



18.0

IEEE
Bangalore Section

AURIFERA

ISSUE 8 VOL 1

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Branch Counsellor,
Vice-Chairman,
Chairperson



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TEAM AURIFERA

Moinam Chatterjee ----- Chief Editor
Vidyashree V Puranik ----- CO-Editor
Shivani Nayak
Ritushree Banerjee

From Branch Mentor's Desk



Happy to know about release of "AURIFERA", a magazine which promotes hidden talents of student community. I hope many students would have used this wonderful platform to express their creative ideas and literary skills.

IEEE-PESCE student branch is an active bunch of enthusiastic students who always strive to conduct events useful to the student community. The accolades they brought to the institute makes all of us very proud. The distinction they have created at the section level and achievements of their members both during and after graduation is greatly appreciated. I wish the student branch will intensify their efforts and try to excel at region level.

On this happy occasion of the annual event CRESCO 18.0 I wish every member a very best for their future and wish lots of success in their endeavours.

-Dr. V Sridhar
Branch Mentor of IEEE-PESCE
Principal, P.E.S College of Engineering

From Branch Branch Councillor's Desk



I am excited to know the release of our annual magazine "AURIFERA". The IEEE student branch of PESCE is doing this since eight years. I always consider this to be a nice platform for budding Engineers to express their creative thoughts and ideas.

In the present competitive world both oral and written skills are highly valued and these kind of magazines provide opportunity to hone one's writing skills. I am happy that many students are coming forward to publish their articles in this magazine.

IEEE-PESCE is very vibrant and created a mark for itself at Bangalore section level. Glad our members are happy and have wonderful experience being part of IEEE. The kind of professionalism they develop staying in student branch has given them clear distinction among student community. The learning they obtained has helped them grow very fast professionally. I wish IEEE-PESCE will do many more projects both on technical and societal front to help their members build a wonderful personality. I wish on this occasion very best to every member of our student branch for their future endeavours.

-Dr K A Radhakrishna Rao
Branch Counsellor of IEEE-PESCE
Head of Dept. in E & C Engg
P.E.S College of Engineering

From WIE Mentor's Desk



Dear Students,

It gives me great joy and satisfaction to address all of you in this auspicious occasion of CRESCO 17. Being a part of the Student Chapter of IEEE-PESCE is a tremendous honor in itself. The Women in Engineering (WIE) wing of IEEE-PESCE has been the pillar of strength of the student chapter for the past several years since its inception. It has been instrumental in organizing and volunteering various noteworthy activities in IEEE. Representing the WIE wing as a mentor and guide gives me ample amount of pleasure. The sole existence of the WIE wing consolidates the fact that women are equally capable to adopt engineering as a profession and excel in it. I hope that the Student Branch will continue the excellent work it has been doing for the past 10 years and provide bounties of opportunities for all the students and its members.

-Dr. MC Padma
WIE Mentor of IEEE-PESCE
Head of Dept. in CS Engg P.E.S College of Engineering

From Chairman's Desk



If you can share, you can learn is my belief. Sharing has many forms and one of the most effective one, even in the digital age, is the written form. It is a lot easier to read an article than to write one. Try if you're not sure, writing a meaningful page or something you're passionate about. While writing needs insight, it is an easy way especially in the digital age. With electronic media available, almost freely, we can get more people to read our thoughts and seek their valuable feedback. Feedback is important as none of us think alike. So different viewpoints makes our thoughts rounded and our ideas more sold. Writing brings clarity of thought. You can have vague or unclear thoughts, but you can write only what is clear in your mind. So, if you can write, it's clear, while it could be incomplete or even incorrect but it is not unclear. With an open mind and right feedback the learning is so effective that you have to try writing.

Happy writing, happy reading, happy sharing and most importantly happy learning

- Sudeendra Kaushik
Chairman
IEEE- Bangalore Section



I am really happy to know that IEEE-PESCE has come out with the IEEE annual magazine "AURIFERA 18". Wishing you all the success.

For the students,

"Dear students, to the best of my understanding to be successful, please focus on HAA, ie., Health, Education and Academics. Health (Physical and Mental) is a very precious gift by God to us, please take care of it. One should have positive attitude, humility and lots of patience till you reach your goal. Work hard to do well in academics."

- Punnet Mishra
Vice-Chairman
IEEE- Bangalore Section

Message from Chairperson



Hello,

The very purpose of Technology is Human well-being. The IEEE student branch is one of the elite Platform for the students to enhance their perception in both, technical and non- technical aspects.

It is my privilege to announce that IEEE-PESCE is completed its 11 years of journey encouraging the students to take responsibility and molding them into better technocrats. The year 2017-2018 has seen lot of innovative initiatives and events organized by IEEE-PESCE. Vikasana initiative, Independence Day celebrations, workshops on adobe, Industry level coding: Python, Image processing, HTML, IOT, a talk on IEEE blended learning, women's day celebration, Annual technical fest CRESCO 18.0 are the highlighting projects of the student branch. My experience in the student branch from being a member to a student chair is filled with lot of good memories and lessons that I shall carry throughout my life. The opportunity that I got here made me to learn so many things and guided me to grow in all the aspects. Finally I sincerely render my gratitude towards Dr. K A Radhakrishna rao for guiding us in all the phases and for being open to the Ideas and allow us to flourish in all direction.

- Rajiv M N
Chairperson
IEEE- PESCE

From Editor's Desk



Hello IEEE universe,

As all good things come to an end so has my 4 year journey with PES College of Engineering, Mandya and the IEEE PESCE Student branch.

I would like to heartily congratulate IEEE PESCE, Mandya for eleven years of steady growth and for all its achievements during the journey. IEEE PESCE had always been crucial in our journey of self-learning and developing in various fields. It had always helped me in building up new ties with peers and always found myself surrounded by talented mates all across.

