNUTHILL TOWNSHIP TEXT ALERT SYSTEM

CHESTNUTHILL TOWNSHIP -- There is a new way to stay informed in one part of the Poconos. Chestnuthill Township just set up a new text alert service that makes staying informed simple.

John Mathews set up the alerts for a variety of situations. "Emergency events such as the location of an emergency shelter or if there was a water situation, a location of a water buffalo. Large community events such as community day," said Mathews, the township's IT coordinator. So far, about 200 of the township's 17,000 residents have signed up. Alison Jochen says she'll be adding her number to the service soon. "It's nice to know about also when we're away and we'll get alerts you know just to let our neighbors know to kind of check on stuff too," said Jochen of Chestnuthill Township.

"Basically you can sign up through a text message or on our website. And once you sign up you get a confirmation text message and then we can start rolling with the text messages and sending them out," said Mathews. You don't have to live in Chestnuthill Township to sign up for these mobile text alerts. It's also beneficial for people who work or drive through the area on a regular basis. "Yeah, it's close enough. It's close enough for me and I know a lot of people out in this area that would do it," said Jessica Drinkwater. Drinkwater lives nearby in Polk Township and says texting, alerts, and apps on smartphones are how she stays informed - and she'll be signing up too. "Yeah, it'll be a lot easier for me because I don't always have the time to sit down and read a newspaper or go on the television and watch the news," said Drinkwater.

You can sign up by texting "Chestnuthill Township" to 781-728-9542 or by visiting their website www.chestnuthilltwp-pa.gov and clicking on the Photo link "Chestnuthill Township Text Alert System.

MONISHA N- II BCA

Brain-Hacking Tech Gets Real:

5 Companies Leading the Charge

There's been a lot of hype coming out of Silicon Valley in recent months about technology that can meld the human brain with machines. But how will this tech help society, and which companies are leading the charge?Tesla and SpaceX CEO Elon Musk made waves in March when he announced his latest venture, Neuralink, which will design so-called brain-computer interfaces (BCIs). Initially, the BCIs will be used for medical research, but the ultimate goal is to prevent humans from becoming obsolete, by enabling people to merge with artificial intelligence.While these may seem like lofty goals, Musk is not the only one who's trying to bring humans closer to machines. Here are five companies that have doubled down on hacking the brain. [Super-Intelligent Machines: 7 Robotic Futures]

Neuralink

According to Musk, the main barrier to human-machine cooperation is communication "bandwidth."

This means that using a touch screen or a keyboard is a slow way to communicate with a computer. Musk's new venture aims to create a direct "high-bandwidth" link between the human brain and machines.What that system would actually look like is not entirely clear yet. Words like "neural lace" and "neural dust" have been bandied about, but all that has really been revealed is a business model. Neuralink has been registered as a medical research company, and Musk said the firm will produce a product to help people with severe brain injuries within four years.This will lay the groundwork for developing BCIs for healthy people, thus enabling humans to communicate by "consensual telepathy," which could be ready within five years, Musk said. Some scientists, particularly those in the neuroscience community, are skeptical of Musk's ambitious plans.

Facebook

Not to be outdone, just a few weeks after Musk launched Neuralink, Facebook announced that it is working on a way to let people type with their thoughts.

The goal is to build a device that would allow people to "type" up to 100 words per minute, according to Regina Dugan, head of the company's secretive Building 8 research group. Dugan also suggested that the device could work as a "brain mouse" for augmented reality (AR), removing the need to track hand movements to control cursors, The Verge reported. Facebook has also been light on the details of its plans. The company has said it does not think implants are feasible in the long term, so it's focusing on developing some kind of cap that could track brain activity noninvasively, most likely using optical imaging. But this technology doesn't exist yet. So, in the meantime, Facebook said that, within two years, it plans to create a prototype medical implant that would pave the way for future devices.

Kernel

Musk wasn't the first wealthy entrepreneur to dive into the underdeveloped neurotechnology space. Last August, Bryan Johnson, founder of the online payments company Braintree, invested $100 million into the startup called Kernel. The company's initial goal was to develop a chip that could record memories and redeliver them to the brain, based on research by Theodore Berger, a biomedical engineer and neuroscientist at the University of Southern California. But six months later, the two parted ways due to the long timescales involved, reported MIT Technology Review, and the company is now focusing on technology similar to

Neuralink. Kernel plans to build a flexible platform for recording and stimulating neurons, with the goal of treating diseases such

depression and Alzheimer's. But like Musk, Johnson is not afraid to discuss the prospect of using the technology to augment human abilities and merge with machines.

