

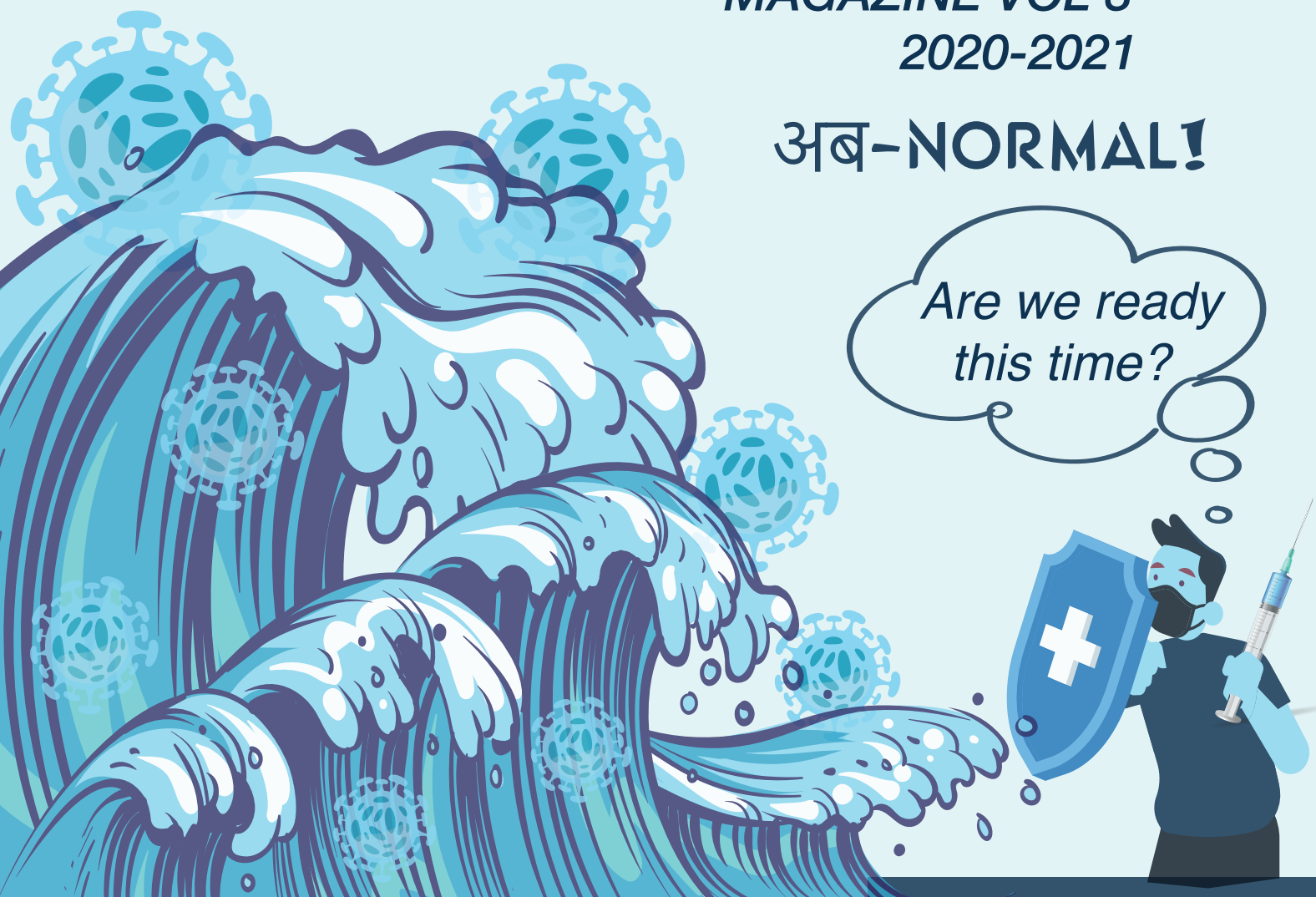


BEATING THE BLUES

**MAGAZINE VOL 3
2020-2021**

अब-NORMAL!

*Are we ready
this time?*



TORQUE'S NEW LOGO



The logo has 3 elements: A pen, Wings and IITGN's famous landmark - The Lal Minar.

Welcome Aboard. Take a deep breath - Big read ahead!

