



CSIVESIT

REDUX MUMBAI

- THE CITY OF DREAMS



CYNOSURE'20



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Editorial

Abdul Kalam once said, “A dream is not what you get when you are sleeping, it is what doesn’t let you sleep”. Mumbai, the city that never sleeps, seems to be the embodiment of this adage. Hence, paying homage to this wonderful place, the lifeline of millions, thrumming as though with a single heartbeat, this year’s theme is Mumbai, The City of Dreams!

From an inconsequential part of Ashoka’s kingdom to the financial capital of present-day India, Mumbai has come a long way. But, a few things remain comfortably constant. Mumbai has attracted people from ages, and it continues to do so even now. It almost seems that this city will never lose its charm or appeal, pulling people from all walks of life with a promise of a better tomorrow. The city has something to offer for everyone! Some are attracted by the glamour of this metropolis, some by the financial prospects, some by the whispered hopes to make it big in life. The city can be in equal parts cruel and kind, welcoming and hostile. The larger than life image of this city has attracted those who dare to dream, who carry hopes in their eyes and prayers on their lips. From the local trains to juhu chowpatty, from Victoria Terminus to Bandra to Colaba Causeway, from the Gateway of India to the Prince of Wales museum, from vada pav to pav bhaji, this city will truly remain Aamchi Mumbai, tugging the heartstrings of all its citizens with a culture that is as global as it is desi.

We, CSI-VESIT delightfully present to you the latest edition of REDUX: Mumbai - The City of Dreams. Right from the mystic charm to the blazen transparency of the city, we left no stone unturned. This academic year started off with a bang and has maintained that high ever since. It has been extremely noteworthy. We have, thus curated all the happenings which made this year remarkable. We have explored each and every domain from technology to space to politics, even sociology. Be it the dangerous Covid scare or the bushfires of Australia, drones or wave computing and our ever memorable events, we have it all. Also, the quarantine diaries, of a few of our members, have been included. This will therefore prove to be the perfect amalgamation of technical and non-technical knowledge.

Happy Reading!!

Table of contents

05	Events Organised
10	Faaiz Dastagir Mumbai : City of Dreams
12	Atharva Gupte Neuromarketing: Big Brain Time
13	Meghana Achanta Life without the lifeline of many?
14	Itisha Dalvi When reality becomes boring
15	Yash Mate Recent Developments in Space Research
16	Maitraiya Dandekar How Drones are the key to the future
18	CV Ananya Feminism through the Ages
19	Tarun Chhabriya Linux: The future of desktop computing
21	Aishwarya Sahoo When Australia Was Burning...
23	Aadi Fernandes Lockdown-The thoughts of an Extrovert

24

Ashutosh Matai

Assassin's Creed Odyssey: Game Review

26

Aishwarya Sahoo

Collective Chronicles of CoronaVirus

27

Maitraiya Dandekar

The next step in Brain Mapping, AI and Biotech

29

Somesh Sidhwani

Unravelling Social Media's Darkest Secrets!

31

5 of the Most Important Stages in the Content Marketing Process

34

Priyanka Awatramani

A Stranger

35

Varun Anand

Competing in Space ???

36

Maitraiya Dandekar

The Magnetic Future of Computing

37

Shiv Kaul

What was their Fault ??

39

Rahul Tejawani

PASSENGERS

40

Aditya Srivastava

Twitter Sentiment Analysis

41

Rahul Tejawani

IoT in the Power Sector

EVENTS ORGANIZED



SHERLOCK AND WATSON

- 1. PRAXIS 2019 :** CSI-VESIT conducted three successful events during Praxis 2018, namely, 'Code Knights', 'Sherlock and Watson' and 'The Amazing Race' for students of all the years. It was the first event after formation of the council.
 - CODE KNIGHTS:** Code Knights was the pre-Praxis event organized by CSI-VESIT. The event was hosted on Hackerrank. It was spread along a total of twelve hours. Contestants were given six problem statements with certain test cases being allotted to each question. The contestant who scored maximum points in the least time won the event.
 - SHERLOCK AND WATSON:** The second event that CSI-VESIT organised was Sherlock and Watson. This event not only tested the coding skills of the participants but also the mental connection and coordination with their team partner. Both the partners were seated in two different computer labs and given different questions. The twist was that after a stipulated amount of time, the players were required to switch their places, without telling each other their respective problems collecting hints left by their respective partners, they had to complete the remaining code of their partners



THE AMAZING START



THE AMAZING RACE WINNERS

- AMAZING RACE :** A crowd favourite, and a mega event of PRAXIS'19 in collaboration with CSI-VESIT, 'THE AMAZING RACE ' kicked off on 27th September at 10:30 near the Vivekanand Statue. After last years' success, one of the most awaited events this year. The teams had four members each, and were required to cross each hurdle which put their logical and technical skills to test. It consisted of 8 rounds. After completing each one, they were given the clue to the next location, scattered across the campus. Each task was different and unique in its own way which together gave you an adrenaline rush. The team which adhering to all the rules reached the finish line won the event.
- JAVA WORKSHOP:** CSI-VESIT organized a two day Java workshop. It covered all the basics required, followed by OOP programming, inheritance and polymorphism. They were taught these concepts with the help of simple examples. It was a hands-on session and highly appreciated by all the attendees.
- HIDDEN CIPHER:** The first technical event of the semester 'Hidden Cipher' was conducted in two major rounds, the paper elimination round and the final round. The students participated in groups of three. The first round was rebuses. The second round was based on ambigrams and tested their quickness and creativity as it was a buzzer round. The least scoring teams were eliminated after this round. The third round was the most interesting of all, the betting round. This was based purely on luck and the result was unpredictable which completely turned the tables. The final round involved coding and decoding the Caesar cipher which revealed a task to be performed. This round tested their mental and physical agility. The teams which worked in perfect coordination emerged victorious.



JAVA WORKSHOP



PYTHON WORKSHOP



HIDDEN CIPHER

4. **PYTHON WORKSHOP:** Python has a plethora of uses including GUI based applications, data science, front-end and backend development of websites or even IoT! It is a multi-paradigm programming language, developed as more concise, straightforward and easy to understand. This workshop covered both basic and advanced Python and was a great success.
5. **GITHUB WORKSHOP:** CSI-VESIT, in collaboration with the Github organization, conducted a workshop to help students get acquainted to the basic concepts of GitHub and how useful it is in the software industry. It received a tremendous response from all the departments. They were taught how to pull and push requests, how to commit and informed about the various tools used for version control.
6. **LAN GAMING:** This was the most thrilling mega event of the even semester and took place in two phases. The first phase included crowd favourites like Dota 2, Need for Speed, Counter Strike: Global Offensive and PUBG. In the second phase, FIFA'20 was organized on the latest gaming console PlayStation4. The classrooms were brought to life as everyone cheered at each pass, dribble, shot and goal. The entire gamezone proved to be a treat to the eyes as the best of the best competed for the final title.
7. **ODE TO CODE:** Keen to inspire young coders, CSI-VESIT in collaboration with ISTE-VESIT organised a first-of-its-kind Prototype designing competition, ODE TO CODE. It was a rigorous one-day coding event. The participants had to design ideal websites for the given problem statement. The most interesting part about the event was that there were milestones to be completed. It consisted of UI modelling, ER diagrams, database



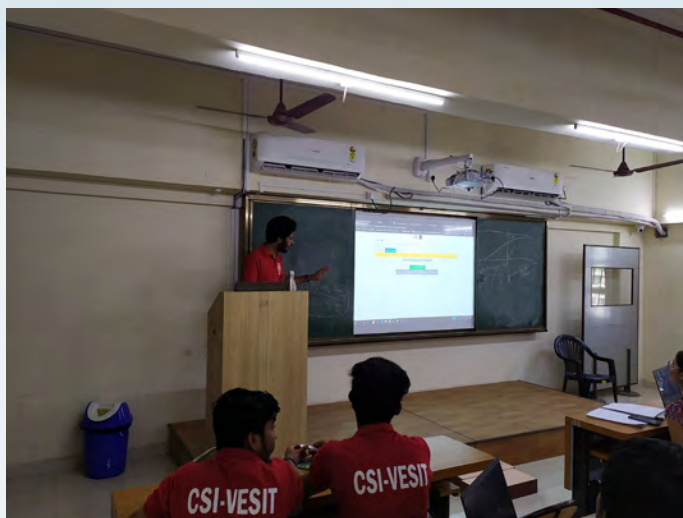
GITHUB WORKSHOP



LAN GAMING



ODE TO CODE



BOOTSTRAP WORKSHOP

management and video uploading. The projects were scrutinized by Mrs. Mannat Doulatani and Mrs. Pooja Shetty.

8. **BOOTSTRAP WORKSHOP:** The Bootstrap workshop focused on the students getting an insight into the world of web development and software project development. The attendees of the workshop were taught how Bootstrap helps reduce the workload on the developers as they don't have to write HTML and CSS codes from scratch.. Students were also taught the different ways to install Bootstrap by manually downloading the source files using CSS or JS, Bower, NPM or CDN. The workshop received a huge turnout from second year, third year and MCA students and the feedback received was also positive.
9. **DJANGO:** CSI-VESIT organized a Django workshop which was co-sponsored by Jovian.ml. Students got an idea about how to create web pages and connect them to a database using the Django framework. The sponsors also provided some interesting goodies.
10. **CRICOMANIA:** Cricomania, CSI-VESIT's most exhilarating mega event of the academic year, features a bunch of mini games which are based on the game of cricket and is the perfect non-technical event for all the participants. It involves cricket related questions and bidding of famous cricket players.



CRICOMANIA



DJANGO WORKSHOP



MACHINE LEARNING WORKSHOP

- 11. MACHINE LEARNING:** The Machine Learning Workshop was conducted as a CSI-IEEE collaboration. It was a 4 day rigorous workshop. The objective of the workshop was to make the students realize that data is the lifeblood of all businesses. Data-driven decisions increasingly make the difference between keeping up with the competition or falling further behind. Machine learning has a vast array of applications from our day-to-day life. The workshop was started with the basics of ML and went on to explore more complex applications.
- 12. ARTICLE WRITING:** This event has been introduced this year itself basically to help our members showcase their phenomenal writing skills sitting in the comfort of their home this quarantine. The theme given was 'Recent Developments in Space Research'. We were appalled by the different perceptions and knowledge of the students. Mr. Atharva Gupte was our judge for this event. Given his great experience in this field, he helped us scrutinize all the articles and also provided valuable feedback. The winning articles are published in our Annual Magazine 'Redux'.
- 13. TECHNICAL PAPER PRESENTATION:** CSI-VESIT, organized Technical Paper Presentation during quarantine. A perfect platform was raised for the students to present their vision, authentic ideas and technical knowledge with this event. All the submissions were done online and reviewed. The participants sent Voice Over Presentations for the papers drafted. The event was a novice addition to our eventlist.

Mumbai : City of Dreams

-Faaiz Dastagir

A lot of things remind me of Mumbai, and Mumbai makes me wonder about a lot of stuff. Out of the plethora of things that Mumbai reminds me of, it has never come across to me as the 'City of Dreams.' Now before you grab your 'lighted mashals' and arrive at my doorstep in protest, Let me explain.

Mumbai was never and can never be called the 'City of Dreams.' It would be misleading, cruel and outright mean for all the dreamers out there. In trying times and the constantly evolving state of our country, Mumbai stands as a beacon for something. That something is definitely not a call to the dreamers out there to flock the beacon

like moths on a dreary night. Mumbai is not a symbol of hope nor is it a haven for all those who wish to achieve. Mumbai shouldn't be analogous to what people call the 'City where we can make it.' It is time before someone spoke against this blatant rehashing of Mumbai's image only to coddle the poor, soft, so-called 'dreamers' that will suffer once they end up in Mumbai.

