MES COLLEGE OF ARTS, COMMERCE AND SCIENCE
DEPARTMENT OF COMPUTER SCIENCE

AAKRITI

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Dr. D. Leelavathi, Principal
Smt. Durgakala Sridhar, HOD

Principal's Message

MES has been a place of innovations. This year also saw many innovative methods unfolding in various departments. The Computer Science Department has come up with this idea of E-Newsletter called "AAKRITI" for the department. This E-newsletter gives them a platform to share their ideas on the recent developments in the continuously changing computing technology field and thus keep them up to date. This in turn will help the students to think beyond curriculum.
This is the first issue. I extend my best wishes and compliments to the department for this innovation. I would like to see more and more participation of the students in future so that this becomes a continuing best practice of the department.

Head of the Department Message

Today we find that information technology has become overwhelmingly pervasive, while its parent, computing science, has become correspondingly hard to find. While many CS educational institutions have shifted focus from core CS and become specialty providers for the IT industry, a few institutions like ours continue to emphasis the pristine science underlying the diverse aspects of computing.
In our Department, we believe that persons who are clear and thorough with the fundamentals of Computer Science can adapt to rapid changes in technology relatively easily. We want the education imparted to our students to be the foundation of a life time of learning.

Learning is a continuous process and does not end once you acquire a degree. We do not aim to make our students walking manuals of any language or package. Instead, they are given a strong foundation in computer science and problem-solving techniques, and are made adaptable to changes and learning new evolving technologies as and when required.

Moreover, we also lay emphasizes on interdisciplinary team work, communication skills along with lifelong learning. We strive to ensure that our graduates understand the value of service to their profession and society through involvement in community, state, and national organizations.

I would like to invite you to browse through the first issue of our E-Newsletter entitled "AAKRITI" and appreciate the efforts put in by our students. We look forward to your involvement with us. Happy Reading!!

Contents

Upcoming Events

- Poster Presentation
- Power Point Presentation
- IT Fest
- Algorithm Enacting

PEER TO PEER FILE SHARING

Naveen, I J

1.Peer to peer file sharing

P2P file sharing media files allows users to access files such as books, music, movies, and games using a P2P software program that searches for other connected computers on a P2P network to locate the desired content. The nodes (peers) of such networks are enduser computers and distribution servers (not required). Example : torrent ..etc

2.Torrent file

In the BitTorrent file distribution system, a torrent file or METAINFO is a computer file that contains metadata about files and folders to be distributed, and usually also a list of the network locations of trackers, which are computers that help participants in the system find each other and form efficient distribution groups.And torrent file is just the link to download requested file.

❖ Example of sites with torrent files... Piratebay , limetorrent s, zooqle .

3.Client app, and torrent download

❖ After finding the torrent file or the link..We must require a torrent client system ..which may be Bit Torrent or uTorrent or anything else ...a simple click on the link will begin the download and take us directly t o download box of installed torrent client app...which indicates download has already begun.

4.Seed back

❖ Seeding is where you leave your Torrent

❖ client open your download to help distribute it (you distribute the file while Bit after you've finished downloading,

but it's even more helpful if you continue to distribute the full file even after finished you have downloading)..that's the reason why even after downloading some file ,it will be using the internet and keep on uploading.

Sketch by Ramya, I G

BOSQUE

Anirudh Balige, I F

Introduction:

Microsoft Research has introduced a new open source programming language called Bosque that aspires to be simple and easy to understand by embracing algebraic operations and shunning techniques that create complexity.

Bosque was inspired by the syntax and types of TypeScript and the semantics of ML and Node/JavaScript. It is an effort to move beyond the structured programming model that became popular in the 1970s.

Marron, the founder of Bosque, believes we can do better by getting rid of sources of complexity like loops, mutable state, and reference equality. He calls it "regularized programming." This form eliminates major sources of errors, simplifies code understanding and modification, and converts many automated reasoning tasks over code into trivial propositions.