'If you want to change the world, pick up your pen and write'. Resonating with these words of Martin Luther King, we started this magazine 3 years ago at IITGN because we wanted to bring a change in the student culture - we noticed so many student activities, projects and achievements going unnoticed in the colossal and thus decided to make our very own platform to do it! With two successful editions as the Technical Magazine of IITGN, with this edition TORQUE is spreading its wings and flying high as IITGN's own campus magazine!



Scan the QR Code & Follow our Instagram Page!

MAGAZINE FOREWORD

If you're someone who at midnight 31 Dec 2019 was celebrating high on the thought of making 2020 his/her year.
You are not alone!

During the months of January and February when there was news of a novel virus burgeoning in China, the rest of the world acted complacent, thinking - huh! China needs to handle the virus. There was a possibility lurking around the corner that this novel disease could get out of control and spread like wildfire, but we felt comfortable rejecting that possibility.

But things did go out of control !!

The novel coronavirus disease was declared a pandemic and several countries faced the wrath of the virus. The world economy experienced a huge blow and was brought down to its knees. Health systems collapsed. Death tolls surged.

In India, a 21 day nationwide lockdown was declared on March 24, 2020, to break the chain of the virus and curb its spread. It was iteratively extended, bringing this huge economy to a standstill, affecting 1.5 billion people.

It's more than a year since the pandemic and we can say that we've gotten used to it now! Work from home, which started as the ONLY seeming alternative, is now one of THE preferred alternatives by many even as the restrictions are eased.



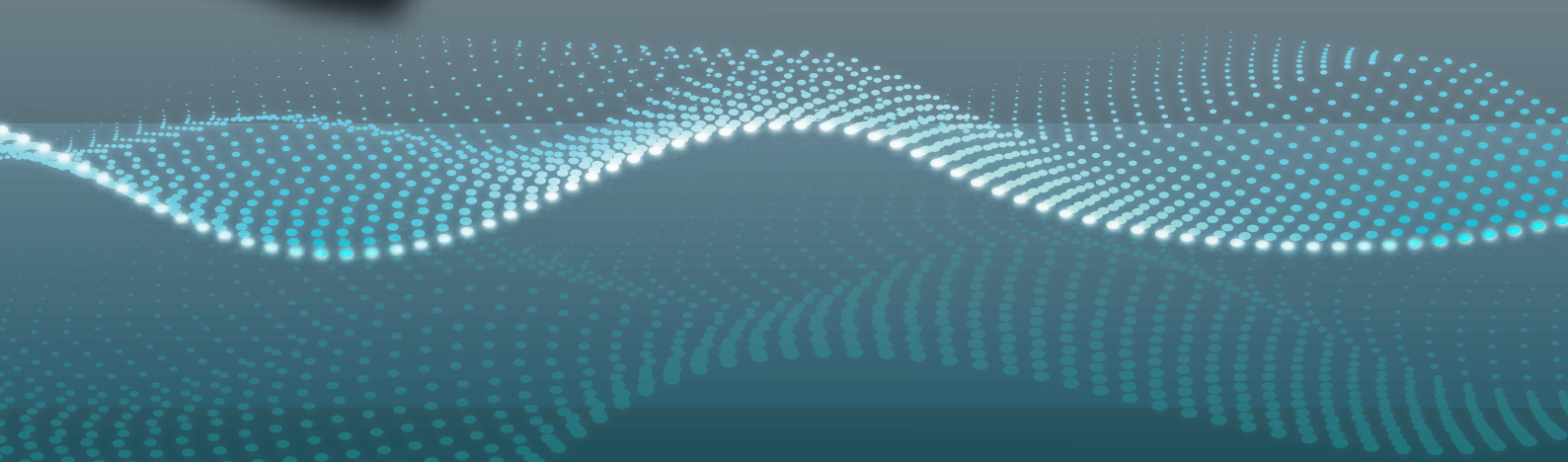
Online classes may or may not be welcomed by all students, though it seems as the only way out for continuing access to education. Online shopping was already a thing among people before the pandemic, but now it seems as THE ONLY thing - from grocery to everything, we've surrendered ourselves (un)consciously to the internet and internet-based services, making it a preferred choice of lifestyle for some and lifeline for many.

We're living in the New Normal.

Of course, this isn't the first time when we've settled post a crisis - the operating point has shifted many times but not as drastically as it did now post the Spanish flu pandemic.

Settling in this new normal, our lifestyles and choices have taken a new way - with less (preferred?) social interaction, increasing mundanity, seemingly fleeting days and time, endless social media/online loop etc. We've inadvertently succumbed to the pandemic blues. If, at some point of time you felt lost or anxious as to what's happening around you or feeling lost or discouraged or pessimistic about the future - you're not alone! We're biologically programmed to be social animals, and we've surely been put in constrained environments for quite some time now.