Mumbai is a city of perseverance. Mumbai, the city, will beat you down to your knees and kick you in the abdomen when you're begging for mercy. Mumbai will laugh on your bleeding self lying down the drain and then taunt you to get back up, only to beat you down again. The 'City of Dreams' does not and will not care about where you come from, who you know and what you're capable of. The sole thing that this cruel, merciless and soulless city will test is how bad you want it. Aamchi Mumbai is the psychopath who will enjoy you suffering from the rats in the sewer and probably livestream it for the whole world to enjoy. Aamchi Mumbai will test how hard you can get hit and get back up. It will keep a tally of the number of times you got back up from that gutter and asked for another hit. Once you acquire a taste of the Mumbai's actually made of, that's when it gets worse.

When all your dreams are awash and you're struggling, deep in debt, being unable to afford the rent, and getting by with unfulfilling food, Mumbai won't come to your rescue. This city and its people will not care about your suffering because let's face it, everyone is probably worse off. Mumbai will feel like a sinking ship and aren't all of us just trying to stay afloat. Holding on to our broken doors and cannot 'afford' to have DiCaprio on board. The sinking ship feels like a nightmare but it's cute compared to a ship sinking in a thunderstorm, in the middle of the ocean. That's what monsoons in Aamchi Mumbai will feel like. The mighty buildings and pothole-ridden roads will mock your dreams and all the aspirations that you came with to this city. The wet, slimy, smelly collars that you will find your face mashed into in the locals will seldom make you feel like a dreamer trying to make it. It will make you wonder whether that wet spot that's being rubbed against your face with every jerk is sweat, spit or just murky rainwater. Mumbai will not offer you a job with a simple interview. It will involve a fight to the death. The death is the actual death of the dreams of other dreamers you're competing with. This city will not bat an eye on letting you go, making you suffer and will definitely never be sympathetic. Mumbai will be cruel enough to choose someone more capable over you. It will choose the workers, the people who are willing to grind stone with their teeth. The people who will devour the opponent without batting an eye, in summary, people who have the 'spirit of Mumbai' in them. Mumbai will not resort from being politically incorrect and it probably wouldn't care about your gender either. Which is the beauty of it? Mumbai will beat you down, with complete impartiality and with the best of intentions. Aamchi Mumbai will test if you're capable, not of achieving or innovating, it will test if you're capable enough to survive. To test what lengths you will go to, just to make it. Mumbai will not turn you into an empathetic, kind and lovely human being. You will probably turn out to be mean, aggressive and highly competitive. But it will make you surely value the tiniest of pleasures in life.

To be honest, Not many people make it in this city. But let the beggars, people living under bridges, on couches in 1 RK's and in crowded smelly subways make you think otherwise. A few people make it. Considering the massive population that Mumbai inhabits, the few is also pretty significant. But living in a city like Mumbai will be harsh, highly uncomfortable and overall pretty bad. Coming to Mumbai is analogous to signing a deal with the devil. Selling your soul to live through hell, which, when logically thought of, is ridiculous. But it is what it is. I really

want this article to end on a positive note, but let's face it, not many stories in Mumbai end positively. People either give in to the pressure and back away. A lot of them accept their fate and become mere slaves to the cruel 'City of Dreams.' But there are a few who make it. You will meet them in local trains, and you won't recognize them as they are indistinguishable from the countless faces around this city. Again, that's the beauty of this city, it doesn't discriminate. A tech titan and a daily wage worker all travel in the same, overcrowded, local to CST. But those who make it hit it big.

Mumbai might be cruel, but it rewards you for the countless blows you've taken to the face. Mumbai won't pay the hospital fees for all the shattered bones, but it will unquestionably make it known. The stories of you getting beat and still standing tall will be told for decades. You will not be different, but you'll be strong. Mental toughness comes at a price. You will find yourself being unable to survive without the hustle-bustle of the city. You will enjoy the crowded beaches and unwholesome street food. You will revel at the magnificent architecture of buildings. You will be unfazed by the living conditions of the countless people living in the slums. You will curse at the BMC for the pothole-ridden roads and the never-ending traffic. You will find yourself strangely addicted to the polluted air of the city. You will be comfortable with sharing stories and find yourself involved in small talks with people you'll never see again. You will find yourself, strangely attracted to this cruel, mean and torturous excuse for a City. When Stockholm syndrome settles in and when you realize that you're in love with this monster, that's when you will call yourself a 'Mumbaikar.' You will make it in the city, knock it big! You will once again stand as a beacon of hope for all the dreamers out there and then you will be cursed when those dreamers come into the city. The same dreamers that once worshipped you will challenge the legitimacy of your success and chalk it up to political means or contacts. The same dreamers will receive the same number of blows, but they won't make it. The few who do will have a newfound respect for their icon. The few who will make it, will probably meet their icons in the same train, bump into each other and both of you will curse 'Pudhe chala, tujhya aaichi gaand' to each other.

In conclusion, Mumbai is far from being called a 'City of dreams' and calling it that would diminish the peculiar qualities and the bewildering nature of the city. Mumbai is a city of dreamers, dreamers with ineffable willpower and dedication. Mumbai provides the fuel for you to reach escape velocity and shoot for the stars. Mumbai is precious, and no matter how harsh it gets, It's home.

Neuromarketing: Big Brain Time

-Atharva Gupte

The world of brands is a jungle with many trees in it, diversifying at every turn introducing new techniques to sell your idea to the outside world effectively. We find that everyday there is new and bold content consumed by people in different ways. Therefore, the normal for marketing in 2020 is finding the abnormal; creating the unconventional; and using techniques which no one would have thought of in their right minds.

Marketing techniques are just like scientific discoveries, you think you have reached the pinnacle of innovation only to discover something new the very next day. Such techniques can be perfected by integrating different aspects together. The prime instances would be Artificial Intelligence and Data Analytics, they come together to give ideal consumer statistics and demographics. The last few years, unconventional marketing practices took a new turn with the integration of Neuroscience into Marketing. Neuromarketing is the study of how a customer interacts with the brand, and how their senses respond to it impulsively. This way, researchers get exact data of what goes in the mind of a consumer when he sees the marketing material. The tests can be as complex as EEG and fMRI scans to simply tracking the moment of the eye to see which parts of the webpage grab its attention. This technique can be used to make appropriate packaging, pricing strategies, differentiating products and developing new campaigns.

Every brand aims to have an optimum Click Through Rate, Neuromarketing is Click Through Rate but involving what actually makes you click with the target advertisement. This can be a revolutionary change because sellers don't need to rely on consumer surveys, and knowing the way a person will react to a product saves a lot of money which could be wasted because of a marketing failure. One of the most known failures in the world of branding and advertising was the New Coca Cola Campaign. It started because Pepsi was gaining market shares and leaving the iconic beverage behind, this spiked up a new Coca Cola which tasted better and sweeter and better than the Pepsi. The success of this differentiating strategy was short lived as this move backfired, Coca Cola received a lot of criticism for the 'new' drink. The main mistake was that Coca Cola wasn't a beverage brand for the world, they didn't sell a cold drink, they sold happiness and comfort. This established trust turned to dust with only three 'new' letters on the can. Neuromarketing is the study of these cognitions and emotions one goes through after seeing a brand. Continuing with the Coca Cola story, today, 94 % of the world's population recognizes the iconic red and white logo of Coca Cola.

The reptilian brain is the part which deals with the emotions attached to 'you', it controls your involuntary actions and is what has control over the cortex of the brain. When it comes to traditional marketing even mannequins are a powerful marketing medium, when you see it wearing the perfect dress, adorning a shiny necklace and tugging on the perfect heels you forget that it is moulded plastic and you start seeing yourself in that outfit. Another insight from neuroscience which has been applied to marketing is the term, 'bestseller'. When people are buying something 90% of the decisions that they make are involuntary, people tend to trust the crowd and go with the flow. One of the best examples of creating a brand trust is The New York Times Bestsellers List, it has become a universally trusted and acclaimed brand. The entire world follows it and bends to it. The best seller #1 tag on Amazon establishes a sense of comfort in the minds of first-time online shoppers and also vouches for the product. These changes might seem minute at this level but they produce billions of dollars of revenue and priceless customer loyalty to the brand.

Marketing is nothing but bold creativity, be it advertisements placed according to organised demographics or Burger King's dig at McDonald's on Twitter. With different brands taking new steps to be seen, this new technique is definitely a huge advantage for corporations who can afford the expensive research and technology. Neuromarketing in all its entirety would deliver the answer to one question that neither the consumers nor the marketers know the answer to.

"What does the customer want?"

Life without the lifeline of many?

-Meghana Achanta

Yes, you saw the title right, 'Life without the lifeline of many'. I'm pretty sure most of you might have grasped the underlying meaning of these words. If you haven't, then let me spell it out to you: "F O O T B A L L". Never in my life would I have ever thought that I would experience such a period when there wouldn't be any football matches. And you know what's the first fact: I'm a huge Liverpool fan. Many of you might have guessed the reason why I'm in grief more than anyone else out there. This was supposed to be our moment. We were going to lift the Premier League Title after 30 freaking years. This is probably the biggest moment that all of us were waiting for. But it's not just about my fixation with football. About 3.5 Billion people across the globe are feeling as miserable as I am or probably more than that. The 2019-2020 season had way too many surprises. Be it Erling Haaland scoring a hattrick on his Bundesliga debut or the uncertainty that still exists on who would lift the La Liga title. We cannot ignore the fact that Lazio is giving a tough competition to the mighty Juventus in Serie A and how Atalanta destroyed Valencia in the round of 16 in their debut Champions League season. Football is not just a sport, it is a phenomenon.



LIVERPOOL ECSTATIC AFTER WINNING THE UCL 2019

The late nights that we stay up cheering our favorite teams, making bets with our friends to see which team would lose or cruise to the next round and my personal favorite, hating the rival teams along with reanalyzing the matches and checking the line up, all of these situations have gone like "Poof". The worst part is, most of us have missed the Champions League round of 16 along with every other league match. I mean the saddest part is that we can't help but agree to the fact that it is better to postpone the matches, rather than see most of our favorite players suffer from the ongoing pandemic. Thank God, that the UEFA has decided to postpone matches rather than cancelling them or declaring the season as null and void. That would have surely brought a heartache to many fans and players. The only thing that is keeping me sane in the current scenario is watching all those reruns of the past matches and reviving those moments. Currently, I'm praying that the pandemic simmers down so that the rest of the season commences and all of us will be able to enjoy our favorite sport again!