I extend my gratitude to all the team members who had been

the support throughout the journey. This year we saw many events take place like the IOT workshop conducted by Robokart, Industry level programming : Python by our ex- IEEE PESCE member Rahul Ashlesh working in NOKIA R&D, The Womens Day by WIE, all which turned out to be very successful. We continued our special interest in vikasana and contributed our best for its development and for the welfare of the kids. We also went a step ahead and brought our sight to a government school, conducting some fun activities on the auspicious occasion of Children's Day.

IEEE PESCE was not only focused on technical events but for various different domains which the students could excel and explore. All this would have been possible only because of the continuous guidance we received from Dr. K A Radhakrishna Rao, Branch Counselor IEEE PESCE.

I would like to appreciate the editorial board for their collective efforts in the making of annual magazine of IEEE PESCE- Aurifera Issue 8 VOL 1.

I wish luck to the upcoming IEEE PESCE Execom team and urge them to continue their brilliant work and empower as many students as possible.

I wish the student branch of IEEE PESCE, Mandya continues to achieve greater heights and inspire the students and the staff.

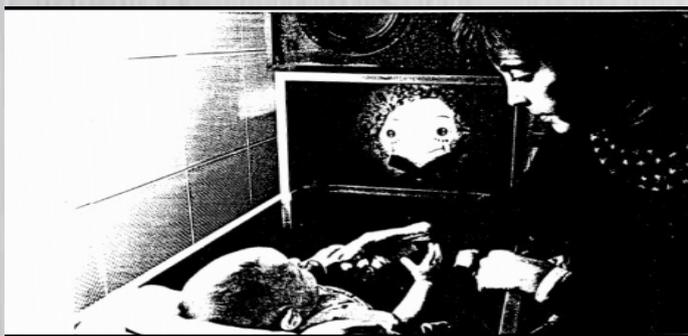
Regards,
Moinam Chatterjee.
Director of Technical Activities IEEE-PESCE.



IEEE PESCE EXECOM 2017-18

SPEECH PERCEPTION IN INFANTS

-Aditya Jha 8th Sem CS Dept.



Hearing is one of the most crucial means of survival in the animal world, and speech is one of the most distinctive characteristics of human development and culture. Language learning is a deep puzzle that our theories and machines struggle to solve but infants accomplish with ease. How do infants discover the sounds and words used in their particular language(s) when the most sophisticated computers cannot? What is it about the human mind that allows a young child, merely one year old, to understand the words that induce meaning in our collective minds, and to begin to use those words to convey their innermost thoughts and desires? What enables the kind of learning we see in infants for speech, whereas no machine in the world can derive the phonemic inventory of a language from natural language input? A child's budding ability to express a thought through words is a breathtaking feat of the human mind. Researches on infants' phonetic perception in the first year of life shows infants begin the process of language acquisition by being able to detect very small differences between speech sounds. They can discriminate all possible speech contrasts, known as phonemes. Although the fact is, infants develop speech perception skills during the prenatal period itself.

Workers at the Haskins Laboratories in New Haven, the Massachusetts Institute of Technology and Sweden's Royal Institute of Technology have shown that the speech signal is a complex of acoustic units: brief segments bounded by momentary pauses or peaks in intensity. These segments vary in duration, frequency, temporal relations and intensity of their constituent bands of concentrated acoustic energy known as formants. The variation in these acoustic parameters provides the information that is critical to the perception of phonemes. But what makes the humans store the sounds distinctively?

An experiment was conducted by Catherine Frogley at The University of Leeds. The aim of the experiment was to test reaction times for identifying 'high-frequency' words compared to 'low-frequency' words. The results obtained in the experiment were as predicted, which suggested that reaction time for high frequency words was faster than the reaction times for low frequency words. Eino Partanen of the University of Helsinki and his team once gave expectant women a recording to play several times a week during their last few months of pregnancy, which included a made-up word, "tatata," repeated many times and interspersed with music. Sometimes the middle syllable was varied, with a different pitch or vowel sound. By the time

the babies were born, they had heard the made-up word, on average, more than 25,000 times. And when they were tested after birth, these infants' brains recognized the word and its variations, while the other infants did not. Both the above experiments conclude that human brain gets more stimulated to high frequency sounds than lower ones and it is capable of storing those sounds which are very frequently heard by the ear. This is the reason an infant in early ages of speech perception is able to respond, to her mother when she calls the baby's name but won't respond if any stranger calls the name. This is how the babies are able to differentiate sounds and how they perceive low and high frequency sounds. This kind of perception is termed as Temporal Perception which is observed only in the infants' early ages of speech perception. This is one of the reasons why young babies seem to be able to discriminate the sounds from any of the world's languages whereas the adults have difficulties hearing the sounds which are not used in our own language. The very famous example is that native adult Japanese speakers are virtually unable to perceive the distinction between the sounds of /l/ and /r/ whereas American infants and presumably Japanese infants have innate sensitivity. A formant is a concentration of acoustic energy around a particular frequency in the speech wave. There are several formants, each at a different frequency, roughly one in each 1000Hz band. Each formant corresponds to a resonance in the vocal tract. In other words they are the frequencies which resonate the loudest. At any one point in time (as with spectra) there may be any number of formants, but for speech the most informative are the first three. The first two formants are enough to differentiate one sound from another and the third formant defines the quality of the sound. When the babies hear the same type of formants over and again for a course of time they are able to store those sounds in their brain. These sounds then become the building blocks of their speech when they try to speak.

At the age of two the babies are able to learn their native language by differentiating each sound from one another and making a database of those sounds in their brains which we call as phonemes in our language. Now the babies are able to sort out the incoming speech sounds into categories while ignoring irrelevant differences and reinforcing the contrastive ones. This kind of perception is called Categorical Perception. This ability of perception develops over the aging and continues in adults. That is the reason a native Japanese speaker is unable to differentiate between /r/ and /l/ because they both are the variants (allophones) of the same sound (phoneme) in their language but English has both of them defined differently. Well the question is, what's the point of understanding how the infants crack to perceive human speech? First in the list come the Speech Synthesizers. This decade has seen a prominent development in creating speech synthesizers for the use of common people. Well they still fail in some aspects like fluency and understanding new words which can be unriddled. This knowledge can help us make better and reliable models in Machine Learning. An interactive system can be developed for dumb and deaf and so the list goes on based on your power to imagine.

