

FTC

FUZZY TO CRISP

EXCLUSIVE

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Series 1

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BOON OR CURSE

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THE INVISIBLE TECHNOLOGY

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MARCH 2019
ISSUE # 1

Dear Readers
Greetings to all!

"Education is what remains after one has forgotten what one has learned in school"

.... *Albert Einstein*

Education is Knowledge and skill that an individual acquires. There is no specified age or time for learning. Look around your surroundings; perceive the things and try to find out reason behind its existence. The universe is full of learning. Get involved with different things; explore the life to fullest.

Let's all make 2019 Resolution: "Being Educated".

The newsletter will mainly cover the tech articles, literary work and the activities in and around the Campus. The aim is to imbibe a spirit of professionalism and make the young minds aware of latest technologies in order to attain complete and correct vision.

Hoping an active participation from all students and faculty members in our future endeavors!!

With Best Wishes,

Dr. Vidhi Khanduja

Head,

Computer Engineering Department

SAL ITER

Our Director sir, **Prof. Dr. Rupesh Vasani**, has received an appreciation letter from honorable Chief Minister of Gujarat for making a record by filing maximum number of patent

!!Congratulations to **SAL Education Campus**!!

Special thanks to respected **Ms. Neelima Shah** Ma'am and Director sir, "**Prof. Dr. Rupesh Vasani**" for being our motivation and source of inspiration.



Vijay Rupani

Chief Minister, Gujarat State

apro/Ujg/2019/02/06/dt

Dt. 06/02/2019

Message

"Knowledge is very vital in life's transformation and transition"

— Jaachynna N.E. Agu

The line between creativity and its commercial usage is very thin. There are people who believe in utilizing their talents, potential and innovations for the material gain, and on the other hand there are people who believe in holding ownership on their innovations and creation. This is where the issue of intellectual property right becomes vital as it is highly important to use this right in either case.

I am much pleased to learn that the **Sal Institute of Technology & Engineering Research** is actively helping young innovators, researchers in getting their creations patented. The number of such patents registered with help of the Institute is owed inspiring and researchers should take help of it. I, hereby, extend my heartiest best wishes to the Institute for such noble work in favor of creators, innovators for establishing their rights. This initiative by the **Sal Institute of Technology & Engineering Research** will undoubtedly help in spread of "**Young India-Strong India**".

(Vijay Rupani)

To
Dr. Rupesh Vasani, Director
Sal Institute of Technology & Engineering Research
SAL Technical Campus,
Opp. Science City, Sola Road,
Ahmedabad- 380060.
Email- saliter@ymail.com

Welcome to the *Biocomputing* Series (Issue-1)