The Big Three:

Eliminating mutable state, loops, and reference equality represent the big three.Bosque addresses five major sources of accidental complexity. These are ‘Mutable State and Frames’, ‘Loops, Recursion and Invariants’, ‘Indeterminate Behaviours’, ‘Data Invariant Violations’ and ‘Equality and Aliasing.’ Bosque approaches conditionals in a different way -- ‘Functors’ which serves the purpose of ‘loop’ and can increase software quality.

"In the academic literature the associated problems of strong-updates, loop-invariants, and alias analysis have been all been worked on extensively for 30+ years and still remain large open problems," he said. "By eliminating these features, and the need to solve the associated problems, many things like symbolic-execution reduce down to conceptually simple tasks (as first described by Floyd, Hoare, and Dijkstra)."

He said he has two interns this year, from the University of New Mexico and the University of Colorado Boulder, who will be focused on more advanced developer tooling experiences, like verifying applications are free of runtime errors without additional programmer effort and automatically setting bounds for memory usage over time.

Conclusion:

If Bosque finds a place in the development ecosystem outside of academic experimentation, Marron believes it may be in the cloud or IoT space since Bosque code can be compiled into a small footprint, can start quickly, and can be verified for correctness through symbolic analysis.

Sources:

1) https://www.theregister.co.uk/2019/04/18/microsoft_bosque_programming_language/
2) https://mspoweruser.com/microsofts-new-programming-language-bosque-has-no-love-for-loops/

For code examples, head on to: https://github.com/Microsoft/BosqueLanguage

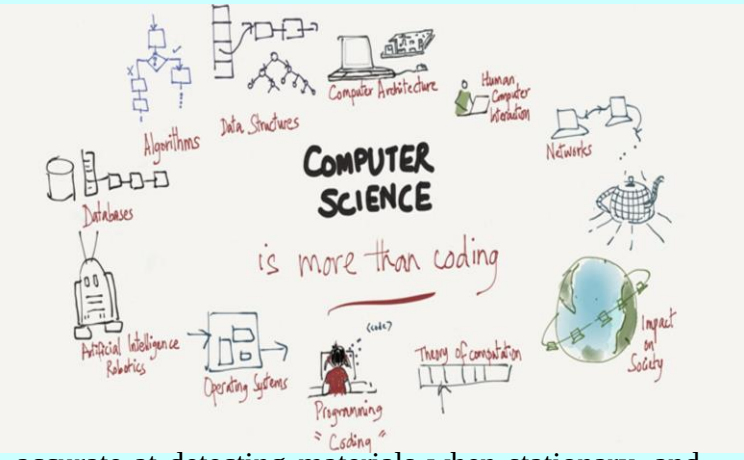
ROBOTS THAT CAN SORT RECYCLING

K Suresh, II F

Every year trash companies sift through an estimated 68 million tons of recycling, which is the weight equivalent of more than 30 million cars. Now that manual work is difficult.

With that in mind, a team led by researchers at MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) has developed a robotic system that can detect if an object is paper, metal, or plastic.

The team's "RoCycle" system includes a soft Teflon hand that uses tactile sensors on its fingertips to detect an object's size and stiffness. Compatible with any robotic arm, RoCycle was found to be 85 percent accurate at detecting materials when stationary, and 63 percent accurate on an actual simulated conveyer belt.



Reference Link: http://news.mit.edu/2019/mit-

HOW DO SEARCH ENGINES WORK?

Pradyumna Vasishta, II F

Have you ever wondered how many times per day you use Google to search the web? Is it 5 times, 10 times or even sometimes more? Did you know that Google alone handles more than 2 trillion searches per year? It's hard to think of a time before Google. A time where if you wanted to inquire information on a subject you'd actually have to actually go to the library, read books, and conduct research.

But search engines have made our life easy. Search engines are programs that search an index of the World Wide Web for keywords and display the results in order. Search Engines like Google and Yahoo have made an impeccable impact on society, changing the way we receive and interpret data.

So let us see how they actually work.

Every search engine has three main functions: crawling (to discover content), indexing (to track and store content), and retrieval (to fetch relevant content when users query the search engine).