"There's this huge potential to co-evolve with our technology," Johnson told CNBC. Unlike some other companies in this burgeoning industry, Emotiv actually makes products - electroencephalography headsets that record brain activity noninvasively. The technology is lower fidelity than the kinds of neural implants other companies, such as Neuralink, are considering, but it is more established. The company has a research-grade device, called EPOC+, which sells for $799. But it also produces a more consumer-oriented headset, called Insight, which retails for $299.Emotiv also produces a variety of software products that allow users to visualize their brain activity in 3D; measure their brain fitness; and even control drones, robots and video games, reported The Daily Dot. The company was selected to be part of the Disney Accelerator program in 2015, with the aim of creating a "wearable for the brain."

DARPA

Although it's not a company itself, the U.S. military's Defense Advanced Research Projects Agency announced a $60 million program last year todevelop an implantable neural interface in collaboration with a consortium of private companies.

The project, which is a part of former President Barack Obama's BRAIN Initiative, is ambitious. DARPA wants a device that can record 1 million neurons simultaneously and stimulate at least 100,000 neurons in the brain. DARPA also wants the device to be wireless, the size of a nickel and ready in four years, which is an incredibly aggressive deadline, according to MIT Technology Review.

Potential applications include compensating for sight or hearing problems because the device could feed digital auditory or visual information directly into the brain. The exact technological approach is unclear at this stage, but the project has the heft of some major engineering giants, such as Qualcomm, behind it, Quartz reported.

Greeshma S.P. - III BCA

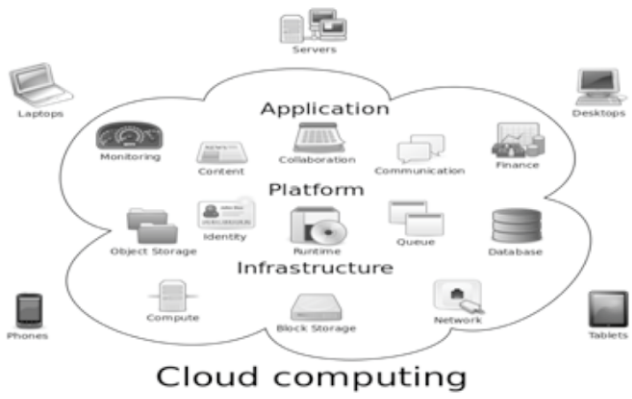
Approximation and online algorithms for multidimensional bin packing: A survey

Abstract

The bin packing problem is a well-studied problem in combinatorial optimization. In the classical bin packing problem, we are given a list of real numbers in and the goal is to place them in a minimum number of bins so that no bin holds numbers summing to more than 1. The problem is extremely important in practice and finds numerous applications in scheduling, routing and resource allocation problems. Theoretically the problem has rich connections with discrepancy theory, iterative methods, entropy rounding and has led to the development of several algorithmic techniques. In this survey we consider approximation and online algorithms for several classical generalizations of bin packing problem such as geometric bin packing, vector bin packing and various other related problems. There is also a vast literature on mathematical models and exact algorithms for bin packing. However, this survey does not address such exact algorithms.

In two-dimensional geometric bin packing, we are given a collection of rectangular items to be packed into a minimum number of unit size square bins. This variant has a lot of applications in cutting stock, vehicle loading, pallet packing, memory allocation and several other logistics and robotics related problems. In -dimensional vector bin packing, each item is a -dimensional vector that needs to be packed into unit vector bins. This problem is of great significance in resource constrained scheduling and in recent virtual machine placement in cloud computing. We also consider several other generalizations of bin packing such as geometric knapsack, strip packing and other related problems such as vector scheduling, vector covering etc. We survey algorithms for these problems in offline and online setting, and also mention results for several important special cases. We briefly mention related techniques used in the design and analysis of these algorithms. In the end we conclude with a list of open problems.