When reality becomes boring

-Itisha Dalvi

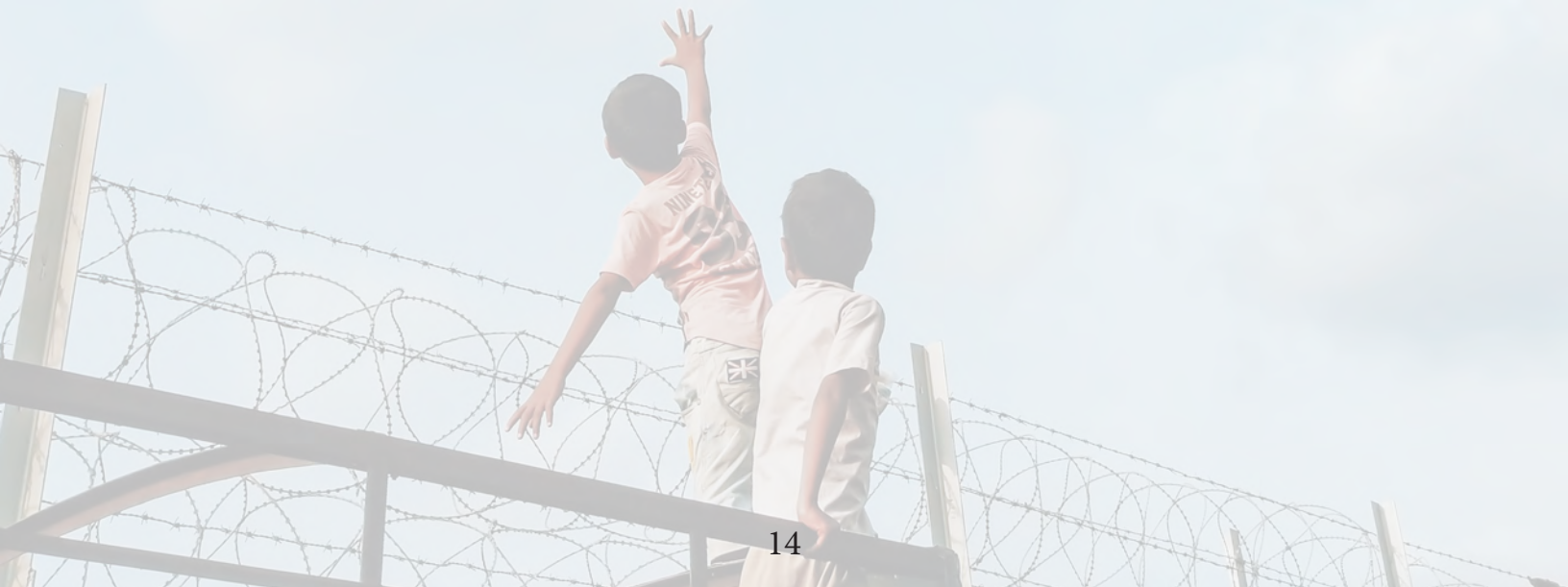
As I flick little balls at a monstrous Blastoise, the fabric of reality doesn't seem under threat. The animated thing jumps around and finally succumbs to an upward swipe. What I was left with were a few stats and a camera view of the road. There is nothing more that suggests that the Pokemon Go was anything more than a fad, but could this be a ripple of a technological wave that could transform society..?

This emerging technology called Augmented Reality superimposes computer-generated images on the real world, courtesy of a cell phone camera or special video glasses. Now imagine bubbles floating before your eyes, filled with cool information about stuff you see on the street. Science fiction? Nope. It's augmented reality. Augmented reality adds graphics, sounds, haptic feedback and smell to the natural world as it exists. With it you might aim a phone's camera at a restaurant, and on the screen you'll see not just the venue but also a review hovering above it. Everyone from tourists, to soldiers, to someone looking for the closest subway can now benefit from the ability to place computer-generated graphics in their field of vision.

Until the massive success of Pokémon Go in 2016 when AR was catapulted into the public's mind, AR was overshadowed by its cousin, virtual reality (VR). You would be forgiven if you got the impression that the future is all about virtual reality. Maybe it's because Hollywood and pop culture have already spent years putting the idea of virtual reality in many people's heads through films. Maybe it's simply the fact that the latest generation of more refined virtual reality headsets have grabbed all the headlines recently. Whatever the case, it'd be easy for readers to miss the fact that much of the tech industry is betting big on augmented reality instead of virtual reality.

Augmented Reality is currently considered as having potential for innovative teaching applications. This year the next big battleground between titans of the smartphone industry will be augmented reality, as both Apple and Google duke it out with new phones. More recently AR has helped us drive, overcome phobias and even go as far as putting names to faces. AR is changing the way we view the world - or at least the way its users see the world. Picture yourself walking or driving down the street. With augmented-reality displays, which will eventually look much like a normal pair of glasses, informative graphics will appear in your field of view, and audio will coincide with whatever you see.

Augmented Reality is the future. Fact! This incredible technology is going to revolutionise nearly all avenues of daily life as we know it. It needs embracing and realizing now, its benefits are going to be great and change the surface and fabric of what we consider now to be modern day society.



Recent Developments in Space Research

-Yash Mate

From lauding ISRO for their incessant toil in 'Chandrayaan-3' mission to planning the prospects of future in space with 'Gaganyaan 2022' mission, space research has forged ahead unlike anything. From embedding 'Artificial Intelligence' in humanoids and sending them into space to launching applications for geospatial navigation, space research is the new buzz. The journey of years of persistent research has proved to be fruitful when we witness the heroics of scientists, astronauts, researchers and many others who have bolstered innovation in the field of 'Space'.

The 'Gaganyaan 2022' mission would truly mark a renaissance for India in the sphere of advancement in space research. This indigenous mission is a revelation as India would become the fourth country in the world to send humans in a space-flight after Russia, the United States of America and China respectively. Geosynchronous Satellite Launch Vehicle GSLV Mk III, the satellite developed by ISRO would be used to send three astronauts into space for at least seven days as a part of the Indian Human Spaceflight Programme. This satellite is enough to suffice the payload and the rocket boosters used by the launcher provide enough thrust required to lift-off. According to G Madhavan Nair, former ISRO chief: "The mission will enable ISRO to achieve higher levels of reliability in launch and satellite technology. It will help in employing 15,000 people and out of them, 861 will be from ISRO".

Gaganyaan has a budget of 10,000 crores and is expected to launch by December 2021, at a center in Bangalore. The astronauts would receive module-specific training for this mission through simulations. However, before orbiting astronauts go into space, ISRO would send half-humanoid, a lady robot 'Vyom Mitra' into an unmanned spacecraft in December 2020. ISRO chairman K Sivan told the half humanoid will simulate human functions in space and also interact with the environment control life support system. "It will be simulating exactly the human functions there (in space). It will check whether the system is right. This will be very useful to simulate as if a human is flying," he added. Microgravity experiments encompassing factors like bacterial, oxygen levels, temperature, medical examinations, and environmental monitoring would be conducted. Another breakthrough that could dramatically decrease the hazards of loss of domestic goods, fisheries and cargo, the revolutionary innovation designed by ISRO, is the 'NavIC' messaging system. Indian Regional Navigation Satellite System (IRNSS) popularly known as 'NavIC' is fundamentally devised for terrestrial, aerial and marine navigation. Vehicle Tracking, Fleet Management, visual and voice navigation and a myriad of other features are just the icing on the cake. It provides accurate positional information service to users in India as well as to regions extending 1500 KMs from its boundary. The application is integrated with mobile phones to make it accessible and portable. Fishermen, travelers, hikers, ship-captains could use this for navigational purposes and disaster management. It broadcasts warning messages about emergencies like high tides, tsunamis, cyclones, and earthquakes. Recent researches about celestial bodies orbiting the Earth, which includes comets, meteorites, asteroids and other heavenly bodies have claimed that the biggest asteroid of 2020, would be orbiting in extreme proximity to the earth's orbit on April 29. Although the satellite is not expected to collide with the Earth, NASA has classified it as a potentially hazardous object. The asteroid '1998 OR2' a humongous asteroid with a diameter ranging from 2-4 km, would orbit at a distance of about 62 lakh kilometers from the Earth, moving at 8.69 kilometers per second. The distance of the Earth from the asteroid is 16 times the distance of the Earth from the moon. The asteroid is considerably huge and reasonably big, hence it has been classified as potentially hazardous. 22 celestial bodies have been classified as Potentially Hazardous and have their trajectories in the critical collision path of the Earth. Observers would see this asteroid as a slow-moving star.

For the avid astrophysicists, or the keen observers who wander in the land of stars, or for the thousands of inspiring women-scientists who taught us what real women empowerment meant, space research is a blooming area and we have an incredible journey ahead!

How Drones are the key to the future

-Maitraiya Dandekar

Drones, or Unmanned Aerial Vehicles (UAV), can quickly and safely be deployed over disaster areas. Responders can use drones to create 3D maps, fast scan for natural disaster victims, and assess damaged infrastructure among other applications. Drones play an essential role in emergency disaster response. The benefits of deploying UAVs humanitarian purposes has prompted the United Nations (UN) to publish an official policy brief on this topic. It was verified that using a private LTE network to control and communicate with the drones is an effective means for enhancing situational awareness and communicating with the affected population during a disaster.

Private LTE, quite simply, is envisioned as standards-based Long Term Evolution networks designed to serve specific enterprise business, government or educational purposes. They can be operated by traditional mobile operators. They could also be operated by third party network providers. Private LTE is being tested to support a number of use cases, from enterprise connectivity to IoT use cases.

The drone industry is experiencing what we could call the drone golden age. The global drone market is forecast to grow from \$14 billion in 2018 to over \$43 billion in 2024 at a CAGR of 20.5%. According to the Drone Market Report 2019: Commercial Drone Market Size and Forecast (2019-2024) published by ResearchAndMarkets, “service drones will continue to be the largest segment of the drone industry although the software is the fastest growing. Energy is and will continue to be the largest industry on the drone market, but Transportation and Warehousing are going to close the gap and overtake all others as the fastest growing industry. Inspection continues to be the leading application method of drones, but the greatest growth is expected in drone deliveries.”

Nokia conceived drones using private LTE networks a few years ago with the vision of offering smart cities their own private network dedicated to city drone management. The years of research and testing brought the world's first test of a wireless connected drone using a private LTE network to Sendai City. In November 2019, Nokia performed the world's first test of a private LTE mobile broadband network to demonstrate the effectiveness of drones for disaster prevention and mitigation in Sendai coastal areas, specifically at the Minami-Gamo wastewater treatment plant, one of the main areas of devastation that was rendered inoperable by the tsunami.



NOKIA SCIENTISTS TESTING THE DRONES

For this test, Nokia had to provide real-time information about what was happening across the affected area, even when the public communication infrastructure was down. Moreover, it was important to make sure the information coming from sensors translated into real-time instructions to direct people to safe areas, help first responders on the ground, and monitor the progress of the evacuation in real-time to update the participants as more information and analysis came in. Also, the company had to provide reliable, mission-critical communications for controlling drones over large distances and conduct these alert operations over broad areas.

Nokia Drone Networks is a turnkey solution consisting of one or several drones equipped with gimbals with HD and thermal cameras, a private LTE wireless network, a drone flight command, and control center, and video analysis applications. Private LTE/4G provides seamless and secure connectivity, making it more suitable for mission-critical use cases than the mostly Wi-Fi-based technology used currently in public mobile networks.

The high-performance, low-latency connection provides optimized coverage for the drones, ensuring sufficient capacity for video streaming across wide areas and enabling secure information processing. These drones can also be flown over populated areas with limited risk and with better control in difficult weather conditions, which make them ideal for disaster recovery areas. By using speakers, HD cameras, and thermal cameras mounted on Nokia drones, the testers were able to deliver recorded and real-time voice messages. They also conducted aerial monitoring using HD and thermal camera video streaming straight from the drones.



During the simulated disaster, the testers issued a major tsunami warning to evacuees in coastal areas through the drone speaker; and they also were able to monitor the tsunami arrival zone and coastal areas through drone camera images. According to Nokia, the testers also guided people to evacuation sites using the drone to convey directions; they monitored the movements of evacuees using the drone camera. The test also highlighted how first responders can facilitate disaster prevention and mitigation without risk to the personnel managing the evacuation activities.

After the tests, Sendai Mayor Kazuko Kohri said that “the use of these drones seems to be very effective in ensuring the safety and security of Sendai and its surrounding areas. The demonstration by Nokia showed that we should be able to respond faster and provide better information to the people in the most affected areas during a potential disaster. We are very hopeful that Nokia Drone Networks will help us to reduce risk for our citizens.”

According to Nokia, the Nokia Drone Networks solution isn't for safety and security only but also construction, fire monitoring, smart cities, and transportation. The company is committed to working with cities, first responders and other health and safety agencies in their quest for a safer, more livable and secure community.