Crawling involves scanning sites and collecting details about each page: titles, images, keywords, other linked pages, etc. Different crawlers may also look for different details, like page layouts, where advertisements are placed, whether links are crammed in, etc. An automated program (called a "spider" or "crawler") visits page after page as quickly as possible, using page links to find where to go next. Once a spider has crawled a web page, the copy that is made is returned to the search engine and stored in a data center. Data centers are huge, purpose built collections of servers which act as a repository of the all the copies of web pages being made by the crawlers. The repository of web pages is referred to as the 'Index', and it is this data store which is organized and used to provide the search results you see on the search engine.

Finally, we have a huge collection of web page copies which are being constantly updated and organized according to the query of the user. Retrieval is when the search engine processes the users search query and returns the most relevant pages that match the query. Ranking algorithms check your search query against billions of pages to determine each one's relevance.

All these process take a fraction of second to execute. Hence as a result, the relevant search results are in front of the user immediately.

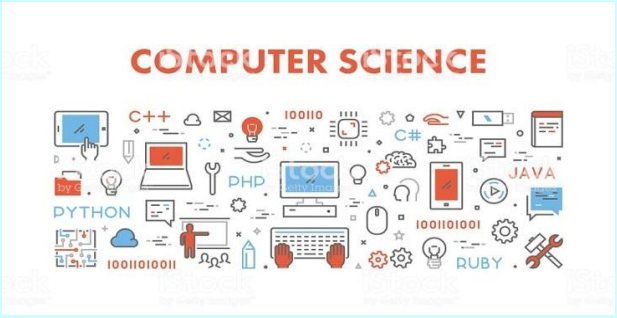
References: https://www.lifewire.com/how-does-search-engine-work

https://www.deepcrawl.com/knowledge/technical-seo-library/how-do-search-engines-work

Linux Based Free OS

Tanmay Bhatt, III F

Over 2 lakh computers in schools across Kerala will soon be provided with the latest version of a Linux-based free operating system called IT@School. Released by the state-owned Kerala Infrastructure and Technology for Education (KITE), it will provide a variety of applications for educational and general purposes. And according to KITE, it will help the Kerala
government save around Rs 3,000 crore. K Anvar Sadath, vice-chairman and executive director of KITE (Kerala Infrastructure and Technology for Education) confirmed this development,
as he said that 1,50,000 primary teachers will be trained for this initiative. More than 200,000 computers will now have the latest Linux-based Free Operating System (FOSS).
One of the key highlights of the applications in the new version includes the huge collection of Malayalam Unicode fonts that would help to compute in Malayalam. Various international free software such as Marble, RasMol, GPlates, ghemical, etc which used to teach various
subjects using IT have also been customized.



Chinese Credit Score System

Aishwarya Dikshit, III F

Most of you will be familiar with a financial credit score that rates your financial trustworthiness. It's intended to give creditors an indication of risk and how likely you will repay your loan commitments. With a massive helping hand from high-tech and big data, China is rolling out a social credit scoring system that rates your trustworthiness far beyond that of your financial credit score. Let's take a look at the Chinese Social Credit score system.

How Is The Social Credit Score Determined?

In China, government agencies and private companies are collecting enormous amounts of data about e.g. an individual's finances, social media activities, credit history, health records, online purchases, tax payments, legal matters, and people you associate with in, addition to images gathered from China's 200 million surveillance cameras and facial recognition software. Data that indicates non-compliance with legally prescribed social and economic obligations and contractual commitments are flagged up and aggregated on a government-wide level to determine the trustworthiness of companies and individuals. Such a trustworthiness score can fluctuate based on actions—going up for good deeds such as donating to charity and can go down for negative actions such as getting a speeding ticket.

How Is A Social Credit Score Used?

The idea is to create more transparency about companies and individuals that are breaking the law or are non-compliant with official obligations and incentivize the right behaviors with the overall goal of improving governance and market order. Even though the system is still under development it currently plays out in real life in myriad ways for private citizens, businesses and government officials.

Generally, higher credit scores give people a variety of advantages. Individuals are often given perks such as discounted energy bills and access or better visibility on dating websites. Often, those with higher social credit scores are able to forgo deposits on rental properties, bicycles, and umbrellas. They can even get better travel deals. In addition, Chinese hospitals are currently experimenting with social credit scores. A social credit score above 650 at one hospital allows an individual to see a doctor without lining up to pay.