CLOUD COMPUTING



Cloud computing is an information technology (IT) paradigm, a model for enabling ubiquitous access to shared pools of configurable resources (such as computer networks, servers, storage, applications and services),which can be rapidly provisioned with minimal management effort, often over the Internet. Cloud computing allows users and enterprises with various computing capabilities to store and process data either in a privately-owned cloud, or on a third-party server located in a data center - thus making data-accessing mechanisms more efficient and reliable. Cloud computing relies on sharing of resources to achieve coherence and economy of scale, similar to a utility.

Advocates note that cloud computing allows companies to avoid or minimize up-front IT infrastructure costs. As well, third-party clouds enable organizations to focus on their core businesses instead of expending resources on computer infrastructure and maintenance.Proponents also claim that cloud computing allows enterprises to get their applications up and running faster, with improved manageability and less maintenance, and that it enables IT teams to more rapidly adjust resources to meet fluctuating and unpredictable businessdemand. Cloud providers typically use a "pay-as-you-go" model. This could lead to unexpectedly high charges if administrators are not familiarized with cloud-pricing models.

In 2009 the availability of high-capacity networks, low-cost computers and storage devices as well as the widespread adoption of hardware virtualization, service-oriented architecture, and autonomic and utility computing led to a growth in cloud computing. Companies can scale up as computing needs increase and then scale down again when demands decrease. In 2013 it was reported that cloud computing had become a highly demanded service or utility due to the advantages of high computing power, cheap cost of services, high performance, scalability, and accessibility - as well as availability. Some cloud vendors experience growth rates of 50% per year, but while cloud computing remains in a stage of infancy, it has pitfalls that need to be addressed to make cloud-computing services more reliable and user-friendly.

INCHARA .R - II BCA

Student Activities:

- A group of seven students from II and III BCA participated in various competitions of IT Fest held at Mahajana PG Centre, Mysore on 21st and 22nd September 2017. Ms Yashaswini K M, Ms Monica M, Ms Jeevitha V, Ms Yadhumitha R, Ms Moulya U, Ms Monisha M L and Chaithra Hegde. Ms. Yadhumitha R of II BCA won Second Prize in Pick and Click Competition.
- Ms. Yashaswini K M and Ms.Monica of III BCA participated in Inter Collegiate Quiz held at Gopalswamy(GSS) College on 28th September 2017.
- Hamsini M., Jeevitha, Camps attended Sports Prize winners & Cultural Prize winners.
- On Nov 9th 2017, Hansini S. Kumar, II BCA won the title voice of Mysore which was organised by Sri Shankara Channel and won 1st place at National LevelAIR Competition in the category of light music.
- Aishwarya, II B.Sc., Gagana - III B.Com, Amrutha - III B.Sc was awarded Rajya Puruskara Award which was organised by State Rangers Unit.

LaCie

• Storing your files on this mobile hard drive gives you multiple levels of protection because it uses advanced encryption and biometric authentication technology.

• The Safe uses 128-bit AES encryption (Advanced Encryption Standard) which is the same standard used by governments to protect top secret information.

• Encryption converts information that is readable into a mixture of unreadable characters. Decryption processes the encrypted unreadable characters back into a readable format.

• The algorithm that encrypts and decrypts the information is known as a cipher. The cipher allows access to the readable information when you enter a password.

• Most ciphers will use passwords that are four to eight characters in length, but a 128-bit AES cipher uses a 16 character password which is extremely difficult to hack.

• The AES cipher or "Rijndael" (pronounced Rein Dahl) is named after the Belgian inventors Joan Daemen and Vincent Rijmen.

• Biometric authentication is a technology that recognizes physical or behavioral characteristics such as fingerprints, palm geometry, retina patterns, voice and signature. Fingerprint recognition is the most popular because it's easier to use.

• Your finger is scanned for minutia, which are the points on a fingerprint where a ridge ends or splits into two. An algorithm extracts the minutia points and creates a template image that is used for authentication.

Source: lacie.com

COMPUTER INVENTION

This digital pen is a computer invention that transmits writing into digital media.

Although touch screen devices represent a movement away from paper, approximately eighty-percent of businesses still use paper based forms.

Many professions hand-write their notes, tables, diagrams and drawings instead of using tablets or other devices.