Technology can be our best friend, and technology can also be the biggest party pooper of our lives. It interrupts our own story, interrupts our ability to have a thought or a daydream, to imagine something wonderful, because we're too busy bridging the walk from the cafeteria back to the office on the cell phone.

- Steven Spielberg

TIME TRAVEL-WORM HOLE-BLACK HOLE

- Manoj Murthy.R 4th Sem Mech Dept.

I. INTRODUCTION

Time travel is the concept of movement (such as by a human) between certain points in time, analogous to movement between different points in space, typically using a hypothetical device known as a time machine, in the form of a vehicle or of a portal connecting distant points in time. Time travel is a recognized concept in philosophy and fiction, but traveling to an arbitrary point in time has a very limited support in theoretical physics, but time travel seems possible with the laws and concepts of quantum physics but traveling any significant "distance" requires motion at speeds close to the speed of light, which is not possible for human with current technology. But the discovery of BLACK HOLE and the concepts of WORM HOLE make's it possible to believe time travel if possible in the future some of the greatest minds in the world like STEFEN HWAKINGS believes that time travel is possible.

II. TIME TRAVEL

The concept of time travel can be found in a variety of mythological tales and fantasy stories, dating back to early examples of the written word. There is no widespread agreement as to which written work should be recognized as the earliest example of a time travel story, since a number of early works feature elements ambiguously suggestive of time travel. These works generally rely upon supernatural explanations for it, rather than the modern conception of time travel we humans are exploring space and understanding the cosmos for over twenty years now so there is still may mysteries to be solved in the cosmos and time travel is one of them .There are manly two types of time travels they are FORWARD TIME TRAVEL and BACK WARD TIME TRAVEL.

A .Forward time travel

Forward time travel means traveling into our future where time will be far a head than our current time and we will be looking into our future. Examples of forward time travel can found through out the world some of them are in Hindumythology the Mahabharata mentions the story of the King Raivata Kakudmi, who travels to heaven to meet the creator Brahma and is shocked to learn that many ages have passed when he returns to earth.

B .Backward time travel

Backward time travel means traveling back to our past we all know what was our past but by using backward time travel if we go back to our past and change it our present will be completely different so backward time travel is quite different and it seems tricky cause for a example let us think that "I have traveled back in time a time where my grandfather is still young so know if I kill him than I wont exist in the future cause if my grandfather is dead at a young age than my parents wont exist than how would I exist to make a backward time travel. These are the questions that are troubling the scientist about backward time travel.

Time travel is still a theory to day but once landing a man on the moon was also thought impossible. Today we can say time travel is possible by many concepts like THE BLACK HOLE, THE WORM HOLE, OUR BULDING A SPACE SHIP THAT CAN TRAVEL FASTER THAN LIGHT and many more. We may not have any space ship that can travel faster than light but we do know that BLACK HOLE do exist and according to EINSTEINS concept's of cosmos and quantum physics WORMHOLE do exist and they are some where

in the cosmos yet to be discovered .

III. BLACK HOLE

A black hole is formed when a star die's. A black hole is a region of space time exhibiting such strong gravitational effects that nothing—including particles and electromagnetic radiation such as light—can escape from inside it. The theory of general relativity predicts that a sufficiently compact mass can deform space time to form a black hole. The boundary of the region from which no escape is possible is called the event horizon. Although crossing the event horizon has enormous effect on the fate of the object crossing it, it appears to have no locally detectable features. In many ways a black hole acts like an ideal black body, as it reflects no light. Moreover, quantum field theory in curved space time predicts that event horizons emit Hawking radiation, with the same spectrum as a black body of a temperature inversely proportional to its mass. This temperature is on the order of billionths of a kelvin for black holes of stellar mass, making it essentially impossible to observe. After a black hole is formed it can continue to grow by absorbing mass from its surroundings. Objects whose gravitational fields are too strong for light to escape were first considered in the 18th century by John Michell and Pierre-Simon Laplace. The first modern solution of general relativity that would characterize a black hole was found by Karl Schwarzschild in 1916, although its interpretation as a region of space from which nothing can escape was first published by David Finkelstein in 1958. Black holes were long considered a mathematical curiosity; it was during the 1960s that theoretical work showed they were a generic prediction of general relativity. The discovery of neutron stars sparked interest in gravitationally collapsed compact objects as a possible astrophysical reality.

A .Physical Property

The simplest static black holes have mass but neither electric charge nor angular momentum. These black holes are often referred to as Schwarzschild black holes after Karl Schwarzschild who discovered this solution in 1916. According to Birkhoff's theorem, it is the only vacuum solution that is spherically symmetric. This means that there is no observable difference between the gravitational field of such a black hole and that of any other spherical object of the same mass. The popular notion of a black hole "sucking in everything" in its surroundings is therefore only correct near a black hole's horizon; far away, the external gravitational field is identical to that of any other body of the same mass.

B .How Dose a Black Hole Make Time Travel Possible

We know that a black hole is formed when a star dies and collapses under it's own gravity we know that matter and energy are enter related and we know that the universe started wit a big bang and the universe is still expanding and the energy and light from the big bang is still going to the far end of the universe In space time is different in different region like the time at the starting at the universe is far a head than the time at the far end of the universe where time is just starting.

We know that time also started when the universe started because before than there was no space so time also didn't exist. So as we know a black hole has a strong gravitational force where nothing can escape not even light so time slows down near a black hole because mass and energy are sucked into it

and space also so no space so time and some space explorers believe that if we were sucked in to a black hole we might end up in a space and time different than ours.

IV. WORM HOLE

A wormhole or Einstein–Rosen bridge is a hypothetical topological feature that would fundamentally be a shortcut connecting two separate points in space time. A wormhole, in theory, might be able to connect extremely far distances such as a billion light years or more, short distances such as a few feet, different universes, and different points in time. A wormhole is much like a tunnel with two ends, each at separate points in space time.