Feminism through the Ages

- CV Ananya

Feminism has become one of the most debated topics in the world. It has as many interpretations as there are people, because to a large degree your understanding of it is influenced by your personal experiences. But widely the doctrine of feminism can be divided into more or less two sects; the feminists, and the feminazis. The feminists are the people demanding equality, and the equity to create that equality. Whereas the feminazis are something of a cult, bent on proving the superiority of the female sex. But all this falls in the current scenario. What kept nagging at the back of my mind was, why? Why did women get oppressed at all? How did it all begin? Consider the implications. A global mental conditioning of male superiority over multiple centuries is about as close to an absolute brainwash as we can get. What could have even started it?

If you compare men and women sans their stereotyped gender roles, there can be no consistent bifurcation of tasks. There is no denying that men have the biological upper hand in terms of brute strength and agility, which makes them automatically better suited to roles requiring physical labour. And this may be the exact reason that led to the most initial division of labour. Maria Mies, author of *Patriarchy and Accumulation on a World Scale*, has explained this situation from an anthropological point of view. According to her theory, it was man's role as hunter which gave him experience in weapons of aggression and capture. Even in nomadic tribes, men were involved with breeding and herding of animals, whereas women were relegated to the relatively inferior task of gathering due to their other commitments like nursing babies. This simple convenience-based demarcation is probably what led to the insurmountable divide we see today.

Now we need to tackle why this divide is bad. Keeping aside all the hyperboles and the exaggeration, the basic point is that we women find ourselves having certain aspects of our life set in concrete without being given an opinion in the matter. And I think that restriction is what we desire freedom from, on a fundamental level. For example, in a typical Indian setting, marriage and childbirth is still supposed to be the zenith of a woman's personal life. A lot of people may say things have changed in the past few decades, but the all-pervading fact we fail to notice is where these changes are happening. The majority of the gender gap has been bridged, maybe, but in metropolitan cities only. Most of the world's population still lives in suburban or rural areas. Besides there are some simple questions that prove that even if change has happened, it is certainly not enough. Why do most of the world's governments still have a glaring lack of female ministers? Why is it that even developed countries like the US have never had a female president till date? Why is there still an 18% overall paygap in the world? Why are male led companies more likely to get funded than female led companies? Why are the number of students still more male than female? Why do so many women still stop working after marriage? There is no end to these questions.

I would give a word of caution to the wise here. While it is true that efforts have been initiated to right the scales, we need to pay more attention to where and how we are channelling these efforts. It is still difficult for a woman in a rural area to access even basic education, whereas women in urban areas are occasionally even found to misuse the liberties provided to them in the name of equality. On our current trajectory, we will end up creating a world where metropolitan areas have a female dominated environment whereas the rural areas still remain abysmally patriarchal. We need to focus on a shift in mindset, a transition to accepting equality as a necessity, not a liberty or an option. Only then will we see wholesome betterment and empowerment of women.

Linux: The future of desktop computing

-Tarun Chhabriya



In this Glorious operating system wars that have spanned decades, Microsoft Windows quickly became the undefeated king of the operating systems in terms of the market share ever since its launch in 1985. Currently, Windows 10 the latest version of windows has the market share of 51.57% in the PC space but with all of that said if something is popular doesn't mean that it's good. From the past few years, we have seen time and again that windows might not be the safest option for the operating system. From windows update messing up the whole system and deleting user's personal data to Microsoft's mistreatment of the data they collect from their user's system, it is very apparent that the windows are no longer the best option for your next operating system. But there is hope for all of us who want to have the best computing experience, who want to have total control over their system which is simply not possible in windows and doesn't want to deal with all the problems that plague windows. The name of that hope is Linux which is the future of desktop computing.

Firstly, for those of you who don't know what is Linux? Linux or more accurately GNU/Linux is a free and open-source operating system which means that you have full access to source code that you can change, install and redistribute without any need of owning the license to the OS and it is all free of cost. If you want to install Linux on your desktop you can just choose any version of Linux which are commonly known as distros, download the ISO file and just install it on your computer with no need to purchase the licence and after installing modifying that system to your exact needs. Aside from the personal computers, every other device like your android phone, various IoT devices, even supercomputers and servers that basically runs the entire internet runs on some version of Linux. But for a general user who is not that technologically literate and just wants to use the computer for common tasks like web browsing, editing word documents and gaming, all of that doesn't matter. So, for them here are some points that answer the question, Why you should choose Linux.

- **Security:-** The biggest selling point of Linux is that it is the most secure operating system on the planet. Unlike Windows, Linux is secured from all the viruses, ransomware and malware that might attack your system and render it unusable. If you are on Linux chances are you will never get affected by any of those things that are mentioned above ever in your life.
- **Freedom:-** Freedom is the core philosophy of Linux. The freedom to run the program, for any purpose, The freedom to study how the program works, and change it to make it do what you wish, The freedom to modifying Linux to meet your specific needs, The freedom to distribute copies of your modified versions to others. This is the main reason why I love Linux so much even though for the majority of my life I have been using windows and made the switch to Linux just in 2018. The operating system doesn't get in your way when you are making any changes that you want to make your system look and feel just the way you want and I love it.
- **Privacy:-** Privacy has become one of the biggest topics of discussion because of all news surrounding these companies trying to sell it's user data so that they can make money out of the targeted ads which are served to a specific user based on its online activity. Linux, on the other hand, has made quite a name for itself for respecting its user's privacy by not collecting any personal data of the user.

- **Reliability:-** Linux is notoriously reliable and secure. It has a strong focus on process management, system security, and uptime. Users usually experience fewer issues in Linux. Although Microsoft Windows has made great improvements in reliability in recent years, it's considered less reliable than Linux. Some Linux distros are also lightweight and use fewer system resources which makes excellent for running on older hardware who struggles to run windows.
- **Community:-** Due to its open-source nature Linux has built up a big and passionate community which is an integral part of any Linux distro. This community decides what features to add, discovers various bugs in the systems and fix then, they also help a newcomer to learn various things about Linux and there are various forum threads and articles made by the people of the community for fixes of any problem one might encounter in their system. It is one of the most helpful bunch of people who will guide you through your Linux journey.

Now, just like everything on this god's green earth, Linux is also not perfect. So, there are a few things that you should keep in mind before switching to Linux. One of the biggest difficulties that I faced when I switched to Linux was the learning curve mainly because by definition Linux is different from Windows and as a lifelong user, it took me a while to adjust to the new computing. To learn the ins and outs of Linux the biggest help for me was community forums like askubuntu, Archwiki and youtube channels like Chirs Titus Tech and The Linux Gamer just to name a few. Also, there are various beginner-friendly Linux distros out there which you can install like Pop_OS, Ubuntu and Linux mint. Another thing that I had to come to terms with was that some Windows software like Microsoft Office, various Adobe products are not available on Linux but for that, there is alternate software which works just as good as any of the software on Windows for example, instead of Microsoft office you can use Libre-Office suite. Even though Linux gaming is a big thing now it is not there yet. You can run most of the single-player Windows games on Linux but for multiplayer games, the situation is a bit tricky, some multiplayer like CS: GO works out of the box because there is a native Linux port available but for the others games, some might work and some might not. So, In the end, as obvious as it might sound it really depends on your personal needs to know whether Linux is for you or not.

In conclusion, it might seem daunting to switch to a totally new computing environment that you know nothing about but if you want an unrestricted and safe desktop experience and you don't mind the learning curve a platform like Linux is worth switching to as your permanent operating system and join us towards the future of desktop computing.

When Australia Was Burning...

-Aishwarya Sahoo

Australia faced a devastating start to its fire season in late 2019, and things swiftly got worse before rains helped contain many of the worst fires in February 2020. Dozens of fires erupted in New South Wales, Australia, prompting the government to declare a state of emergency in November 2019. Fires rapidly spread across all states to become some of the most devastating on record. An area about the size of South Korea, roughly 25.5 million acres, has burned. At least 33 people are dead, including at least three volunteer firefighters, and more are missing. Around 3,000 homes have been destroyed or damaged. As blazes intensified in the days leading up to New Year's Eve, thousands of people who were forced to evacuate sought shelter on beaches across New South Wales and Victoria.

Summer extends from December to February in Australia, with fire season typically peaking in late January or early February. On January 3rd, officials warned that conditions would get worse over the following few days. "It's going to be a blast furnace," New South Wales Transport Minister Andrew Constance said to one of the national dailies. By January 10th, another round of massive evacuations began across the hardest-hit regions of the south-east due to dangerous winds fanning the flames.

The fires in New South Wales, the state most affected, were finally declared "contained" on February 13th. "After what's been a truly devastating fire season for both firefighters and residents who've suffered through so much this season ... We can really focus on helping people rebuild," New South Wales Rural Fire Service deputy commissioner Rob Rogers said in a video shared on Twitter. The relief came after torrential rains marked the wettest week in the region in three decades. The smoke became another disaster. On January 1st, Australia's capital recorded the worst pollution it's ever seen, with an air quality index 23 times higher than what's considered "hazardous." Smoke in the city crept into birthing rooms, stopped MRI machines from working, and triggered respiratory distress in one elderly woman who died soon after she stepped off a plane. Lives and homes had been lost. So many people have been dying and went missing. These bushfires turned out to be one of the most unimaginable catastrophes in history.

More than 1 billion mammals, birds, and reptiles likely lost their lives in the blazes, according to one estimate from the University of Sydney. Around 25,000 koalas were feared dead on Kangaroo Island. Eight thousand koalas, a third of all the koalas in New South Wales, are believed to have perished, and about 30 percent of the koalas' habitat has also been wiped out. The devastation only adds to existing pressures on Australia's unique ecosystems. The continent is home to 244 species that are not found anywhere else. The region also has the highest rate of native mammals becoming extinct over the past 200 years. The Department of Agriculture, Water and the Environment published a list on February 11th of the 113 animal species, including the platypus, that most urgently need help following the fires.


"The reality is, this is a function of climate change — this extreme heat, these extreme conditions that are so volatile and are producing the types of intensity and early season burning that we do not normally see in Australia," Kolden, an associate professor of fire science at the University of Idaho who studied wildfires in Tasmania in 2018, says. It is important to understand that our actions, in fact, are capable of burning the world. That something as small as the burning of coal is pushing us greater towards the inevitable apocalypse.

Let us pledge that we won't let humanity render this cruel so that another country doesn't burn like Australia, and that Australia heals through this catastrophe.



Lockdown-The thoughts of an Extrovert

-Aadi Fernandes



Humans are social animals, that's what people always say,
Quarantine or not, to communicate, we will always find a way.
But today I'm representing the thoughts of the extroverts around me,
Not everyone will relate, but the majority of them will agree, I guarantee.
As we look out of our windows and hope life comes back to what it was,
I cannot wait for the time I travel by the local train or bus.
I miss breathing the fresh air in the garden and sitting on the damp grass,
It was a delightful experience, full of serenity and solace.
As I smile in these countless number of video calls,
I honestly miss hanging out with them in malls.
“Let's go out!”, my mind says, with glistening eyes and a wide smile,
But it quickly fades away as I recall I can't move out for a while.
I miss the noise my classmates made and the chaos in the break,
How those beautiful times, for granted, we used to take.
This is just a warning that if we continue to take advantage of mother earth,
At the very end, we'll all perish and get to know our actual worth.

Assassin's Creed Odyssey: Game Review

-Ashutosh Matai

An idea - that all of our memories and experiences are stored into our genetic material and can be decoded to not just understand but re-experience them using a machine called Animus - gave birth to the popular game series now known as Assassin's Creed. Although the series started off as an idea for a sequel for Prince of Persia, Ubisoft's decision to serialize this idea into a separate franchise turned out to be a fabulous idea, the latest mainstream game in this over 12-year old franchise being Assassin's Creed Odyssey. Odyssey follows the story of the Greek protagonist, a mercenary, misthios as they are known. Players get to choose between two siblings - Kassandra and Alexios, as the protagonist. Set in the year 431 BC, the plot tells a fictional history of the Peloponnesian War between Athens and Sparta.