The computer pen is comparable to a regular ink pen (even uses refillable ink) that writes on regular paper, except it has an optical reader that records motion, images and coordinates. The recorded data is then transmitted to a computer via a wireless transmitter.

You can browse and edit your written notes, diagrams, tables, or drawings.

Another useful feature of this computer invention is that hand-written digital files can be easily converted into text fonts for use in word documents or emails.

Digital pen technology was first developed by the Swedish inventor and entrepreneur Christer Fåhraues.

Fåhraues is a physician and has an honorary doctorate degree in technology from Lund University in Sweden, and a M.Sc. degree in Bioengineering from the University of California San Diego.

Fåhraues served as the Chief Executive Officer and Chairman of Anoto Group AB, a company he originally founded in 1996 as C Technologies to license his digital pen technology.

This computer invention has been licensed to companies around the world for various commercial products. Applications include data/signature capture, completing forms, mapping, surveying, document management, paper replay, whiteboards, toys and education. There are great expectations for digital pen technology over the next few years. Sources: Anoto; Logipen

DIVIJA - I BCA

Atomic Fingerprinting' Tech Could End Counterfeit Goods

In the sophisticated world of counterfeiting, it can often be difficult to tell fakes from the real deal. But now, scientists have developed a new method that can stamp things with "atomic fingerprints" to keep phony products at bay.

"There is no bigger crime than counterfeit crime," said Robert Young, a professor of physics at Lancaster University in the United Kingdom and chief technology officer of the tech startup Quantum Base. [Faux Real: A Gallery of Forgeries]

Earlier this month, Young and his colleagues announced a relatively simple technique for confirming the authenticity of an object - an advance that could put a dent in the counterfeit industry, where fakes, forgeries and imitations cost the global economy half a trillion dollars in lost revenue each year, according to the most recent data from the Organization for Economic Co-operation and Development, headquartered in Paris.

The new anti-counterfeiting method, published online in ArXiv, the open-access preprint journal from Cornell University, has two components: a unique molecular pattern that can be incorporated into a holographic label and a smartphone app.

The unique pattern is created by intentionally fabricating flaws into an atom-thin layer of material, such as graphene oxide. Flaws may include removing a carbon atom, or adding extra oxygen atoms, or creating a ridge of atoms, according to the researchers. Once the flaw is set, the material is incorporated into an ink and then, using an inkjet printer, printed onto a hologram, which can be added as a label to any product.

To confirm the presence of the atomic pattern, a person would use a smartphone camera and its built-in flash to photograph the label. The flash excites the atoms, which produce a unique color based on the pattern. A corresponding app can instantly analyze the image and confirm whether the label is authentic or not, the researchers said.

"I'm really satisfied by how simple it is," Young told Live Science.

Solving such an extensive problem like counterfeiting requires a solution that can be adopted by a large number of people, Young added. A technique that's easy to incorporate and easy to analyze could ensure that it's widely adopted much faster, he said.

Young and his team are working with a company that prints 10 billion holograms per year and said that the first application could be in the automotive industry, where parts are already spray-painted with labels. By piggybacking onto existing manufacturing applications, the researchers can prove that the method works, according to Young.

"We're expecting the first products in market in the first quarter of next year, in 2018," he said.

From there, the researchers would like to branch out to other industries, including pharmaceuticals, where $200 billion a year is lost from counterfeit drugs, Young said. And what's worse, this illegal medicine can sometimes lead to death.

"Thirty percent of counterfeit pharmaceuticals don't contain the correct active ingredient," Young said. "People buy these things, believe they're real, but they're not being treated for the disease."

Young said that eventually, the atomic fingerprints his team has developed could be laminated directly onto individual pills.

"This is genuinely a really exciting application," he said.

JEEVITHA V. - III BCA

NEW 3-D CHIP COMBINES COMPUTING AND DATA STORAGE

Advance points toward new generation of computers for coming superstorm of data.

As embedded intelligence is finding its way into ever more areas of our lives, fields ranging from autonomous driving to personalized medicine are generating huge amounts of data. But just as the flood of data is reaching massive proportions, the ability of computer chips to process it into useful information is stalling. Computers today comprise different chips cobbled together. There is a chip for computing and a separate chip for data storage, and the connections between the two are limited. As applications analyze increasingly massive volumes of data, the limited rate at which data can be moved between different chips is creating a critical communication "bottleneck." And with limited real estate on the chip, there is not enough room to place them side-by-side, even as they have been miniaturized (a phenomenon known as Moore's Law). To make matters worse, the underlying devices, transistors made from silicon, are no longer improving at the historic rate that they have for decades.