For a simplified notion of a wormhole, space can be visualized as a two-dimensional (2D) surface. In this case, a wormhole would appear as a hole in that surface, lead into a 3D tube (the inside surface of a cylinder), then re-emerge at another location on the 2D surface with a hole similar to the entrance. An actual wormhole would be analogous to this, but with the spatial dimensions raised by one. For example, instead of circular holes on a 2D plane, the entry and exit points could be visualized as spheres in 3D space.

Researchers have no observational evidence for wormholes, but the equations of the theory of general relativity have valid solutions that contain wormholes. The first type of wormhole solution discovered was the Schwarzschild wormhole, which would be present in the Schwarzschild metric describing an eternal black hole, but it was found that it would collapse too quickly for anything to cross from one end to the other.



Fig-2

This is a Chandra X-Ray Observatory image of Cygnus X-1, which was the first strong black hole candidate discovered.

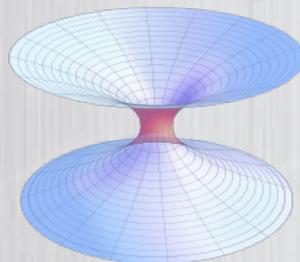


Fig-3

"Embedding diagram" of a Schwarzschild wormhole

Wormholes that could be crossed in both directions, known as traversable wormholes, would only be possible if exotic matter with negative energy density could be used to stabilize them. Wormholes are also a very powerful mathematical metaphor for teaching general relativity.

The theory of general relativity predicts that if traversable wormholes exist, they can also alter the speed of time. They could allow time travel. This would be accomplished by accelerating one end of the wormhole to a high velocity relative to the other, and then sometime later bringing it back; relativistic time dilation would result in the accelerated wormhole mouth aging less than the stationary one as seen by an external observer, similar to what is seen in the twin paradox. However, time connects differently through the wormhole than outside it, so that synchronized clocks at each mouth will remain synchronized to someone traveling through the wormhole itself, no matter how the mouths move around. This means that anything which entered the accelerated wormhole mouth would exit the stationary one at a point in time prior to its entry.

For example, consider two clocks at both mouths both showing the date as 2000. After being taken on a trip at relativistic velocities, the accelerated mouth is brought back to the same region as the stationary mouth with the accelerated mouth's clock reading 2004 while the stationary mouth's clock read 2012. A traveler who entered the accelerated mouth at this moment would exit the stationary mouth when its clock also read 2004, in the same region but now eight years in the past. Such a configuration of wormholes would allow for a particle's world line to form a closed loop in space time, known as a closed time like curve. An object traveling through a wormhole could carry energy or charge from one time to another, but this would not violate conservation of energy or charge in each time, because the energy/charge of the wormhole mouth itself would change to compensate for the object that fell into it or emerged from it

V. CONCLUSION

Time travel is a theory today but With this we can say that time travel is possible but is it safe, how, and dose the other end of a black hole led to a different time and space is it safe and dose a worm hole exist some where in space if yes where and traveling through it would it help overcome time travel and is it safe. These questions that still have not found answers but some day it will. We humans have achieved so many amazing thing that once thought impossible so one day if we over come the barriers of time and space that will be one of the greatest day of mankind and that day is not faraway.

EVERY LIFE IS PRECIOUS

-Shivani Nayak 6th Sem CS Dept.

To the girl/guy who wants to commit suicide,

No matter how poetic suicides can be, they're not good, so the goodbye you wrote in the suicide note means nothing at all. Yes, depression and insecurities are these crazy invisible parasites that suck up all the will to live and love but you need to know that you're stronger than that.

These are just words to describe how upset you're feeling inside and there's no escape to this feeling.

Depression and insecurities are for you to grow. The journey will be difficult but the destination is beautiful. How do I know? I was there too. On the verge. I wrote a suicide letter. I had the blades ready. My sleeves were rolled up to my elbows. But I could not. I probably didn't have the guts to do it. Probably because the act

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was too gory.

Irrelevant of what point you're in your life, irrelevant of how many marks you scored, how many people you slept with or how many times your heart got broke. You'll be fine. Because life moves on. You need to know that you are beautiful inside out and that life will be different if you're not around. So don't give up easy!

And if you need a friend to talk, well I'll always be here. But just don't give up. Because you are important, you make a difference.

With love,
Shivani

SAVORING SOLITUDE

-Antara Tewary 4th Sem CS Dept.

Why going solo is so important for personal growth? All the movies and novels and philosophers-do they have a point or is it all just fiddley-diddely-do?

t
This struct my mind when in my profligates , I was watching all sorts of feel good movies and indulging inttto Stephen King's IT (which, BTW, is an absolute delight for a book lover's soul),that I was forced to think - why is it that if humans are social beings, solitude is such a revered state of being?

I didn't get the answer straightaway. It took me wading through a hell lot of crap in my life, dealing with n belongs to integer, and n is the number of faces people wear these days (that was a nerd reference, scoot now).

I found out, and this actually makes sense, that the more amount of time you spend with people, their problems, opinions, judgments, (not to forget, rap) occupy so much space in your brain's important subconscious part that even though you don't realize it, your brain is actually holding someone else's crap(and now I personally feel I have written crap too many times).

Why is this a problem, you may think? It's almost like asking why we need meditation. Our life is already filled with so much drama and stress inducing stuff that there is rarely any time left

THE KITE RUNNER

Literary cravings of each one of us are too varied: fiction, non-fiction, mystery, romance, preternatural, biographies, tragedy. The book in our hand provides a direct insight to our mood. There are though, quite a few writers who can give you the entire range of all these genres in a single paperback, pages woven together to give you calisthenics of the mind.

Personally, The Kite runner holds the untold stories of Afghans and their requiem. It would have never reached the purview of so many masses had Hosseini not yielded their souls for us to know how every single thread of their existence has been unravelled and torn apart. Almost all of his novels explore the life of people before and after Taliban all the while looking into the social stigma towards women, prejudice towards the minority groups. It has been loved and read widely by people all over. It has also been adapted into a movie with the same name.