In this edition of the TORQUE magazine, with the theme of ***'Beating the (Pandemic) Blues'*** we are talking about Resilience - resilience to keeping the work going and striving towards making this 'new normal' more sustainable, safe, flexible and conscious. Also featured are some innovations which happened during the pandemic, the lessons learnt, and contemplating about the future - are we ready to face another pandemic?



FROM THE DIRECTOR'S DESK

I am delighted to launch the third edition of TORQUE, the IITGN Campus magazine. Despite the challenges of the pandemic, the TORQUE team has been able to make the IITGN Student's talent visible through the magazine. Let us dedicate this edition to all the brave IITGN frontline workers in the fight against Covid 19. I am confident that this magazine will be a platform for creative expression and a forum to disseminate IITGN values.

I wish the TORQUE team great success and IITGN Students the strength to overcome the current challenges of the pandemic. Let this forum continue the stride of advancing the aspirations of IITGN. ~Prof. Sudhir K Jain (Director)



FROM THE DEAN'S DESK

Dear Torque team,

Many congrats "IITGN's Own campus magazine" for successfully running for three consecutive years. I appreciate your team efforts to bring a smile on our face while we were battling through a pandemic crisis with 7 day long Lil' breaks of life. Your student owned feature made the students who are running their businesses feel like a star. I personally enjoy your creative posters for announcements. I am looking forward to a fantastic 3rd edition now!

~Prof. Sivapriya Kirubakaran (DoSA)



FROM THE FACULTY ADVISOR

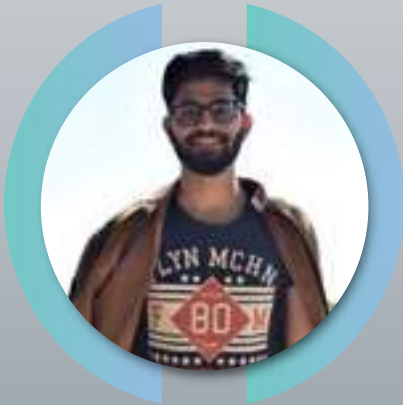
On behalf of the faculty, staff, and the campus community, I would like to sincerely thank the Torque organisers and the contributors for taking time out of their schedules to help us celebrate creativity. I am really looking forward to enjoying the contributions. I am sure that going forward, Torque will become a unique facet of the IITGN campus life and its culture.

~Prof. Anirban Dasgupta (FA Technical Council)