Roadside food preference survey

Hemanth, III G

Introduction:_A survey was conducted to study the Roadside food preferences of students. People of Bangalore cut across barriers of class, religion, gender and are passionate about street food gaining acceptance primarily from Indian youth and younger generation. Fast food is one of the world's largest growing food type. India's fast food industry is growing by 40% a year. Fast food is characterized as quick, easily accessible and cheap alternatives to home-cooked meals.

Objective :

- To study the demographic factor of eating roadside food.
- To study percentage of college students preferring roadside eateries.
- To know the reason behind the preference of roadside eateries.
- To study whether students think roadside food is healthy.
- To understand whether quality of roadside eateries is important or the taste is important for costumers.

Data Source : The data was collected through questionnaire comprising of 16 questions.
Data Collection Instrument: Questionnaire on Google Forms
Sampling Procedure:

1. Sample Unit: MES Degree College students
2. Sample size: 280
3. Sampling method: Random Sampling method

Observations

- Most of the people eat roadside food once a week.
- People mainly prefer to eat roadside food as evening snack.
- South Indian chats have been ranked highest followed north Indian chats by our respondents from the survey

Not satisfied with hygiene	48%
Think it's not healthy	80%(Approximately)
Prefer to eat roadside eateries	80%

Our survey also answers the study conducted by Scripps Research Associate Professor Paul J. Kenny and graduate student Paul M. Johnson, published on March 28, 2010.The study says junk food is as addictive as drugs. (study link:https://www.scripps.edu/news-and-events/press-room/2010/20100329.html)

STUDENTS NEWS:

1. POSTER PRESENTATION
   First Prize: Shree Raksha and Brinda of I Bsc F sec
   Second prize : Gunashree ,Kavya,Reshma of I BSc J sec
   Third Prize : Vaishnavi ,Shilpa and Spoorthi of I BSc G sec.

2. APTITUDE AND COMPUTER SCIENCE OBJECTIVE TEST
   First prize : Aishwarya.G.Dikshit, III B.Sc F sec
   Second prize: Aishwarya.N, III B.Sc F sec
   Third Prize : Hemanth Kumar of III BSc G sec,Pavithra.B of III B.Sc F sec

3. Vijay Kumar, Vinay T and Chaitanya of II BSc presented poster entitled "Internet of Medical Things" in the National Level Lecture Workshop on "Artficial Intelligence in Health care"

4. K Suresh, Kumaran E and Pradyumn Vasishta of II BSc presented paper entitled "Integeration of ICT in Higher Education" in One Day National Seminar on "Quality Assurance:Foundation for the future Higher Education" conducted by GFGCW, Hole Narasipura in association with NAAC and DCE.

5. Another paper by Pradyumn Vashisht of II BSc on "Emerging Trends in Humanities, Commerce and Physical Science" in a National Level Conference on Alternative Energy Sources"

6. Nithin K S of I BSc G and Anirudh Balige of I B Sc F jointly presented a paper on " Reditt Sentiment Analysis: Interests and Trends Prediction" in a National Level Students Conference and Paper presentation Competition on Trends and Innovations Implying Future Technology conducted by IEEE Student Branch at St . Claret College.

7. Namratha and Srilatha G of II BSc G jointly presented a paper entitled "Artificial Intelligence and Health Care" in a National Level Students Conference and Paper presentation Competition on Trends and Innovations Implying Future Technology conducted by IEEE Student Branch at St . Claret College.

FACULTY NEWS:

1. R Matheswari submitted her Ph D thesis entitled "An Integrated Framework for Segmentation and Classification with Improved Quantized Kalman Filter-based Pattern Matching Technique for Detection and Tracking of Moving Objects" under Bharathiar University in March 2019 with plagiarism rate/similarity measure of 1%.
2. Sai Sudha C and Shilpi Dham completed NPTEL course on "Data Mining"

FACULTY MEMBERS:

1. DURGAKALA SRIDHAR
2. SAI SUDHA C
3. SHILPI DHAM
4. R MATHESWARI
5. SAJINI G
6. LAKSHMI S