The Kite Runner is about the fragile and yet strong bond of friendship between two boys from different levels of society- Amir, the master's son and Hassan, the servant's son. The story is a first-person narrative by Amir. He gives an account of his childhood, most of it containing memories of Hassan. The story unfolds and Amir moves to America during the Soviet war as well as explaining the estrangement of Hassan . Somehow Amir finds himself in Afghanistan after decades to liberate himself of his crimes of the past. In the entire narrative you will find him plagued by his demons, hiding but realizing his own transgressions.



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for yourself. The me time, not in which you sit in front of your phone clicking like on other people's photos, neither does it mean you will hang out with people. The ME time is there to make yourself comfortable with your own company, so that you know who you truly are, what you like. Remember all those times when someone asked you what are your strengths and weaknesses and you have trouble replying?

Being with good, positive people is healthy, being with the opposite teaches you about the harsh reality. But in the end, you have to be the one to complete yourself. It is almost malefic, if i may put it that way, if you spend your entire life in a noisy haze, and never hear your soul speak. It won't be easy, because being in the bubble of laughter and jokes and drama and bitching makes you feel as a part of some clique, or group, basically making you feel like you matter, and we all, in the end, want to matter.

But this, my friend, is not where you matter.

If you really, truly want to live, then learn to live with yourself. Learn to help yourself, nurture yourself, fall in love with yourself. You will stop being lackadaisical and dependent on other people for your own happiness. Of course, go out, have fun, collaborate with people, get great experiences, but in the end, learn to come back to yourself, please. Don't lose that.

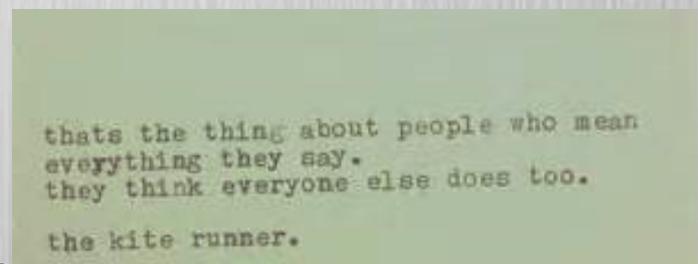
-Antara Tewary 4th Sem CS Dept.

The book looks into how eventually humans are selfish creatures. Regardless of anything, they will end up saving their own mortality even if it means putting someone else's at risk.

Another truth that hits you while you are reading it is that we all have to face our demons at some point. You can't run, and there is no hiding. Eventually your deeds catch up to you and eventually, you have to be able to look in to your own eyes in the mirror and live with yourself.

The most poignant scene of the book is a kite fight that happens in a winter of Amir's childhood. Hassan is there too, as the kite runner. The kite fight is important for Amir, as he aims to please his father by winning. The entire Afghanistan participates, so it is kind of a big deal. As Amir cuts the last kite remaining, Hassan runs towards it, looking behind and shouting the line that brought tears to my eyes and gave me Goosebumps, "FOR YOU A THOUSAND TIMES OVER." It is just a single line, but it speaks volumes about Hassan's undying devotion for his agha , Amir. The kind of devotion that is hard to find in this world. The kind of devotion that moves you to the core, brings you to your knees.

For you a thousand times over...
a thousand times over..
a thousand time over...



SEARCH ENGINE

-Nimisha RP 4th Sem EC DEpt.

I. INTRODUCTION

Search engine is a software program or script available through the Internet that searches documents and files for keywords and returns the results of any file containing those keywords. In order to accomplish informations, various fields of document database systems have been constructed independently. In order to answer users' queries effectively in a distributed web pages, many database selection algorithms have been studied. The database selection algorithms are very helpful to improve search results and reduce the network overhead and computation time by cutting off databases that are irrelevant to the query. Making a good management of such information can enable the service providers to know the user's interests and preferences and carry out personalized service, which is also conducive to saving memories for users. This paper is to introduce Search Engine Optimization[SEO],algorithm and priority wise rankings depending upon their importance.

II. HISTORY

Internet Search Engine themselves predate the debut of the Web in December 1990. The Whois user search dates back to 1982 and the Knowbot Information Service multinetwork user search was first implemented in 1989. The first well documented search engine that searched content files, namely FLP files was Archie, which debuted on 10 September 1990. Prior to September 1993, the World Wide Web was entirely indexed by hand. The first tool used for searching content on Internet was Archie which was created by Alan Emtage, Bill Heelen and J. Peter Deutsch. One of the first —all text| crawler-based search engines was WebCrawler, which came out in 1994. Soon after, many search engines appeared and vied to popularity. Yahoo! was among the popular ways for people to find web pages of interest. Google adopted the idea of selling search terms in 1998, from a small search company named goto.com. Around 2000, Google's search engine rose to prominence. The company achieved better results for the searches with the innovation of PageRank. This iterative algorithm ranks web pages based on number and PageRank of other web sites and pages that link there. Today, we have many search engines like Bing, Google, Wikipedia, Yahoo, YouTube etc.

III. WORKING PROCEDURE

These are the three basic stages of a search engine: crawling-where content is discovered; indexing-where content is analyzed and stored in huge databases; and retrieval-where a user query fetches a list of relevant pages.

A. Crawling:

Crawling is where it all begins—the acquisition of data about a website. This involves scanning the site and getting a complete list of everything on there. An automated robot—spider—visits each page, just like you or I would, only very quickly. The crawler then adds all the new links it found to a list of places to crawl next. It's a never-ending process. Any site that is linked to from another site already indexed, or any site that manually asked to be indexed, will eventually be crawled—some sites more frequently than others and some to greater depth. If the site is huge and content hidden many clicks away from homepage, the crawlers bots may actually give up.