The new prototype chip is a radical change from today's chips. It uses multiple nanotechnologies, together with a new computer architecture, to reverse both of these trends.

Instead of relying on silicon-based devices, the chip uses carbon nanotubes, which are sheets of 2-D graphene formed into nanocylinders, and resistive random-access memory (RRAM) cells, a type of nonvolatile memory that operates by changing the resistance of a solid dielectric material. The researchers integrated over 1 million RRAM cells and 2 million carbon nanotube field-effect transistors, making the most complex nanoelectronic system ever made with emerging nanotechnologies. The RRAM and carbon nanotubes are built vertically over one another, making a new, dense 3-D computer architecture with interleaving layers of logic and memory. By inserting ultradense wires between these layers, this 3-D architecture promises to address the communication bottleneck.

However, such an architecture is not possible with existing silicon-based technology, according to the paper's lead author, Max Shulaker, who is a core member of MIT's Microsystems Technology Laboratories. "If you then build a second layer of silicon circuits on top, that high temperature will damage the bottom layer of circuits."

The key in this work is that carbon nanotube circuits and RRAM memory can be fabricated at much lower temperatures, below 200 C.

This provides several simultaneous benefits for future computing systems. "The devices are better: Logic made from carbon nanotubes can be an order of magnitude more energy-efficient compared to today's logic made from silicon, and similarly, RRAM can be denser, faster, and more energy-efficient compared to DRAM," Wong says, referring to a conventional memory known as dynamic random-access memory.

"The new 3-D computer architecture provides dense and fine-grained integration of computating and data storage, drastically overcoming the bottleneck from moving data between chips," Mitra says. "As a result, the chip is able to store massive amounts of data and perform on-chip processing to transform a data deluge into useful information."

To demonstrate the potential of the technology, the researchers took advantage of the ability of carbon nanotubes to also act as sensors. On the top layer of the chip they placed over 1 million carbon nanotube-based sensors, which they used to detect and classify ambient gases.

Three-dimensional integration is the most promising approach to continue the technology scaling path set forth by Moore's laws, allowing an increasing number of devices to be integrated per unit volume.

"It leads to a fundamentally different perspective on computing architectures, enabling an intimate interweaving of memory and logic. "These structures may be particularly suited for alternative learning-based computational paradigms such as brain-inspired systems and deep neural nets, and the approach presented by the authors is definitely a great first step in that direction."

The team is working to improve the underlying nanotechnologies, while exploring the new 3-D computer architecture. the next step is working with Massachusetts-based semiconductor company Analog Devices to develop new versions of the system that take advantage of its ability to carry out sensing and data processing on the same chip.So, for example, the devices could be used to detect signs of disease by sensing particular compounds in a patient's breath.

Interesting Facts About Computers

1. Only 8% of the world's currency is physical money, the rest only exists on computers.

2. The worst breach of U.S. military computers in history happened when someone picked up a memory stick (infected by a foreign intelligence agency) they found in the parking lot and plugged it into their computer, which was attached to United States Central Command.

3. Investigators missed incriminating Google searches done on Casey Anthony's computer - including "fool-proof suffication [sic]" - because they checked her Internet Explorer history, but ignored Firefox.

4. In 1978, Apple Corps (owned by The Beatles) sued Apple Computer for trademark infringement. The case settled for $80,000 along with the condition that Apple Computer should not enter the music business, and Apple Corps agreed not to enter the computer business.

5. The Motion Picture Academy refused to nominate Tron (1982) for a special-effects award because, according to director Steven Lisberger, "The Academy thought we cheated by using computers"

6. Mary Kenneth Keller, the first woman to earn a Ph.D. in Computer Science in the United States also earned a Master's degree in Mathematics and Physics, helped develop computer programming languages and she was a Catholic nun.

7. John Lasseter (CEO of Pixar) was fired from Disney for promoting computer animation .

8. Illegal prime numbers exist. An illegal prime is a prime number that represents information which is forbidden to possess or distribute. For example, when interpreted in a particular way, a certain prime describes a computer program that bypasses the digital rights management scheme used on DVDs .