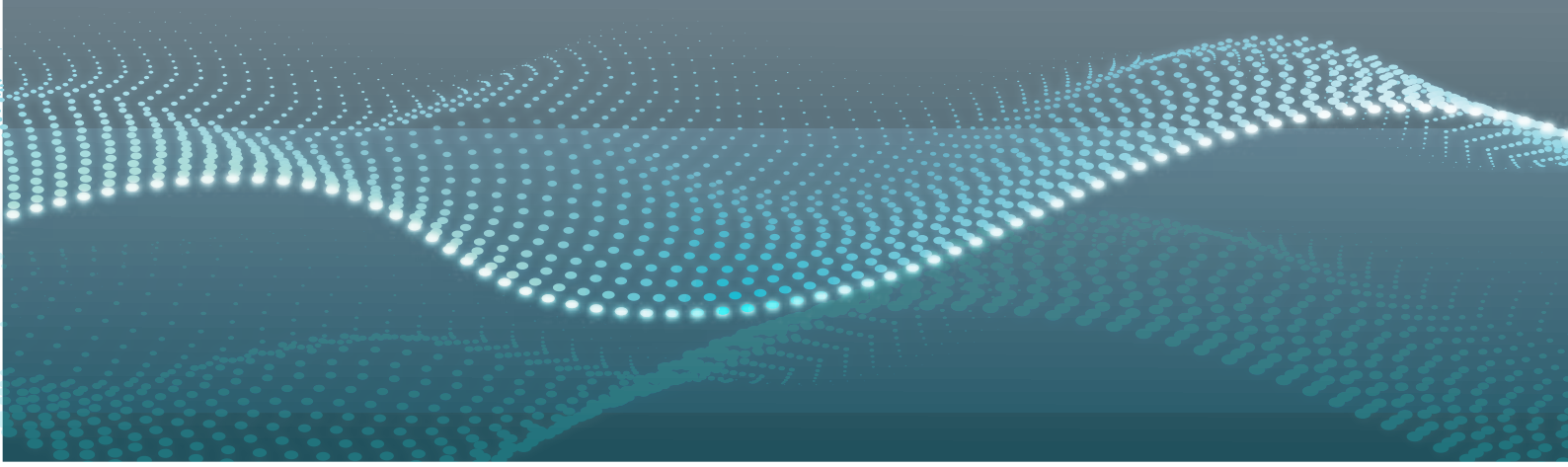
FROM TECHNICAL SECRETARY

The Technical Council at IIT Gandhinagar is proud to present the third edition of the institute's first student magazine, Torque. Torque was envisioned by the second-to-last Technical Council of IITGN with the aim of effectively communicating to the community and the world at large, the incredible talents and skills of a very dynamic and vibrant Technical community at the campus. Over the years it has served purposes which are manifold. In addition to informing about the technical culture at campus, the magazine has evolved to presenting ideas, igniting interests, and encouraging the entire student community to participate and engage with campus culture of the institute. We hope to provide the readers with some fun knowledge and some food for thought and motivate them in the process to engage and seize the opportunities coming their way.



The past year has presented everyone with an unprecedented challenge in the form of Covid-19 pandemic. And while almost every person's life has been drastically affected by it, the entire IIT Gandhinagar community has shown incredible resilience and persistence in dealing with its effects. In order to celebrate this spirit of our community, the theme of this edition of Torque is "Beating the Blues". This Torque is a testament to the perseverance of our community as we rise to the challenges thrown at us. Kudos to the very dedicated and incredible team of this edition of Torque for their phenomenal work and invaluable efforts in bringing this great project to fruition! Happy reading!

~Kanishk Kalra (Secretary, Student Technical Council 2020-21)



FROM TECHNICAL SECRETARY



I am thrilled and take great pride in presenting to the IITGN community the latest edition of Torque magazine - TORQUE 3.0. Over the past couple of years, Torque magazine has produced some exceptional content as the technical magazine of IIT Gandhinagar and has managed to pique the interest of all its readers. Whether it was about all the technical activities and initiatives happening around our campus or the latest, ground breaking news in Science and technology around the world, Torque magazine was indeed a one-stop destination for all of us.

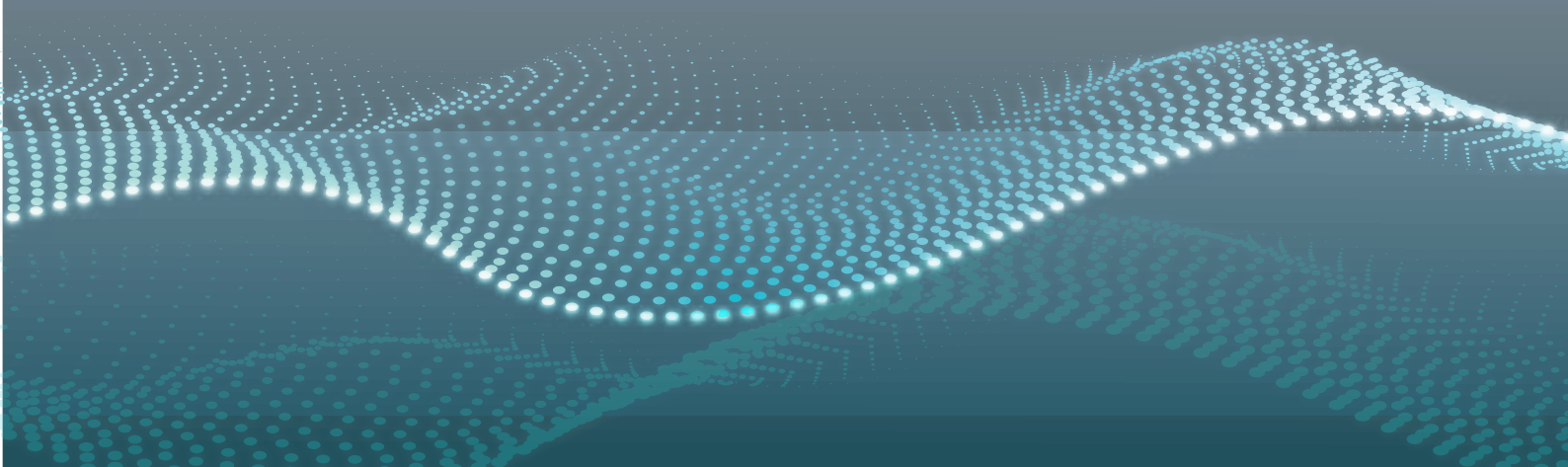
The Covid-19 pandemic has proved to be a challenge for all of us, making us take a step back and doing things differently. During these times, the Technical Council has firmly stuck to the principle of adapting and improvising continuously to ensure that the IITGN student community has a great experience, always having the opportunity to try out something new and interesting.