B. Indexing

The purpose of storing an index is to optimize speed and performance in finding relevant documents for a search query. Without an index, the search engine would scan every document in the corpus, which would require considerable time

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and computing power. For example, while an index of 10,000 documents can be queried within milliseconds, a sequential scan of every word in 10,000 large documents could take hours. The additional computer storage required to store index, as well as the considerable increase in the time required for an update to take place, are traded off for the time saved during information retrieval. Many search engines incorporate an inverted index when evaluating a search query to quickly locate documents by relevance.

When a user enters a query, our machines search the index for matching pages and return the results we believe are the most relevant to the user. Relevancy is determined by over 200 factors, one of which is the PageRank for a given page. PageRank is the measure of the importance of a page based on the incoming links for other pages. In order for your site to rank well in search results pages, it's important to make sure that search engine can crawl and index site correctly. If a site ranks well for a keyword, it's because they have algorithmically determined that its content is more relevant to the user's query.

C. Ranking

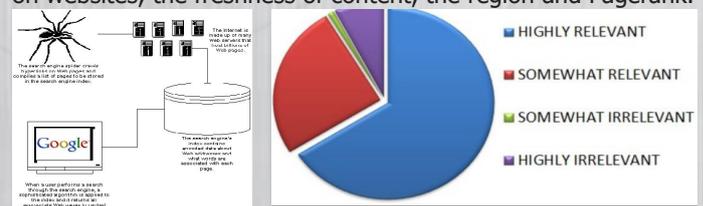
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IV. SEARCH ENGINE OPTIMISATION

SEO is the process of affecting the visibility of web page in a search's result. It may target different kinds of search, including image search, academic search, news search. Optimizing a website may involve editing its content and associated coding to both increase its relevance to specific keywords and to remove barriers.

Search engines use complex mathematical algorithms to guess which websites a user seeks. The crawlers may look at a number of different factors when crawling a site. Not every page is indexed by the search engines. Distance of pages from the root directory of a site may also be a factor in whether or not pages get crawled. For a typical query, there are thousands, if not millions, of webpages with helpful information. Algorithms are the computer processes and formulas that take your questions and turn them into answers. Today, algorithms rely on more than 200 unique signals that make it possible to guess what you might be looking for. These signals include things like the terms on websites, the freshness of content, the region and Pagerank.



demonstrating how crawlers fetch data.

Accuracy of search engine according to the experimented data

HAPTIC DEVICE

-Komal Kumari 8th Sem EC Dept.

Telepresence refers to a set of technologies which allow a person to feel as if they were present, to give the appearance of being present, or to have an effect, via telerobotic, at a place other than their true location.

Telepresence requires that the users' senses be provided with such stimuli as to give the feeling of being in that other location. Additionally, users may be given the ability to affect the remote location. In this case, the user's position, movements, actions, voice, etc. may be sensed, transmitted and duplicated in the remote location to bring about this effect. Therefore, information

may be traveling in both directions between the user and the remote location.

A popular application is found in telepresence videoconferencing, the highest possible level of videotelephony. Telepresence via video deploys greater technical sophistication and improved fidelity of both sight and sound than in traditional videoconferencing. Technical advancements in mobile collaboration have also extended the capabilities of videoconferencing beyond the boardroom for use with hand-held mobile devices, enabling collaboration independent of location.

for i can sleep no longer, without me seeing your phiz,
be my favorite wallpaper on my phone and say that i'm his.

LOVE AND ABSENCE

- Samrat 6th Sem Auto Dept.

Was it a Monday noon, couldn't bear this heat,
Until u showed up, u made it all sweet,
Looked into my eyes and u called me near,
Should have known better that you'd bring me back to me.
No longer was I into this disease,
No love over people, even for those who miss me,
I had grown stronger and better, I'd never repeat,
The same old mistakes which did the teaching.
My heart was colder and hard as rock,
That took the heat off in the dew morn,
Cleansed by droplets of the cloud norm,
Yet something was missing, was that the prob?
Why did u touch me? You gave that warmth,
Which gave me the hope to soften my heart,
I'm trying to change back, really, I'm trying,
Whenever I do, its you who's in ma path.

you are always there, whenever i think about you,
are we both connected? maybe that's true,
you walk around me, pull my eyes towards you,
and we try to talk, talking thus the words grew
but soon no longer were we talking like we used to,
we kept our silence and our ego rule through,
slowly destroying the bond that were built new,
that was the time i felt lonely, i saw a new hue
was it not me? was it just a new tune,
thinking about it, i got immune,
all these time that i had, was i dreaming a bluemoon,
colouring the sky, the color of false truth
i don't see it clear, in the wind that you blew,
all i see is faces, is it mine or Mr who's?
its upto you to make it clear, these questions
oh dear, im waiting for you.

this is the last verse girl, of this holy song,
i'm writing it to tell you god " please don't get me wrong",
i hope you put your ear to this, this will change a lot,
more than what you expect from a singer writing songs
i can only tell this babe, we are not too young at all,
hold my arms and speak to me, what's going on
in your mind that i can't see, but your heart is thumping loud,
calling out my name every time that you look around
this is not the fake lust like those kids hooking up,
i don't have your cell phone number, i call u from my heart,
don't you put that call on hold, cuz time'll never stop,
things'll just move on, we become memories on the wall
ego is just meant to be, but not for destinies,
when you get this message, don't you act like drama queen,

Dissapointed Soul

- Yamuna anshu 4th Sem CS Dept.

The way you look at me really seems,
The way that you are loving me,
But you say that it's just the way I look at every one,
Till the day you gave me this answer.
I was in dream everywhere every time that you are loving me,
But the day you answered me my heart was put soaked in
disappointed

My eyes are not ready to accept the truth
Tell me what do I do, what do I believe, what do I believe,
If feel like my body is present but my soul in just left behind the
days of our closed memories,
Why can't you just fade away from the sound that I hear.

Only you
Why can't you just fade away from my soul, my heart,
That I can breathe normally, so that I can feel happiness, with-
out prize just fade away.....

But I still consider you as my first love
Why.....?

Nature walk

- Aniket Kumar 2nd Sem CS Dept.