As with previous games in the series, Odyssey features a narrative set in the modern-day and follows Layla Hassan, who was introduced in Assassin's Creed Origins. In the present, Layla Hassan recovers the Spear of Leonidas and together with Victoria Bibeau, extracts the DNA of two individuals from it, the siblings Kassandra and Alexios. With help from the Assassins, Layla picks one of the siblings (the "Misthios") and activates the Animus to find the location of the Staff of Hermes. The Misthios started as a young Spartan child, raised by their parents Nikolaos and Myrrine, and inherited the Spear of Leonidas from Myrrine as one of Leonidas' descendants. However, one day, both the Misthios and their siblings are thrown off a mountain due to an oracle's prophecy, with the Misthios being dropped by Nikolaos himself. The misthios survived the fall and fled to the island of Kefalonia, where they grew up performing odd jobs until the Peloponnesian War began.

My personal choice as the protagonist was Kassandra, as the thought of an older female sibling fighting out the Peloponnesian War for the cause of reuniting her family seemed much too intriguing to let pass by. As Kassandra, I took a couple of hours in Kephallonia, the island where our main character starts at, before getting the hang of the game. Once I realized what objectives mattered and got used to the controls, I was able to quickly level up and earn my ship - the Adrestia and set out to explore the islands of Ancient Greece. I thought that as an open-world game, I'll get used to the topology of the surroundings pretty soon. Boy, could I have been any more wrong? The game makes perfect use of your onboard graphics by generating amazing flora and fauna that are unique to certain regions. The weather, the days and the nights, the sea voyages and horse rides, the conquest battles and cave explorations, the underwater dives and the rock climbing all make this game so fascinating that I can't seem to get my eyes off. I am, without a doubt, a fan!



Not only does this game eliminate the need for players to manually control the jump activity, but it also makes it easy for players to climb up on almost every surface there is. Add to that the rich and diverse architecture of Ancient Greece, brought back to life in an open-world, highly interactive game and you can't help but yearn to be alive in 431 BC again. With a vast array of skills, weaponry and armour to choose from, this game makes it easy for different types of players to be comfortable playing in their own play-styles.

And you know what doesn't suck? The story. Most open-world games tend to go overboard on the gameplay and graphics but overlook an enticing narrative, but Odyssey simply grasps you with a deep plot that dates back to 431 BC in the form of rivalry between Athens and Sparta (Chaos and Order) and brings it back to the present day power struggle between the Assassins and the Templars. And if you want to know the story revolving around the misthios, there's even a book based on the game, penned by Gordon Doherty.

Available across Windows, PlayStation4, Xbox One and Nintendo Switch, I highly recommend that you give it a shot!



Collective Chronicles of CoronaVirus

- Aishwarya Sahoo

THREE MONTHS AGO, everyone was nonchalant that the SARS-CoV-2 existed, we didn't care even when the working class population of our Asian Neighbour was suffering through it. But now when the virus has spread to almost every country, infecting at least 446,000 people whom we know about, and many more whom we do not. It has crashed economies and broken health-care systems, filled hospitals and emptied public spaces. It has separated people from their workplaces and their friends. It has disrupted modern society on a scale that most living people have never witnessed.

A global pandemic like this is inevitable. In recent years, hundreds of health experts have written books, white papers, and op-eds warning of the possibility. Corona virus has made it possible; the hypotheticals have become reality. "What if?" has become "Now what?"

The solution is something people have come with: self-isolation, getting quarantined. And maybe it's not that bad? A lot of us with bad decisions and messed-up lives might need some time to introspect our lives. This is the best time. But do you know who's benefiting the most out of this outbreak?

Our planet.

It's almost as if earth was choking because of the weight we had put it on, and now it can finally breathe. It can become clean. The water's no longer rushing through its veins and not lungs anymore. So even if you feel unproductive about your time at home, be happy, because you're most definitely saving one life. And it's a huge one — the one that matters.

There's also one thing that we need to remember whilst this experience: the collective trauma we all have been going through. Even when all of this is over, most of us are going to be agoraphobic and germaphobic and distant. We are going to be every adjective we never have been, never wanted to be. If you don't feel traumatized right now, but suddenly you're way more tired than usual, or your neck hurts, or you're really irritable, then you're probably going through at least a little bit of serious stress. Things like these stick around.

It's a scary way to imagine the future, with everyone walking around, traumatized and scared. But, there is hope. The trauma is necessarily going to go away. Anyone who has experienced trauma on a personal level knows that it never goes away. but there are ways to cope.

Doing a recap, during this outbreak, all of us are practicing social distancing, washing our hands, maintaining personal hygiene, staying at home (if possible). So we need to make sure that this practice is followed by people near us and our loved ones. Yes, everyone is going to have at least a little residual PTSD after this, and that's scary. But you can only control what you will do.

And if a lot of people do those things after this is over — yes, we'll still be scarred. That's how injury works. but, it doesn't have to be hopeless. Maybe this is extremely naive and disgustingly idealistic, but if you take care of yourself first, and then those you love, then I believe that it can build into something bigger than any one person can see. Be kind to yourself and people around you.

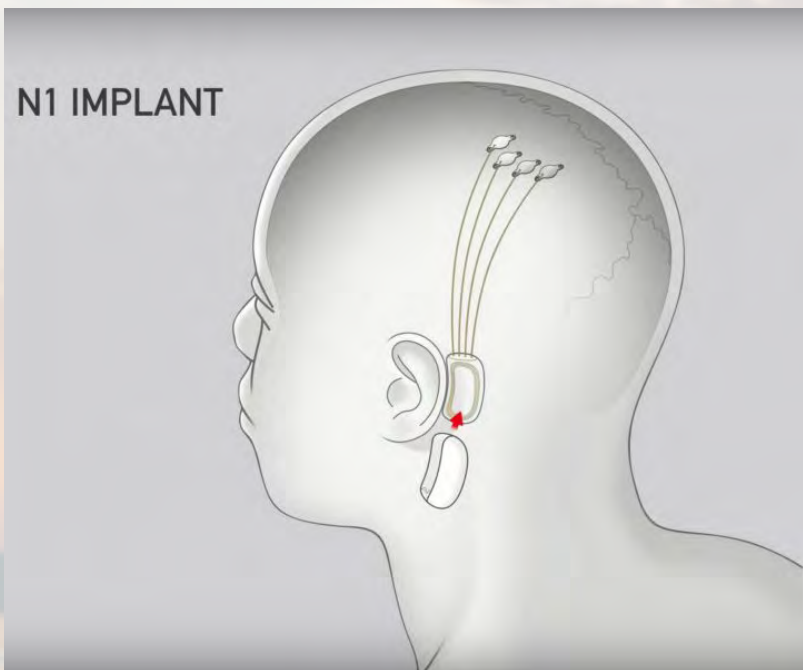
I believe that we will be hurt more than we expect, but I also believe that we will heal more than we think. I believe that this pandemic will bring us closer together.

The next step in Brain Mapping, AI and Biotech

-Maitraiya Dandekar



Neuralink Corporation is an American neurotechnology company founded by Elon Musk and others, developing implantable brain-machine interfaces (BMIs). Tesla and SpaceX in both the boldness of its engineering undertaking and the grandeur of its mission. The two companies aim to redefine what future humans will do—Neuralink wants to redefine what future humans will be. The mind-bending humongousness of Neuralink's mission, combined with the labyrinth of impossible complexity that is the human brain, makes this the most exhilarating and exciting human venture yet.



Neuralink's initial goal is to help people deal with brain and spinal cord injuries or congenital defects. The technology could help paraplegics who have lost the ability to move or sense because of spinal cord injury. Although neural control of robotic limbs has been around since 2012, Neuralink's technology could enable the next big step - touch feedback, sometimes called haptic feedback. Theoretically, this could be possible if Neuralink's chips recorded which areas of the brain are stimulated when we touch and interact with the world, and then the electrodes could use this information to stimulate the brains of people using robotic prostheses to simulate this sensation.

But the long-term goal is to build a "digital superintelligence layer" to link humans with artificial intelligence, a technology he views as an

existential threat to humanity." Ultimately, we can do a full brain-machine interface where we can achieve a sort of symbiosis with AI," Musk said. It has developed a system to feed thousands of electrical probes into a brain and hopes to start testing the technology on humans in 2020.

Neuralink has the potential to dramatically reshape both computing and humanity -- if it and like-minded researchers can persuade regulators and society at large that we should be directly wired to machines. That's a big if. The challenges are immense when it comes to developing the technology, making it practical and affordable, and convincing people it's safe and desirable. The company's first goals are dauntingly ambitious, and training the brain to understand the Neuralink signals won't be easy, either, said Max Hodak, Neuralink's president and co-founder. "It's a long process. It's like learning to touch-type or play piano," he said.

The first big advance is flexible "threads," which are less likely to damage the brain than the materials currently used in brain-machine interfaces. These threads also create the possibility of transferring a higher volume of data. With Neuralink's approach, a robot inserts tiny threads a quarter the width of a human hair. The threads are about the same size as a neuron. A wisp of 1,024 threads attached to a small chip, up to 10 of which will be embedded under your skin. Each will connect wirelessly to a wearable, detachable, upgradable pod behind



your ear that communicates wirelessly with a phone. The interface to the chip is wireless so you have no wires poking out of your head. It basically Bluetooths to your phone. The installation takes place through holes 2mm wide, temporarily expanded to 8mm, then glued shut. In the future, scientists from Neuralink hope to use a laser beam to get through the skull, rather than drilling holes. Among the company's challenges are developing electrodes that will last many decades but getting the right coatings is a tough materials science problem. The human brain is not a hospitable environment.

Neuralink is designing its electrodes not just to read from neurons what's going on in the brain, but also to write signals into the brain. One can take in information much more quickly than you push it out via your voice or your thumbs. Thus, Musk's goal is for this system to allow humans to more quickly communicate with machines directly from their brains. "You can use this technology

in the brain to restore a sense of touch or vision," said Neuralink scientist Philip Sabes. Ultimately, if and when technology for spinal cord nerve or muscle stimulation gets far enough, it could be used to restore that individual's control over their own body. Neuralink hopes its procedure will be safe and easy enough that people will choose to undergo it.

Unravelling Social Media's Darkest Secrets!

-Somesh Sidhwani

As we have evolved from a world of primitive human beings to the one where everything is available on demand and a single click away, a lot has changed on the backstage. As means to provide easy global communication and of course as a source of entertainment, social media emerged to be the next revolutionary giant. Soon after the internet became a cheap commodity, almost the entire generation of millennials were hooked onto social media indefinitely. And that is where it all began.

There are innumerable and countless benefits and opportunities that this revolutionary concept beholds. But at what cost? Is social media a boon or a bane? Bringing into spotlight the current generation, or as they like to call themselves, 'Millennials', it is definitely more bane than boon. Simon Sinek rightly puts how millennials are hinged to *instant gratification* due to their various activities and services they exercise through social media. Gratification is just one second away, may it be a 'like' on your Instagram post, a 'friend request' on Facebook, a supporting 'comment' on your plethora of unexercised opinions or a 'right swipe' on Tinder. Due to this instant gratification, the generation has lost the importance and art of patience. Everything is to be served on a platter and cooked in no time. That is not how things work when these very millennials enter their professional or work life. Things take time, effort, dedication and patience. But are they prepared? Not at all. They are addicted to this bubble of easily achieved happiness served on a platter.

Considering the effects of social media on consumers, it might as well be called 'digital heroin'. Consumers experience gratification on every nook and corner whilst their involvement with the social media. Something as small as a hit or like on their post is a small burst of dopamine in their systems. This is similar to lighting a smoke, having a glass of alcohol or engaging with marijuana to externally stimulate dopamine in our bodies. Irrevocably, we get addicted to this activity as it makes us feel happy. Until we finally realize we are addicted to it. Or do we?