9. The new Texas Instrument calculators have ABC keyboards because if they had QWERTY keyboards, they would be considered computers and wouldn't be allowed for standardized test taking

10. 40-55% of all Wikipedia vandalism is caught by a single computer program with 90% accuracy .

11. A wow player "Bradster" has 36 wow accounts and conducts raids with himself on 11 computers .

12. Three students from a school in Nevada had installed keystroke loggers on their teachers' computers to intercept the teachers' usernames and passwords, and then charged other students up to $300 to hack in and increase their grades.

13. In 1936, the Russians made a computer that ran on water.

14. In July, after receiving a warning from the FBI on his PC, Washington resident Jay Matthew Riley turned himself into police for possessing child pornography. The warning was fake and generated by a worm that had infected his computer.

15. Big banks don't process checks and debit card charges to your account in order they're recived, but instead use a computer program that selects the biggest amount first and charges them against your account ; emptying your account faster and resulting in more overdraft fees(profit).

16. A 15yrs old hacked NASA computers and caused a 21-day shutdown of their computers . He hacked pentagon weapons computer too...

17. In September 1956 IBM launched the 305 RAMAC, the first SUPER computer with a hard disk drive(HDD). The HDD weighed over a ton and stored 5MB of Data.

18. A computer as powerful as the human brain would be able to perform about 38 thousand trillion operations per second and hold about 3,584 terabytes of memory.

19. US chose 00000000 as the password for its computer controls of nuclear tipped missitles for eight years.

20. Although 95% of mail is now stored by computers, the US Postal Service still employs clerks to decipher addresses that are too messy for the computers to understand. These clerks are expected to process 1,000 letters an hour, and upwards of 20% of them quit within the first 5 weeks.

21. The first entirely computer generated movie sequence in cinema history was the Genesis Device demonstration video in Star Trek II: The Wrath of Khan. The studio that made the scene would later become Pixar.

22. MIT has developed a computer software that can identify and distinguish a real smile from a smile of frustration.

23. CAPTCHA is an acronym for "completely Automated Public Turing test to tell computers and Humans Apart".

24. In some countries during the 70s, including the United Kingdom, Poland, Hungary, and the Netherlands, cassette data storage was so popular that some radio stations would broadcast computer programs that listeners could record onto cassette and then load into their computer.

25. There is a Scandinavian company that is working on a way to translate what a dog is thinking using EEG-sensors and microcomputers. They already have a prototype available.

26. In 1988, when the American Internet was paralyzed by a computer virus, quick thinker Pal spiller saved the Norwegian Internet by literally pulling the plug.

27. The first actual computer "bug" was a dead moth which was stuck in a Harvard Mark II computer in 1947.

LAKSHMI SUCHETHA - II BCA

Green Computing

Green computing refers to the practice and procedures of using computing resources in an environment friendly way while maintaining overall computing performance. Global warming is the continuing rise in the average temperature of the Earth's climate system due to a range of factors. Scientific understanding of the various causes of global warming has been increasing since the last decade. Climate change and associated impacts vary from region to region across the globe.

INTRODUCTION

Green computing, Green ICT as per IFG International Federation of Green ICT and IFG Standard, green IT, or ICT sustainability, is the study and practice of environmentally sustainable computing or IT . San Murugesan notes that Green IT "is the study and practice of designing, manufacturing, using, and disposing of computers, servers, and associated subsystems-such as monitors, printers, storage devices, and networking and communications systems - efficiently and effectively with minimal or no impact on the environment".

Murugesan lays out the following four paths along which he believes the environmental effects of computing should be addressed:

1. Green Use: Reducing the energy consumption of computers and other information systems as well as using them in an environmentally sound manner.

2. Green Disposal: Refurbishing and reusing old computers and recycling unwanted computers and other electronic equipment.

3. Green Design: Designing energy efficient and environmentally sound components, computers, servers and cooling equipments.

4. Green Manufacturing: Manufacturing electronic components, computers and other associated sub systems with minimal impact or no impact on the environment.