By Prof. Pooja Mehta

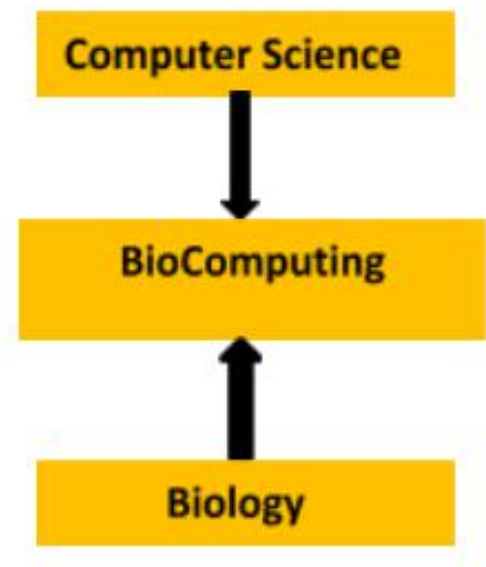
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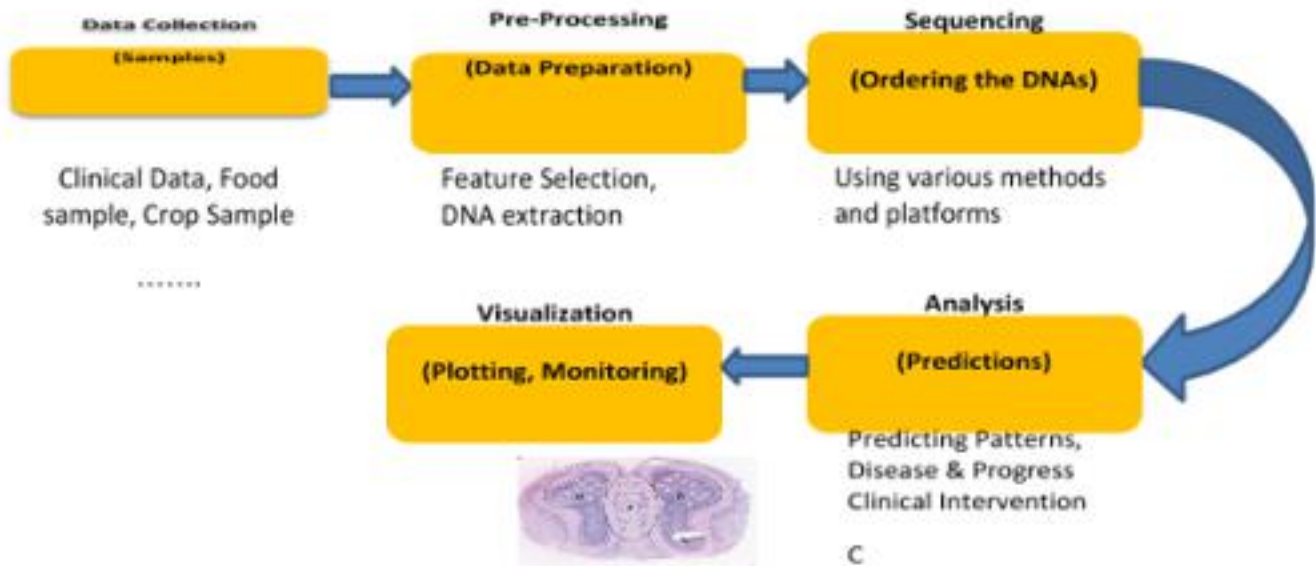
BIOCOMPUTING article successions will aid in learning the fundamentals of bioinformatics to the undergraduates and biological computing aspirants. Current article, discusses the introduction of bioinformatics and applications in various domains of bio-science.

What is Bioinformatics?

Amongst numerous emerging areas of computer science, bioinformatics, Biocomputing or computational biology is an interdisciplinary subject involving machine learning, data science, mathematics, statistical analysis, biology and genetics. There are numbers of definitions presented in different literature depending upon the specialty and scope of the research. In general, data concentrated biological problems are explored with the assistance of computer science algorithms and mathematics. Most common data problems demand modeling of biological progressions at each stage of molecular change. First time in 1978, Paulien Hogeweg and Ben Hesper introduced term bioinformatics in his research "The Study of informatics processing in Biotic Systems"



This field not only involves developing algorithms to process molecular data but also resolves issues of storing, managing and further analyzing the data. The standard practice usually involves collecting statistical data or samples, narrating them for better performance (Data preprocessing like feature/DNA extraction, normalization or compression), and Sequencing using appropriate methods. Preparing a model for prediction or analysis or interpretation and finally publishing them to the dashboard (Visualization).



Applications:

Bioinformatics is a vast area that has covered several disciplines in natural science such as Medicine, Drug design, Diagnosis, Genomics, Sequence Analysis, Micro-Bio Genome analysis, Climate change, Waste Analysis and Cleanup, Agricultural problems and Biotechnology. Each of this requires different analytical approach and methods.

The massive progression of biological data has been raising challenges to store and manage data of nucleic acid sequences, protein sequences and DNA structures. Gen-bank, PIR, SCOP, CATH, etc are the examples of biological databases which are used by the researchers along with Biocomputing tools like FASTA and BLAST.

We will come up with the DNA Microarray and sequencing in next issue.....

Artificial Intelligence – Boon or Curse

By Raj Yadav(150670107096)

What is Artificial Intelligence (AI)?” - Imagine a scenario where you need to tirelessly work and complete your task in a short deadline without making any mistakes what so ever, humanly it’s impossible. Now for just a minute imagine a machine or a computer acting like a human that completes every task within the time limit, without any fatigue or tiredness and also learning at every step in the way and presenting the finished task without any error, this ability of human imitation of the machine is known as Artificial Intelligence. This does not mean every time machine solves any problem by observing and learning from human and animals, instead most of the time, AI is used to solve problems that are too difficult for the humans to solve.