There is a constant reminder of this 'digital heroin' existing in our lives as this world revolves around pop-ups and notifications on your phone. And how long can one stay without attending that pop-up? Not much? Well that was the point. You are drawn to using this drug again and again majorly because - One, everyone else is doing it. Second, it is fun and provides a sense of happiness. Once addicted to this drug, refraining to use it would lead to the similar process as any other drug stoppage would. Withdrawal.

In fact, not only does using social media bring gratification, it festers self-doubt. The approval of your one thousand followers is more important than the approval of your close friends and family. And when you do not receive that like, hit, comment on your post, you tend to go towards the exact opposite of gratification. You feel low. The term used by almost the entire generation on a daily basis. And it isn't for no reason. It's right there in front of our eyes. Depression, anxiety,

self-doubt, low self-esteem are all the traits prevailing in generations hinged on social media. You constantly need the drug to keep you happy. Unfortunately, you do not control the drugs' effects. A comment may be in your favour or it equally may not be. You may get a like, or you may certainly not. But we've already given so much control and authority to this drug, that we are bound to react to every single thought it induces in our heads.

As a result, the youth is not coming out as excited and driven towards life as they should be. They are not motivated, and hence have found bliss in mediocrity. Everyone is working like cogs in the machine with no hopes to ever control the entire machine. This is a direct result of them focusing their thoughts on an alternative concept of life. Corporations face difficulty in getting these young-old souls motivated again when they enter their work life.

What is the solution? Firstly, we have to give up the notion that social media is *important*. It does not add value to our lives, we add values to it. It is just a source of entertainment and a means to communicate. We should not give it control over us. Notifications, pop-ups, comments, likes, requests are to be attended to, not when they show up, but when you deem it necessary. Destroy the concept of an alternative life that makes you look good in front of people who won't matter when you struggle for your daily wages. Rather, focus on the life that does not need approval online. Hardly 10 % of what people portray on their digital profiles is like what it is in real life.

It's your choice, do you want to build your character in reel life, or real life?



5 of the Most Important Stages in the Content Marketing Process

In 1996, Bill Gates stated - “*Content is King.*”

It’s 2020 now, and no wonder this phrase makes so much more sense.

Content provides a medium for you to connect with your audience. Content marketing lets you channel this content to drive a profitable customer action.

How effective is content marketing?

70 percent of the marketers have used content marketing to generate new leads over the past year. Furthermore, 63 percent of them were able to build a loyal audience and retain existing clients. This goes to show how powerful content marketing really is.

Goals B2B Marketers Have Achieved by Using Content Marketing Successfully in Last 12 Months

	All Respondents	As Reported One Year Ago*
Create brand awareness	86%	81%
Educate audience(s)	79%	73%
Build credibility/trust	75%	68%
Generate demand/leads	70%	68%
Nurture subscribers/audiences/leads	68%	58%
Build loyalty with existing clients/customers	63%	54%
Drive attendance to one or more in-person events	52%	49%
Generate sales/revenue	53%	45%
Build a subscribed audience	45%	43%
Support the launch of a new product	45%	40%
None of the above	0%	1%

Do you have a content marketing strategy for your brand?

If not, it is about time you get one. Here are the 5 most important stages in the content marketing process you must nail to achieve your end-goals.

Stage 1: Plan the Process

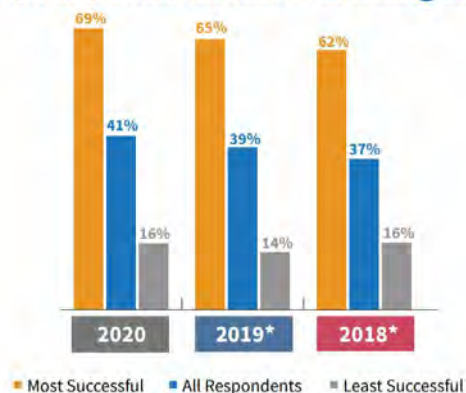
Plan your content marketing process. This includes creating, publishing, distributing, and tracking your brand’s content. Conduct in-depth research and understand the needs of potential clients. Map the findings to an executable model.

A good piece of documented strategy is a key indicator of the success of your content marketing process. It includes the specifications of:

Content titles

Contributors

Percentage of B2B Marketers With a Documented Content Marketing Strategy



Content forms

Publication dates

A dedicated calendar can further help in keeping tasks organized to stay on top of things.

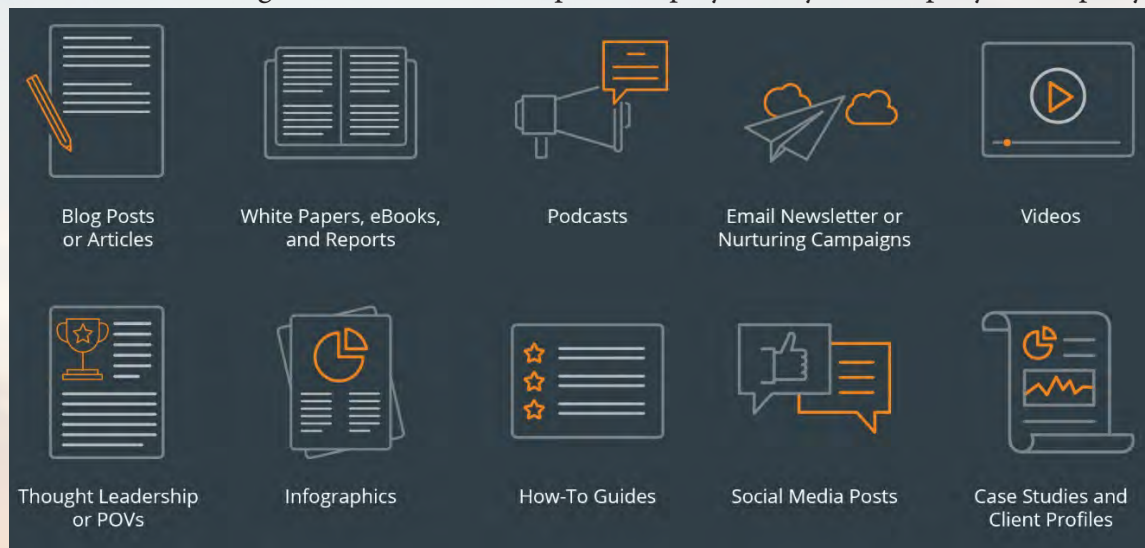
Step 2: Create Engaging Content

The entire process of content marketing is to market the content.

So it goes without saying that the content you create must be highly engaging to attract clients.

However, as a marketer, your aim must not limit to only marketing the content. Finding an efficient way to create high-quality content as per your requirements is equally essential.

Decentralize the task of creating content over to the capable employees in your company. Third party experts and



freelancers can also prove to be effective sources of content creation. As per your needs, choose an asset that best suits your content marketing strategy.

Step 3: Publish it

Publishing turns your content into an asset, and you can leverage it across many platforms.

You can create many assets like blog posts, videos, articles, or presentations based on a single core content. Most marketers today opt for this “create once, publish many” approach. This approach allows them to leverage a piece of good content in many impactful ways.

Publish your content on the platforms documented in your strategy. Refer to the content calendar to stay aligned with the deadlines.

Step 4: Distribute your Content

Once the content is published, get busy distributing it. Marketers generally apply multiple distribution tactics to a single piece of published content. These tactics can be paid as well as free.

Here are a few examples :

Search Engine Optimization (SEO)

Paid Search

Social Sharing

Word of Mouth

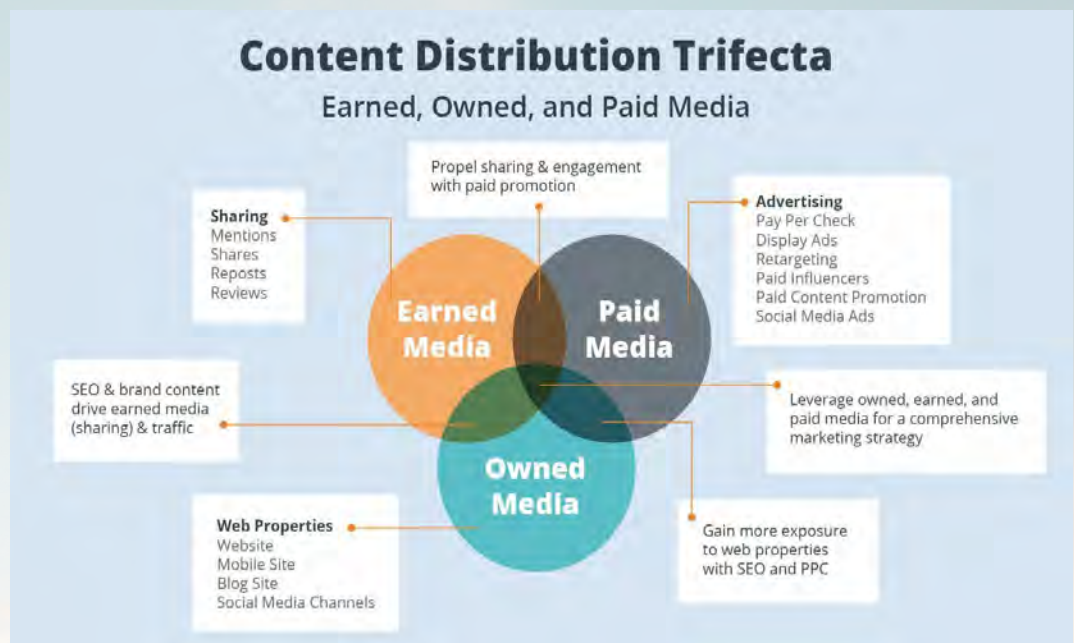
Advertising

Email Marketing

Alternatively, you can also set your content free and see where it lands your brand.

Who knows?

It may even go viral.



Step 5: Track the Results

Tracking the results of your content marketing process is essential. Content marketing analysis can illuminate you on how your content is faring out there.

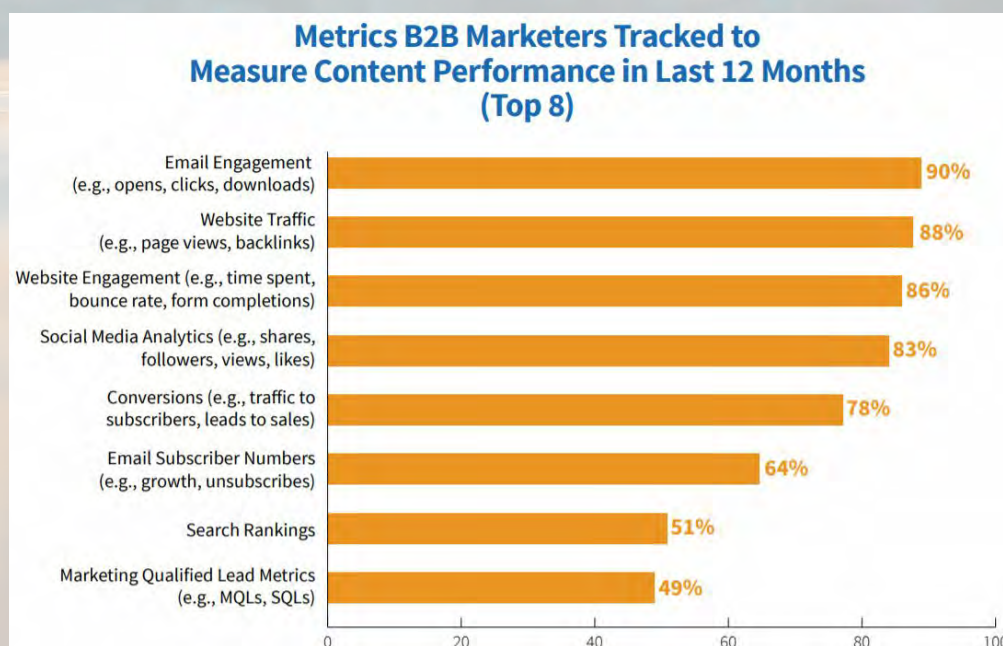
Search engine referrals, lead conversion rates, and social activity are a few examples of the metrics which are analysed.