These four paths cover a number of central areas and activities such as: design for environmental sustainability energy-efficient computing power management data center design, layout and location, server virtualization, responsible disposal and recycling regulatory compliance green metrics, assessment tools and methodology, environment-related risk mitigation use of renewable energy sources and eco-labelling of IT products. Green computing is all about the efficient use of computers and computing .Green computing can also develop solutions that offer benefits by "aligning all IT processes and practices with the core principles of sustainability, which are to reduce, reuse, and recycle; and finding innovative ways to use IT in business processes to deliver sustainability benefits across the enterprise and beyond" .The goals of green computing are quite similar to green chemistry which are to reduce the use of hazardous materials, maximize energy efficiency during the product's lifetime, and promote the recyclability or biodegradability of non-operational

products and factory waste .IT departments of many corporate are investing both time and money in green computing initiatives to reduce the environmental impact of their IT operations.

Green I.T Advantages

The following are some of the advantages of green I.T:

1. Enterprises with the technology and vision to produce products and services that address environmental issues enjoy a competitive edge because many customers when making purchasing, leasing, or outsourcing decisions, have started to consider the service providers' environmental records and initiatives .

2. Organizations face lower energy costs and even save a lot on government taxes when they follow government policies on environment and produce goods following strict environment norms.

3. Investors and consumers are beginning to demand more disclosures from companies with regard to their carbon footprint as well as their environmental initiatives and achievements, and they have started discounting share prices of companies that poorly address the environmental problems they create. As a result of which, many businesses have begun showing their environmental credentials. For instance, the Carbon Disclosure Project is a recent initiative to request global companies to disclose their carbon emissions .

Preeti .B - III BCA

Automated Parking System using RFID Technology

Introduction

Automated Parking System using RFID Technology Project is mainly based on the RFID technology. There has been a considerable amount of reduction in transaction costs and decrease in stock shortage with the use of Radio Frequency Identification (RFID) technology in automation. Most of the RFID networks include a wide range of automation technologies.

These technologies are RFID readers, RFID writers, RFID barcode scanners, and RFID controllers. In this study, a solution has been provided for the problems encountered in parking-lot management systems via RFID technology. RFID readers, RFID labels, computers, barriers and software are used as for the main components of the RFID technology.

The software has been handled for the management, controlling, and operation tasks for parking lots. Check-ins and check-outs of the parking-lots will be under control with RFID readers, labels and barriers. Check-ins and check-outs will be handled in a fast manner without having to stop the cars so that traffic jam problem will be avoided during these processes

Since there won't be any waiting during check-ins and check-outs the formation of emission gas as a result of such waiting will be avoided. Therefore, by this project we develop a parking system for an organization to have automated parking system for making best use of space, decreasing the man power and providing authentication for the vehicles from avoiding the theft.

Salient Features

1. RFID active tags can be affixed to vehicles for activating hands-free access to communities and parking lots.

2. The RFID reader can also trigger surveillance cameras or video recorders whenever a vehicle enters or exits the controlled area.

Benefits

1. Provides full inventory history of cars at each location,

2. Enables full control of inventory content and location for cars in the facility,

3. Gives automatic notification when a car enters or leaves the lot,

4. Initiates an alarm when an unauthorized vehicle enters or leaves the lot,

5. Eliminates manual record keeping, thereby increasing accuracy and staff productivity.

At the parking Lot:

It provides check-ins and check-outs of the vehicles at the parking place. The person who is entering the parking area his or the vehicles information is read by the RFID reader, the RFID then checks the database to see whether is a registered person or not and the barrier gets opened by allotting a slot to park his vehicle. Check-in time of the vehicle is noted. When he is checking out of the place the check time of the vehicle is noted and the vehicle is authenticated with his ID card. Suppose an unauthorized user is taking the vehicle, then the barrier doesn`t get opened. No vehicle can be parked without registering with the organization. Only the persons who had registered their vehicles with the organization can only park.

Benefits

1. Computes data and facts about the vehicles entering and exiting the parking area, (This includes the time of entry, date of entry and the amount that the customer is subjected to pay as per the parked hours)

2. User friendly, easy to operate.

3. Time saving: eliminates lines and traffic jams on both entrance and exit, response time under 1 sec.

4. Special reserved parking for staff etc.

Sahana .L, I BCA

DIGITAL JEWELLERY

Digital jewellery is the fashion jewellery with embedded intelligence. It can help you in solve problems like forgotten passwords and security badges . It will be the evolution in digital technology.