There is a great amount of excitement over the globe involving AI. Everyone from an industrial leader, technocrats, scientific thinkers to the kid next door is talking about AI. The subject with its large scope has been accepted as redemption of humankind and at the same time been condemned for a potential downfall of human lives. In the late 20th century we predicted how AI would replace the blue-collared jobs but nobody saw the dawn of AI taking over every field and someday the world itself if not careful, and will bring more complications than solutions.



Automated jobs
Due to the introduction of AI, many jobs will become automated like legal aids, managerial positions, reporting etc. However, it will also open up even more jobs in the skill-oriented sectors, meaning one’s misfortune may become another’s fortune.

Always a helping hand This leaves us to the questions “Is AI going to be an impending doom or a path to salvation?” The answer is a double-edged sword. Google’s DeepMind performed a series of experiments on how AI would react in truculent situations. The results showed that AI-powered robots stoop to violence and attacked one another in order to survive. Many great minds of the current century including Elon Musk and Bill Gates are concerned with the underlying risk of AI that if it has the potential of becoming smarter than us then there is no way to predict what will happen in the future.

src:pixaby.com

Blockchain: The Invisible Technology

By Divy Shah(160670107103)

What is Blockchain ?

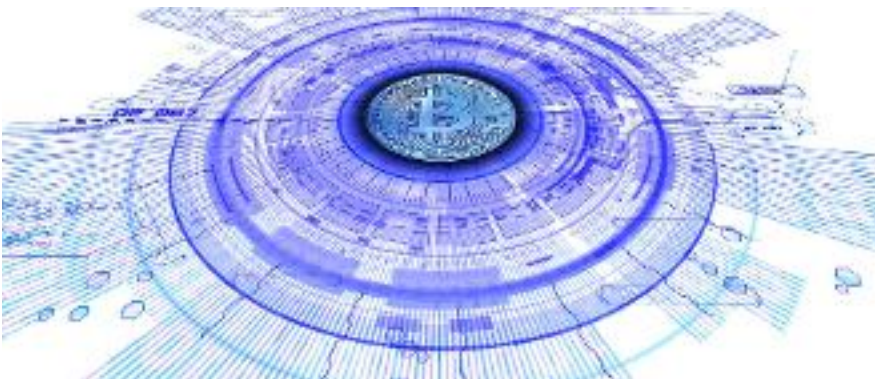
Think about a blockchain as a distributed database that maintains a shared list of records. These records are called blocks, and each encrypted block of code contains the history of every block that came before it with timestamped transaction data down to the second. In effect, you know, chaining those blocks together. Hence blockchain.

A blockchain is made up of two primary components: a decentralized network facilitating and verifying transactions, and the immutable ledger that network maintains. Everyone in the network can see this shared transaction ledger, but there is no single point of failure from which records or digital assets can be hacked or corrupted . Because of that decentralized trust, there's also no one organization controlling that data, be it a big bank or a tech giant like Facebook or Google. No third-parties serving as the gatekeepers of the internet.



Companies such as Microsoft and IBM are using their cloud infrastructure to build custom blockchains for customers and experiment with their own use cases, like building a worldwide food safety network of manufacturers and retailers. On the academic side, researchers are exploring blockchain applications for projects ranging from digital identity to medical and insurance records.

Within the next handful of years, large swaths of your digital life may begin to run atop a blockchain foundation—and you may not even realize it.



"What Are Virtual Assistants and What Can You Do With Them?"

By Divy Shah(160670107103)

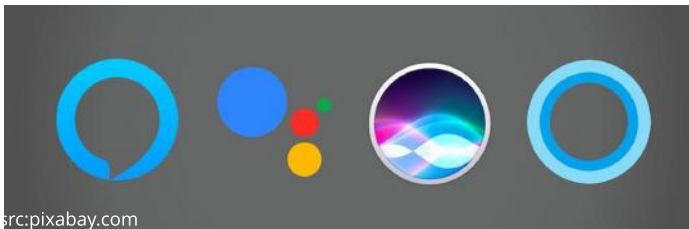
"Alexa, Cortana, Siri and Google Assistant execs discuss what voice-activated contextual artificial intelligence (AI) can do for business, and how the digital assistant landscape is evolving along with AI."