Understand what the data is trying to tell you. The results can help you to recognize the customer's preferences.

What do they like about you as compared to your competitors?

What compels them to choose you over the rest?

These insights will act as stepping stones for a better content marketing strategy for your brand in the future.



A Stranger

-Priyanka Awatramani

I sat there staring at the sky.
The moon was sparkling bright,
Yet the night was dark.
I was the happiest I had ever been.
Just then, a stranger came by.

I found myself encompassed within a circle of positivity.
Something about him made me so comfortable.
As he sat down gently beside me,
I felt peace deep inside my heart.

Wondering why I felt so, being so beatific before
It was as though he fixed my missing pieces,
Without me even knowing when they were lost.

Looking into his eyes, I felt as if all my dreams had come true.
When he talked, it was like he had opened some closed doors of my soul.
And when he held my hand, it felt like he would never leave it.

I had never felt like this before,
The night now seemed brighter,
And I knew I had fallen for him forever.

Competing in Space ???

-Varun Anand

The human tendency to constantly explore new habitats, surroundings is intriguing and also a part of our DNA. The belief to innovate, explore is a virtue so deeply embedded inside us, it is virtually impossible to diminish it. With Planet Earth being explored and conquered to its last nook and corner, exploring the nature that lies beyond our atmosphere became an interesting venture.

Ancient travellers and explorers have used stars and constellation signs as guides for figuring out directions. Although initial large scale developments towards space research gained sustainable momentum post WW2 in the latter half of 1950's as technological and scientific advancements made it possible, feasible and economical to contribute towards space development.

Space research initially had only a single motive of exploring and finding out what lies beyond the known limits of our atmosphere. But with cutting-edge developments made and cut-throat competition the original motive seems long forgotten. Today all the useful necessities like Internet, Network, Communication etc seems impossible without Satellites. This is the impact that space research has had on mankind in the last 30 years. Today we know for a fact, every detail, about all the planets in our solar system. This was unthinkable about 50 years ago.

With our Mother Earth being brutally subjected to harsher conditions, many space companies have been founded on the motive of colonizing planets in and around our solar system which resemble Earth in geographical characteristics. This has led to the origin of a completely new Business sector. Companies like SpaceX, Blue Origin etc are pushing the limits of technology and astrophysics to colonize planets. Many listed companies as a matter of fact are offering land on Moon and Mars. SpaceX has been the flagbearer in this domain with trying to make space travelling more cost friendly. In 2018, CEO Elon Musk unveiled an updated configuration of the system, named Starship, which is planned to be fully reusable and will be the largest rocket ever on its debut, scheduled for the early 2020s.

Many notable scientists have developed their entire life in exploring the unheard. German physicist Karl Schwarzschild was the first to lay the foundation of the science describing black holes in 1916. Nearly a century later in 2019, American organization NASA captured the first image of the black hole which lies to the end of our solar system. With the ISS, the problem of regular satellite launching is reduced. One of the main risks we face is extinction due to some asteroids crashing into Earth. Over the years many such asteroids and meteors have gone past earth or have been diverted. Asteroid (52768) 1998 OR2 will make a close approach to Earth on April 29. The hefty space rock has an estimated diameter of 1.1 to 2.5 miles (1.8 to 4.1 kilometers), or about the width of the isle of Manhattan. The prediction of these can be done.

In July, NASA discovered a new planet with strikingly similar features to our own. It was dubbed, rather unimaginatively, Earth 2.0, and its discovery sent everyone's imaginations wild. Kepler-452b, as the planet has been labelled by the agency, is in a solar system very similar to our own and is the right distance from its star to potentially be habitable. The planet is 6bn years old, 60pc larger than Earth and receives 10pc more energy from its star, which is 1.5bn years older and 20pc brighter than our sun, though has the same temperature.

While space exploration has risen exponentially over the years, researchers and environmentalists claim that the increase in the number of satellites being launched is causing space traffic which may amount to a greater problem over the years. With the rapid development happening in space development it is essential for the global space agencies to monitor this development. The space calendar for the next few years seems jam packed as all agencies want to optimize the planetary positions.

The Magnetic Future of Computing

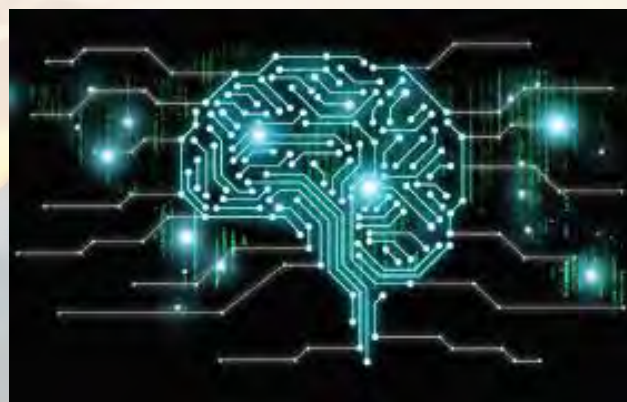
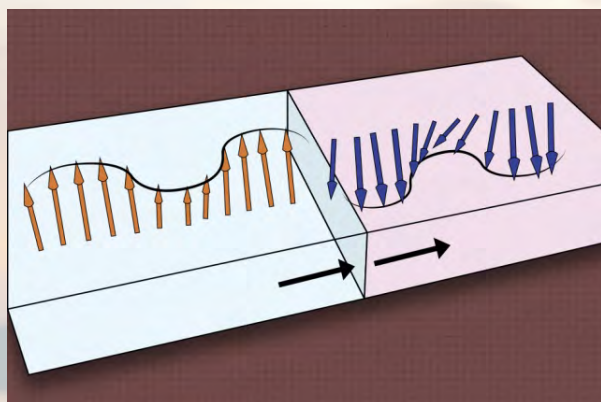
-Maitraiya Dandekar

Electromagnetic waves are created as a result of vibrations between an electric field and a magnetic field. That is they are composed of oscillating magnetic and electric fields.

Currently computers require a lot of electricity to compute information and store all the data they collect. They also radiate a lot of heat. To tackle this, a popular upcoming alternative among researchers is, using magnetic spin waves instead of electricity.

Over the years researchers have created magnetic-based spintronic devices that neither require much electricity nor generate heat. Spintronic devices work by tweaking the spin-wave properties so that they produce something that can be measured and correlated to computation. Spin waves, which are bursts of energy with small wavelengths, throw off chunks that are called magnons. Magnons aren't particles like electrons, but they can be measured for computing. In order to modulate the spin-wave, researchers are required to inject electrical currents. But doing that requires extra components and causes signal noise, cancelling out any performance gains.

Massachusetts Institute of Technology (MIT) researchers have developed a circuit design that enables control of computing using magnetic waves, rather than electricity. The magnetic system uses the spin properties of an electron, whose rotation contains a certain amount of energy. This forms the basis of quantum computing. And by leveraging this technology, electricity consumption can be drastically brought down to nil. This development is a step towards magnetic-based devices which have the potential to compute much more efficiently than electronics.



The researchers have developed a circuit architecture that uses a nanometer-wide domain wall in layered nano-films of magnetic material (cobalt/nickel) to modulate a passing spin wave (a quantum property of electrons) without any added components or electrical current. This allows the spin wave to be tuned to the location of the domain wall as needed. After doing so, constant spin waves were excited on one side of the circuit. As the spin waves (magnons) passed through the domain wall, they immediately began to spin in the opposite direction. So, in the first region, the magnons spin north, while in the second region (after passing through the wall), they spin south. This leads to a dramatic shift in the wave's phase (angle) and slight decrease in magnitude (power).

The whole circuit could be understood like a water pipe. The valve (domain wall) controls how the water (spin wave) flows through the pipe (material). But you can also imagine making water pressure so high that it breaks the valve off and pushes it downstream. If we apply a strong enough spin wave, we can move the position of the domain wall — except that it moves slightly upstream, not downstream.

In the future, pairs of spin waves could be fed into the circuit through dual channels, modulated for different properties, and combined to generate some measurable quantum interference — similar to how photon wave interference is used for quantum computing. Such interference-based spintronic devices like quantum computers, could compute complex tasks that conventional computers struggle with.

What was their Fault ??

-Shiv Kaul

Once Mahatma Gandhi said “Silence becomes cowardice when occasion demands speaking out the whole truth and acting accordingly.”

On December 11th, 2019 Citizenship (Amendment) Act was passed by the parliament of India which was basically an Amendment to the Citizenship Act of 1955. This Amendment paved a way to obtain Indian citizenship for illegal migrants of Hindu, Sikh, Buddhist, Jain, Parsi, and Christian religious minorities, who had fled persecution from Pakistan, Bangladesh and Afghanistan before December 2014. Muslims from those countries were not given such eligibility. The act was the first time religion had ever been used as a criterion for citizenship under Indian law.

This amendment caused a nation wide criticism which was soon followed by protests. The protestors criticised this Act being of discriminating nature on the basis of religion particularly for excluding Muslims. The protestors also fear that this will be used along with the National Register of Citizen to eliminate Muslims by making them stateless, as they might not be able to meet stringent birth or identity proof requirements. On questioning the government, they say that Pakistan, Afghanistan and Bangladesh have Islam as their state religion and therefore Muslims are “unlikely to face religious persecution”.

This legislation caused large scale protests in India. Major protests against the act were held at universities in India. The two major incidents that jolted the nation by the uncontrolled law and order situation and the police brutality which caused the deaths of many, injuries to protesters and police personnel, damage to public and private property, the detention of hundreds of people and suspensions of local internet mobile connectivity.



Jamia Millia Islamia Attack

The university of JMI became a center of the protest as the Act was passed. On 13th December 2019, Students of JMI University undertook a march to the parliament protesting against the CAA which was eventually stalled by the police using batons and tear gas to disperse the protestors but this led to clashes with them. Fifty students were detained by the police after the clash. While the police claimed the protestors were prevented from carrying forward their march so they attacked the policemen with stones, after which the police used tear gas shells.

On 15th December, Delhi police attacked students of JMI, at 6:46 pm hundreds of police officers during confrontations entered the campus of Jamia without the permission of college authority. The police used batons and tear

gas on the protesting students and later entered the main library of the campus. Students in the library scrambled over desks and smashed windows in order to escape. The police however refused these claims but on 15th February 2020, Jamia Coordination committee released CCTV footage which confirmed that police and paramilitary did indeed enter the library and randomly beat up students who can be seen sitting and reading on their respective seats. After this incident the university was closed until 5 January and the residents were asked to leave the campus.



JNU Attack

What Happened in Jawaharlal Nehru University was more of a law and order situation.

On 5 January, at around 7:00 p.m., a masked mob consisting of dozens of people and at least one woman armed with iron rods, sledgehammers, sticks, and bricks attacked the JNU Campus-Delhi, and injured the students and teachers, as well as vandalising its hostels. The assault lasted for three hours, as the mob moved from one hostel to another, attacking the people. They chanted slogans calling the victims “Naxalites” and “anti-national”. Attackers shouted “Jai Shri Ram”.

This attack on JNU campus was different and never seen before. In one of the videos, the police were seen on the ground but did nothing to prevent this situation. The mob freely roamed from one hostel to another, vandalizing cars as well as some hostel rooms in the Mahi Mandavi, Sabarmati and Periyar hostels. Unlike in the jamia incident, the police didn’t intervene until it was too late. Police said they received 50 SOS calls between 4:00 and 5:00 p.m., however, they were only given written permission to enter the campus at 7:45 p.m.