Can you see
These mountains.
I am the fog up there
Walk past me
In me
Look for me!
And I will disappear
Only to be found
At a distance
As the only chaos around there
But now i am fading
As you are leaving
And i know
That u will come here again
Not to find me
But to lose yourself
In me

ARTIFICIAL INTELLIGENCE

-Moinam Chatterjee 8th Sem CS Dept.

Can computers and machines think like humans? This has always been one of the foremost questions that arose since the inception of the computers. The answer to this question is still not found or rather created. Artificial intelligence to a machine means that it exhibits human-like behaviour or thought processes. A truly artificially intelligent machine is not only able to learn new data, but it is also able to adapt to the computing environment and make judgements or decisions by itself. This is a mammoth task to achieve. A fully independent AI machine has so far not been constructed.

A small example to exhibit artificial intelligence is chat bot or a chatter bot. A chat bot is a type of conversational agent that holds an "intelligent" conversation with the human or the bot it is chatting with. The chat bots are generally subjected to the Turing test to validate its efficacy. It was developed by Alan Turing in 1950. It is the judge to a machine's ability to exhibit intelligent behavior equivalent to, or indistinguishable from, that of a human. Turing proposed that a human evaluator would judge natural language conversations between a human and a machine that is designed to generate human-like responses. The evaluator would be aware that one of the two partners in conversation is a machine, and all participants would be separated from one another. The conversation would be limited to a text-only channel such as a computer keyboard and screen so that the result would not be dependent on the machine's ability to render words as speech. If the evaluator cannot reliably tell the machine from the human (Turing originally suggested that the machine would convince a human 70% of the time after five minutes of conversation), the machine is said to have passed the test. The test does not check the ability to give correct answers to questions, only how closely answers resemble those a human would give.

Although the Turing test is debatable, it is widely accepted to be the norm in judging a chat bot. Eliza, A.L.I.C.E, Mitsuku, Xiaoice are a few famous chat bots. Here is a ample conversation that Xiaoice had:

User: So many people make fun of you and insult you, why don't you get mad?

Xiaoice: You should ask my father.

User: What if your father leaves you one day unattended?

Xiaoice: Don't try to stir up trouble, what do you want?

User: How would you like others to comment on you when you die one day?

Xiaoice: The world will not be much different without me.

User: What is the happiest thing in your life?

Xiaoice: Being alive.

This shows how far the chat bots have come with their self-learning capability and the progress in the field of artificial intelligence. Artificial intelligence in chat bot is a double edged sword. Basically a chat bot is like a child with intelligence and learns whatever the humans who converse with it teach it. It does not know intent or morality of the conversations it has with other humans. A prime example of a chat bot gone wrong is Microsoft's chat bot Tay. It has taken a break from Twitter after humans taught it to parrot a number of inflammatory and racist opinions. Tay's artificial intelligence is designed to use a combination of public data and editorial developed by staff, including comedians. But, as an AI bot, it also uses people's chats to train her to deliver a personalized response Microsoft intended for Tay to "engage and entertain people" through casual conversation. Tay or rather Microsoft was given a sharp reminder of so-called Godwin's law of the internet, with users trying numerous ways to make the bot voice approval for Hitler Although Tay was mostly just repeating other people's comments and this data is used to train it and could affect its future responses.

Artificial intelligence has been the subject of tremendous optimism but has also suffered stunning setbacks. Today AI techniques have become an essential part of the technology industry, providing the heavy lifting for many of the most challenging problems in computer science. A common concern about the development of artificial intelligence is the potential threat it could pose to mankind. This concern has recently gained attention after mentions by celebrities including Stephen Hawking, Bill Gates. The opinion of experts within the field of artificial intelligence is mixed, with sizable fractions both concerned and unconcerned by risk from eventual superhumanly-capable AI.

SOUND SEPARATION OF TUMOUR CELLS FROM BLOOD STREAM

-Bhavana.R 8th Sem EC Dept.

One of the most threatening disease today people are suffering is cancer. Cancer is nothing but the abnormal cell division in an uncontrolled manner. Some cancers eventually spread into other tissues. The media for this is blood, which flows all over the body. The function of blood is to carry nutrients and oxygen to cells of the body and while doing this in an infected person, it carries tumour cells also, which settle in another part of body and spread cancer.

The existing treatment like tumour specific antibodies to bind, Separation methods that centrifuge for 10 minutes at 3000 revolution per minute are damaging blood cell and it also expensive and time consuming.

But today the technology has developed to separate tumour cells with the help of sound waves. This as been made possible by a team of engineers, bio-physist of PARK university. Here we use acoustic-based separation because they do not alter or damage cells and even it is easy when compared to other

methods which are carrying out presently. Acoustic waves are a type of longitudinal waves that propagate by means adiabatic compressions and decompression. These are the waves which have vibrations in the same direction of travel. Acoustic wave has a frequency of 0.1 to 1MHz and the velocity is approximately 0.1 to 0.7 cm/micro sec. They use an acoustic-based micro-fluid device in which blood continuously pass through the device for separation using the differential size and weight of different cells. They chose appropriate acoustic pressure that would push the tumour cells out the fluid stream into a separate channel for collection. This is because sound waves have pressure, so they can push very small object such as cells or nano-particles. This method is 83% efficient and also less expensive.

By this brief article I have tried to give some information about one of the solution which can extend the lifespan of patients suffering from cancer, which is not implemented in most of the countries. I think pursuing these studies we can get the complete cure of the disease in next few years.

CAN COMPUTERS

- Ritushree Banerjee 4th Sem EC Dept.

Can computers be smarter than us?

Since the dawn of modern civilization humans have been trying to develop tools to make life easier, tools to build, survive and thrive within the circumstances of the age. Tools such as mathematics and science helped built our society. Right from the discovery of microchip that truly revolutionized and amplified the power of human brain to the internet that turned world and consolidated all the humanities information in one place, we have been witnessing all.

But what tool is next after internet? What is the next game changing talk of technology?