Amazon's Alexa, Apple's Siri, Microsoft's Cortana, and Google Assistant have become our voice-activated helpers when searching for information, organizing our schedules, and completing all manner of everyday tasks in more intuitive ways. This could mean anything from sending a hands-free text or playing music through an Amazon Echo to ordering an Uber ride or a pizza through your Google Home. These simple types of actions are just the beginning. We're also starting to see the value of this kind of AI in more complex scenarios and business settings.



src:pixabay.com

Whether you call it a digital assistant, virtual assistant, or voice assistant, you're essentially talking about an agent or app that lets users ask questions or give commands using their NL. A virtual assistant can exist in many different forms, be it on your smartphone or desktop, within a connected speaker, or called up in specific apps and services when you need it. Google Assistant, for instance, is now available on Android devices such as the Google Pixel and the Google Allo chat app, and is now on its way to both iPhones and TVs.



src:pixabay.com

"We were looking for a natural way for people to interact with technology, which is how we came up with a conversational interface to talk to a machine".

"Conversation is the most natural interface you can think of and it's something we all know how to do very naturally."

How Virtual Assistants Get Smarter

The more tasks you teach and program an AI to perform, the more it will be able to do. In this respect, virtual assistants have something in common with the deep learning process by which ML algorithms and neural networks are trained on massive data sets. Training virtual assistants to perform specific business tasks is easier; all you have to do is open up the ecosystem to thirdparty skills development.

"Overall, the industry is still really early," said Microsoft's Jones. "Adoption is early. We're seeing a growing interest in the home and a big opportunity in productivity and work, but it's not just about understanding what I'm saying. It's about understanding the intent, especially as we bring this technology to even more conversational platforms."



Google's Hafsteinsson agrees that we're only scratching the surface of the different contexts and new use cases for this tech. More important than looking at adoption numbers, he feels the presence and contextual convenience of virtual assistants will gradually shift our behavior.

"In the last two years, we've seen this explosion in the technology. But you have to understand that its future is not based on numbers," said Hafsteinsson. "It's based on the advantages it brings to human beings. Ignore it at your own risk."

“YOGA AND MEDITATION: AN INNOVATIVE TOOL FOR GLOBAL COMPETENCY”

By **Dr. Roshni Rawal** (Associate Professor)

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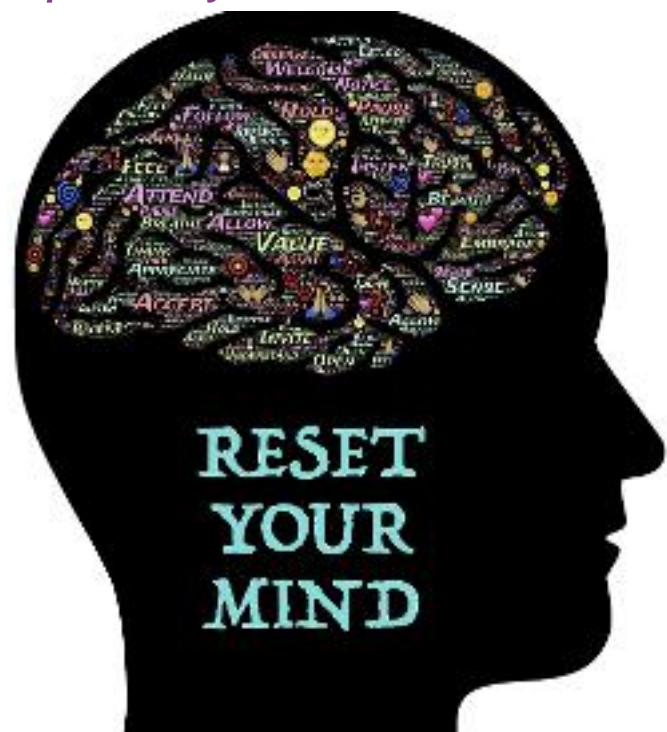
SAL Education campus