The saddest part being that in both cases no significant action, from the police, has been taken yet. In the Jamia attack, till date no FIR has been filed and in the JNU attack case, the FIR has been ironically filed against the injured student leader, while the mob which attacked, is still at large and absconding. These horrifying attacks simply demean the fabric of our constitution and the rights provided by it.

PASSENGERS

-Rahul Tejawani

I spend so much time commuting,

On the train.

Watching people.

Watching the pain and the desperation.

Watching the frustration

and the numbness.

Watching the need to continue.

Watching the silent strength

of not giving up.

Watching the courage persisting

One day at a time.

I spend so much time watching

People on the train.

Learning life.

Twitter Sentiment Analysis

-Aditya Srivastava

Lets begin with, What is Sentiment Analysis, the process of computationally identifying and categorizing opinions expressed in a piece of text, especially in order to determine whether the writer's attitude towards a particular topic, person or a product is positive, negative, or neutral. We humans analyse sentiments of our fellow humans all the time. Social media posts are a good way to know what people think about a particular topic and Twitter is one of the best one out there.

I made my Twitter Sentiment Analysis model in the 2nd Semester (no not from scratch) using the Tweepy library of python. Tweepy is used to integrate the official twitter api to our code. So as usual we open our terminal and begin with a pip install. Steps to be followed are get a twitter API and download Tweepy to access the twitter api through python and then write our code.

We make a GET request which is authorized with the help of unique auth-token and other API keys. Then we parse the tweets and get the sentiments. For getting the sentiments I used a textblob. It is a NLTK library which is trained on Movie-review data set where the reviews are marked positive, negative, neutral (as far as I remember). "api.search" of tweepy and "clean_tweet" of textblob make our work easier by getting the data and finding the sentiments.

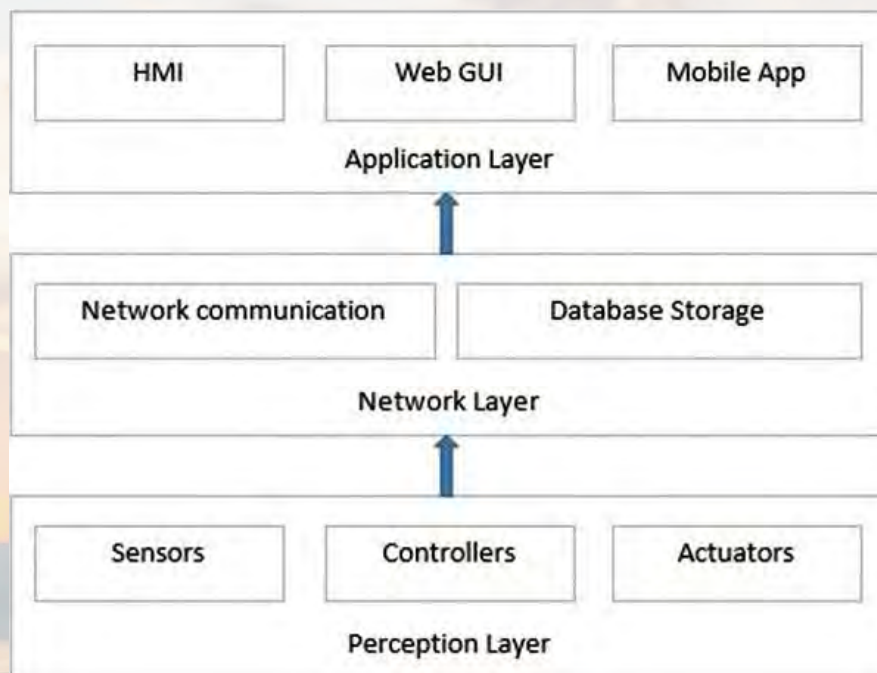
Okay so, why do we need sentiment analysis? Main reason is customer experience. All companies want to provide better services to their users and hence they want to know what the user is actually thinking about the product (at least at a binary level). Prediction of whether a loan defaults or not, result of ROI on marketing campaigns, etc can also be found out using Sentiment Analysis.

IoT in the Power Sector

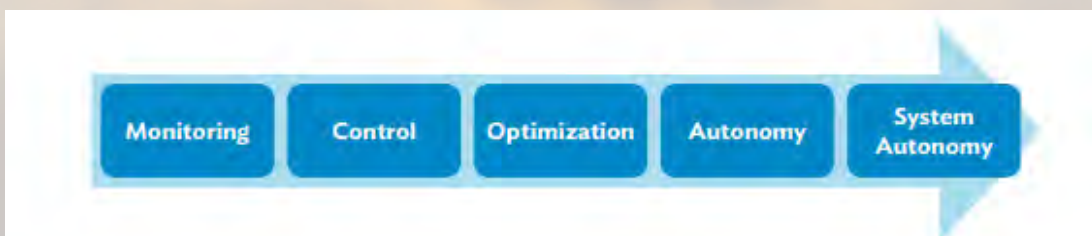
-Rahul Tejwani

An IoT is a network that connects uniquely identifiable ‘Things’ to the Internet. The ‘Things’ have sensing/actuation and potential programmability capabilities. Through the exploitation of unique identification and sensing, information about the ‘Thing’ can be collected and the state of the ‘Thing’ can be changed from anywhere, anytime, by anything.

With the advent of technology, there is a prodigious spread in the utilization of Internet of Things (IoT) in sundry segments such as energy, cities, logistics, homes, industries, health, and agriculture. According to a case study, there will be 26 billion contrivances utilizing this technology by the terminus of 2020. IoT is a technology that involves connecting physical things to the Internet thus, enabling them to communicate and transfer data over the Internet. The Existence of IoT has made the grid more keenly intelligent, reliable, efficient and robust. Several architectures are available for IoT implementation in smart grid (SG). A fundamental three layered architecture is shown in figure below.



Supervisory control and data acquisition systems gained popularity in the power sector in the 1990s as designates to automate industrial processes. It was an early version of the IoT. Its functions included supervision of the operation of programmable logic controllers (PLCs) by accumulating data about the underlying process, analyzing the data, and sending commands to control the processes. Smart meters are another early example of IoT, with its faculty to distribute near real-time consumption data and connect and/or disconnect customers, both without visiting the customer location. In the continuum of IoT maturity, both solutions do monitor and control. Often, operational technology like SCADA and keenly intellective meters have to be complemented with information and communication technology (ICT) like geographic information systems (GIS) and enterprise resource orchestrating (ERP) systems for an IoT solution to move up to a higher caliber of maturity.

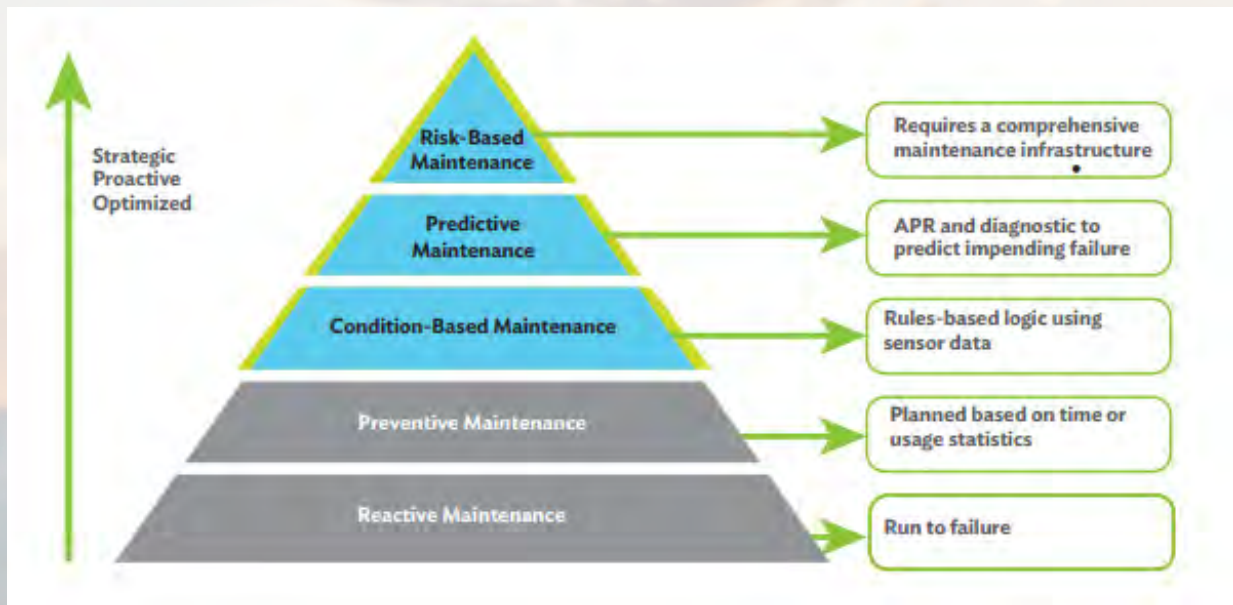


The internet of things commences from monitoring and then control of equipment and processes. Next is optimization, followed by equipment running autonomously adjusting to environmental conditions. Conclusively, system autonomy is communicating with other things to optimize performance. IoT has enabled a transformation in which much more than supervision and control of the process associated with generation and delivery of power is accomplished. Consider the following three applications:

- **Increase the efficiency and reliability of assets.**
- **Enable consumers to be energy-efficient.**
- **Grid optimization with large penetration of renewables and storage.**

Increase the efficiency and reliability of assets:

Affixing IoT sensors to generation, transmission and distribution equipment can enable energy companies to monitor it remotely. These sensors measure parameters such as vibration, temperature and wear to optimize maintenance schedules. This preventative maintenance approach can significantly ameliorate reliability by keeping equipment in optimal equipment and providing the opportunity to make repairs afore it fails.



APR (Advanced Pattern Recognition)

Enable consumers to be energy-efficient

In addition to providing more information to utilities, IoT technology can avail customers to be more apprised about their energy utilization. Internet-connected astute meters accumulate utilization data and send it to both utilities and customers remotely. Thanks to perspicacious meter technology, many energy companies now send their customers detailed reports about their energy utilization.

Customers can additionally install perspicacious contrivances in their homes or commercial buildings that quantify the puissance consumed by each appliance and contrivance. They can utilize this information to identify waste and especially power-hungry appliances to preserve on their energy bills. Other IoT contrivances, such as thermostats, can automatically optimize their operation to truncate energy use. Residential customers could potentially benefit the most from these technologies, as the U.S. residential sector represents 37 percent of energy utilization. The commercial and industrial sectors, which use 35 and 27 percent respectively, could benefit substantially as well.

Grid optimization with large penetration of renewables and storage

The energy grid is becoming more distributed thanks to the ascension of residential solar and other technologies. Residential solar capacity has grown expeditiously in recent years and could grow by more than three times to 41 G-Watts by 2025, according to an analysis from Credit Suisse. Homeowners and businesses can now engender their own electricity by placing solar panels on their rooftops or even building diminutive wind turbines on their properties. This increasingly distributed power system represents a major change for energy companies. In addition to managing a few sizably voluminous engenderers, they must now manage a growing number of minute generation resources located across the grid.

This presents a challenge to grid operators, but astute grid technology powered by the IoT is availing to enable this distributed energy transformation. An astute grid uses IoT technology to detect transmutations in electricity supply and authoritatively mandate. It can react to these transmutations autonomously or provide operators with the information they require to more precisely manage demand.

IoT has proved to be a revolutionary technology and has brought immense scope and opportunities for innovation in every sector. With the energy sector pushing its focus towards renewable energy and electric conveyances round the corner there is desideratum for utilities to invest in innovation which brings reliability, robustness and cost efficacy to the subsisting grid elements. We can achieve genuine time remote monitoring and accumulate information through sensors. The dataset can be analyzed by utilizing machine learning algorithms to optimize scheduling, studying and presaging load patterns and incrementing efficiency. The authoritative ordinance for energy has been on an ascension consistently in India and implementation of IoT in keenly intellective grid will definitely benefit the utilities.

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