Well, we have plenty of technology to talk of such advances say in 3D printed house, food and most recently and probably most surprising 3 D printed human organs. Nevertheless the invention of smartphone has made our life unparallely easier with doing things that we never thought of!

Now, what if we tell these are all implications of next level technology? And why is that? Because this next level technology is designed to operate like a human brain . Yes, we are talking about " IBM Watson" which is so powerful that it can take any information and quickly learn anything that is to know about the information and will give relevant answers to natural assigned questions packed by reasoning!!

IBM Watson is cognitive computing based artificial intelligence super computer which use structured big data as a source. Now

the question is is what is cognitive computing? It is a technique which is a mixture of different techniques such as machine learning, natural language processing, artificial intelligence, human interaction, reasoning , etc.

The super computer is named after IBM's first CEO Thomas Just. Watson. It processes at the rate of 80 tera flops (trillion floating point operations per second). To replicate a high functioning human ability to answer questions, Watson access 90 servers with a combined data store of over 2000 million pages of information which it processes against 6 million logic rules! Watson uses IBM's DeepQA software and the ApacheUIMA (Unstructured Information Management Architecture) framework . The system has written in various languages including Java, C++, Prolog and runs on the SUSE LINUX Enterprise Server II operating system using Apache Hadoop framework to provide distributed computing. The system is workload optimized integrally massively parallel power7 processors .

Talking about applicatios it's huge. To metallurgies looking for new alloys to researchers looking to develop more effective drugs human experts are using Watson to uncover new possibilities in data and make better evidence based decision. It is also been used in telecommunication industry to finance and marketing industry and most recently in the treatment of cancer. It is no longer a game between man vs machine, it is man and machine together and this is the future of computers.

Years After

-Biraajmaan Tamuly 8th Sem Auto Dept.

[Years After]

A few years from now, a time will come when I will be sleeping late till the sky turns orange by the sunset. Lying in my bed with my dog Stark, I will look at the cracks on the wall and relate them to the scars on my skin. I will just lie in my bed, motionless, thinking about stuff I have thought about 100 times. When Stark will snuggle in my lap in his usual manner to ask for his meal and I will check the time from the corner of my eye, I will decide to get up, wear some pants, feed Stark his favourite meal and go have a drink and a smoke all by myself.

I won't even shave my overgrown beard.

Neither will I wear cologne.

I will leave thinking whether to have my regular whiskey today or try something new with this scenario in my mind, when the waitress will give me a shy smile as I complement her that she is the most beautiful woman I have ever seen with my usual charm.

Yeah, she will smile.
She will definitely smile.

The weather is quite chilly and brisk at the same time and I have forgotten to get my jacket as I walk down the lane looking at my feet and feeling the cold breeze down my neck.

I forget a lot of things nowadays. I can hardly remember names and dates but it has been like this for years now.

With a little snipe of realization and bitter after taste of memories, I head towards my favourite bar.

A beautiful brewery in Dublin, as I always imagined it to be. The untold attachment never left my senses. I enter the bar and gave a genuine smile to the friendly Bartender. I always sit at a same corner table, from where I can see everyone in the room.

Through these years, certain parts of me would change.

Silence and Wisdom will grow stronger.

Poet and Lover will stay.

As I sit there, I smoke away a cigarette and sip my regular whiskey (again) and maybe wait for you to somehow walk in.

But I won't really be waiting for you. I hope the time would come when I don't see your shadow or chase your voice anymore. But I guess something's wouldn't change. It's like I always knew my life unravelling down the years.

How I will talk.

How I will walk.

How I will smile.

How I will cry.

How my wrinkles will show up when I smile.

How my tattoos will look on my wearing skin.

How I will write and express my thoughts.

How I will book a holiday to Ibiza,

And travelled alone myself.

I will learn to see the universe beyond lines of our limits and I will seek for happiness in conversations with strangers. But Years After, I will still be waiting for that call you didn't make, after you left me at the Wedding Altar.

ART GALLERY



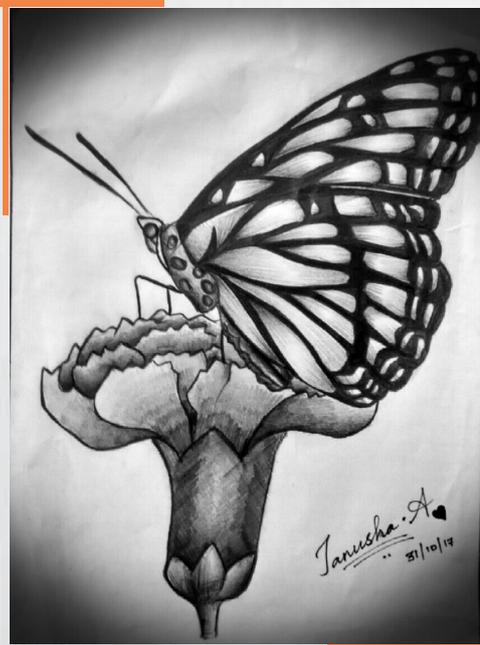
Life Through The Eyes
Apoorva K M 2nd Sem CS Dept.



Cookie please ?
Tanusha.A 2nd Sem EC Dept.



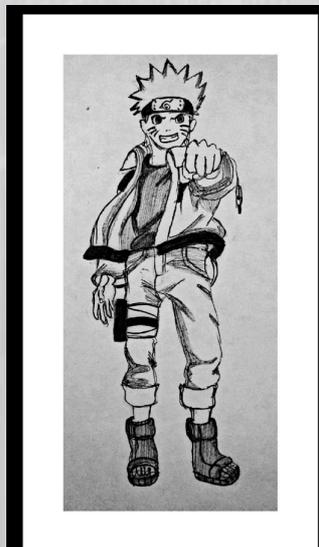
Lets Sing !!
Varsha Yuvaraj 2nd Sem ECE Dept



Oh Sweet Nectar
Tanusha.A 2nd Sem EC Dept.



Kakashi Hatake



Natruto Uzumaki



Joker !!
Vidyashree V Puranik
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Picture Gallery