Today is Globalisation era. We are getting exposure to the world. Competition is getting more and more tougher day by day. Earlier things were limited to local, regional or national level. But now if any idea came into mind, it has to strike through various levels of international aspects. It has to deal with certain parameters of Globalized competition. It has to go through n numbers of competition at Global level. Darwin’s law “Survival of the Fittest” is aptly suitable to present scenario of Globalisation. In this cut – throat competitive world, if any person wants to survive in the Globalized market, one should develop some competitive skills in their personalities. But to emerge as a winner, they have to recognize and feel it from their inner personality (i.e. from heart and soul). Then only, one can conquer the world in true sense. Yoga and Meditation act as an emerging innovative tool to develop skills and competencies for Global competitiveness.

A spiritual guru Jaggi Vasudev says, “ Human is not a being, infact he is in the process of being human . It is a continuous process and a probability.”

So, when it is in the process of being human, we can modify it, we can add some skills to make it better. Here requires some skills to introduce and develop. And when one understand it, he / she can not only resist in the market but also can win the market, whether it is national or Globalized market. If we talk about India; India has to develop skills in every youth to compete the Global world/ market. India’s population can be the biggest strength for it to emerge as a winner in the global market, if utilized wisely and skilfully. Only 30% of educated youth of India is emerging with some new and innovative ideas into the Global market on basis of their skills.





Benefits of Yoga and Meditation for students:-

1. It makes you mentally competent.
2. It makes you feel energetic.
3. It makes you feel more confident.
4. With the help of this we can take decision firmly.
5. Is it a stress relieving activity.
6. It creates new ideas.
7. It gives energy.
8. It rejuvenate mental and physical health.
9. It makes us healthy.
10. It creates confidence.
11. It generates positive thinking.

Yoga and Meditation is helpful in overall development of the person and make him/ her competent enough to conquer the world. There are lot many recent examples for it as an evidences, like PM Shri Narendra Modiji from politics, Shilpa Shetty Kundra from Bollywood, Baba Ramdev from business etc. These examples highlight the brighter side of adopting innovative skills to face unpredictable threats and challenges of future.



Yoga and meditation are modern emerging tools, given by our ancestors of India to not only compete the globalized world (full of threats and opportunities) but also by practising it, one can emerge as a winner. For this the whole world is looking at India's ancient heritage.

Department Highlights

1. A 5 Days Faculty Development Program/STTP was held on "Machine Learning using Python" from 28 Jan- 2019 to 1 Feb-2019. This FDP aimed to provide an opportunity for participant to enrich their knowledge and skills in developing various solutions for solving engineering problems. In this 5-days learning program, many latest assignments and research projects on Machine Learning were discussed and implemented in Python. This learning program was well received by faculty as well as students of Computer Engineering Branch.



2.

It is a matter of great pride that our team has been qualified for Smart India Hackathon'19 Nationals and their performance was praiseworthy.

Team Name: Technocrats007

Team Mentor: Prof. Harsha Padheriya

Team Members:

Akash Panchani	(160670107052)
Devanshi Shah	(160670107102)
Furqaan Ahmed Khan	(160670107038)
Harsh mishra	(160670107034)
Harsh Panchal	(160670107049)
Shekhar Pandey	(160670107053)



!!!We congratulate the team for their wonderful performance in the event !!!

3.

International Experience Program (IEP) is an important component of GTU's international program consisting of Joint research and exchange of students and faculty members.

Following students are selected for IEP'2019 . They will be going to CANADA for 6 weeks training.

- I. Jwalit Jayeshbhai Thakkar (160670107118)
- II. Anshit Kankotiya (160670107037)
- III. Aarchi HirenKumar (160670107061)

!!!!We wish them good luck!!!!



4.

Congratulations to team TG001843 for reaching GIH Grand Finale.

Team Mentor: Prof. Harsha Padheriya

Team Members from Computer Engineering Branch:

BUDHRAJA TWINKLE (160670107012)
DEVANSHI VALA (150670107043)

!! We wish them good luck for Finale!!

Team

Dr. Rupesh Vasani
(DIRECTOR)

Dr. Vidhi Khanduja
(HOD-CE, EDITOR IN CHIEF)

Divy Shah (160670107103)
(EDITOR)

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