Some computerized-jewelry phone and their functions:

Earrings: Speakers embedded into these earrings will be the phone's receiver.

Necklace : Users will talk into the necklace's embedded earphone.

Ring : The most interesting piece of the phone, "magic decoder ring" is equipped with LED (light emitting diode) that flash to indicate an incoming call. It can also be programmed to flash different colors to identify particular caller or indicate the importance of the call.

Bracelet : Equipped with a video graphics array(VGA)display, this wrist display could also be used as caller identifier that flashes the name and phone number of the caller

With a jewelry phone, the keypad and dialing could be integrated into the bracelet, or else dumped altogether-it's likely that voice recognition software will be used to make calls, a capability that is already common place in many of today's cell phone.

The mouse-ring that IBM is developing will use the company's track point technology to wirelessly move the cursor on a computer-monitor display.IBM researchers have transferred track point technology to a ring, which looks like a black-pearl ring. This track point ring will be valuable when monitors shrink to the size of watch face.

TECHNICAL SPECIFICATIONS OF DIGITAL JEWELRY:

Digital jewelry devices consist of a screen or display for information, most likely consisting of 7-16-segemnt or dot matrix LEDs, LCDs, or other technologies such as electroluminescent material (EL) or others, which could become an optional display.

DISPLAY TECHNOLOGIES

Digital jewelry can be made in many different sizes and shapes with a variety of materials ranging from plastic and metal to rubber and glass. They utilize electromagnetic properties and electronics to display information through a screen. This could range from LED 7-segment,16-segment, dot matrix and other programmable LEDs devices to LCDs, OLEDs, and other displays which are all driven by the self-obtained jewelry devices themselves.

Photo Gallery

Interclass IT Quiz Competition organized by the Department of Computer Science on 11th September 2017.

Alumni Faculty Programme was organized for III BCA students on 9th September 2017. Smt Nirmala M S, Assistant Professor of Computer Science, Maharanis's Science College, JLB Road, Mysore who is an Alumnus from the batch 1997- 2000 gave a lecture on the topic "Operation Research - Assignment & Job Sequencing Problems".

Ms. Keerthana Urs of II BCA gave a Lecture on the topic Number Systems to I B Sc students on 14th September 2017 as part of Student Faculty program.

Ms. Chaithra S Hegde of II BCA gave a Lecture on the topic Structures and Unions to I B C A students on 13th September 2017 as part of Student Faculty program.

Ms. Aishwarya P of II BCA gave a Lecture on the topic Computer Languages and Block diagram of a Computer to I B Sc students on 13th September 2017 as part of Student Faculty program.

Ms. Chaithra S of II BCA gave a Lecture on the topic Software Development Life Cycle to I B C A students on 22nd September 2017 as part of Student Faculty program.

Ms. Harshitha K N of II BCA gave a Lecture on the topic Boolean Algebra to I B Sc students on 28th September 2017 as part of Student Faculty program.

Release of 19th issue of Biannual News Letter GI Talk.

CONGRATULATIONS TO ALL THE Toppers WHO HAVE SECURED HIGHEST MARKS IN THE UNIVERSITY EXAMINATION HELD DURING MAY/JUNE 2017

Rashmi Urs
94/100 - I B.Sc.

Likeetha
90/100 - I B.Sc.

Poojitha H S
89/100 - I B.Sc.

Sahana H D
89/100 - I B.Sc.

Rashmi Hebbar
92/100 - II B.Sc.

Harshitha Urs
85/100 - II B.Sc.

Ranjitha N
82/100 - II B.Sc.

Meghana Patel
268/300 - III B.Sc.

Pallavi K
230/300 - III B.Sc.

Abhilasha H
238/300 - III B.Sc.

Yashaswini M A
353/400 - I BCA

Chaithra S Hegde
352/400 - I BCA

Chaithra S
351/400 - I BCA

Yashawini K M
557/600- II BCA

Preethi B S
545/600 - II BCA

Monica M
543/600 - II BCA

Rachitha
194/200 - III BCA

Preriths S
194/200 - III BCA

Jeevitha M
193/200- III BCA

Raksha Nagesh
191/200 - III BCA

Ramya N
191/200 - III BCA

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