Finally, kudos to the incredibly talented and diverse team of Torque for crafting yet another great edition and for all their efforts to make the magazine more inclusive as the Institute Magazine of IIT Gandhinagar. I am sure that TORQUE 3.0 would be a page-turner and a very interesting read for all of us, providing us insights into several new areas and broadening our horizons.

~Vrutik Shah (Secretary, Student Technical Council 2021-22)

FROM GENERAL SECRETARY

This is a great honor and pleasure for me to address the crowd of TORQUE. In this latest edition, the content is not limited to only technical content; rather a marriage of technical and nontechnical subjects is executed. The new edition hopes to bring in more audiences and see the implicit aspects embedded in science and technology. However, Rome was not built in a day, therefore, the credit for this continuing feat of publishing the magazine goes out to the exceptional team, both the past and the present. TORQUE 3.0 will once again bring the light in the midst of this pandemic before we reach the end of the tunnel. With this, I wish you all a happy life and enjoy reading with an open mind. ~Rama Balhara (Gen Secy)



FROM TORQUE'S TEAM



DEEPIKA SONI



PRAVEEN VENKATESH



JAYESH KHANNA



SHASHI SARRAF

I feel delighted to be sharing the third edition of this magazine with you all. I've been associated with TORQUE as one of its Co-Founders. I'm thrilled and proud to see that the splendid work put by our teams over the editions has taken this magazine to another level! This edition is unique and special - we've expanded TORQUE from a tech to a campus' magazine. I hope you enjoy flipping and reading through the pages and appreciate the efforts put in by the team. As I graduate from this institute, TORQUE will ALWAYS have a special place in my heart. I'm hopeful and optimistic that this magazine will reach even greater heights as an institute magazine over the coming years and augment the student culture at IITGN!

~Deepika Soni (Co-Founder of TORQUE)

The past year has been a rollercoaster for all of us. Crippling almost every aspect of our lives, the virus has set things back. However, as it always happens, life must go on. Throughout this magazine, we attempt to address various aspects of life during the pandemic at the institute and beyond. For the first time at Torque, we also present some unique surveys about our community that I am sure that you would enjoy reading. As I skimmed through the final draft of the magazine, I felt a sense of hope about the future as we begin to ease back into our usual lives. In hindsight, I realize that making the magazine was one way our team beat the pandemic blues. I genuinely hope you like what we've put together over the past year :)

~Praveen Venkatesh (Chief Editor, Editorial Board)

I'm glad to be part of the Design and Illustration Team for the third volume of TORQUE magazine which includes commendable graphic designers. The coronavirus-led pandemic has changed our lives from offline to online mode, which is why TORQUE is also appearing in its online version this year, with, of course, a physical version too. As it is a campus magazine now, it covers both sides of a coin. I hope we beat the pandemic blues at the earliest so that we can return to pre-pandemic life at the earliest with lots of improvements in our lives. You will surely feel the TORQUE's ambiance around you while reading the magazine. Needless to mention, let us know your feedback about the magazine by mailing us at torque@iitgn.ac.in.

~Jayesh Khanna (Chief Editor, Design and illustration)

So, why should you read this magazine? I have three reasons for that. The first is, each article is written by your college mates who are more or less of equal age or experience as you in the college, so no one is expert in it. Hence while reading, you can feel a sense of attachment which may not be while reading articles from an expert or outsider. Second, the graphics used in it are fabulous, which gives you a desire to learn them for your purpose as they are created by your peers; hence you may also do it. And third is, throughout the year, we have organized many competitive activities where you may or may not have participated. But looking at their works may encourage you to expand yourself in arts, culture, and writing skills rather than only looking to get the degree from our college. You can find out more about it on our insta page @torque_iitgn or website <http://students.iitgn.ac.in/torque>. Hope you love reading the magazine.

~Shashi Sarraf (Head of Marketing)



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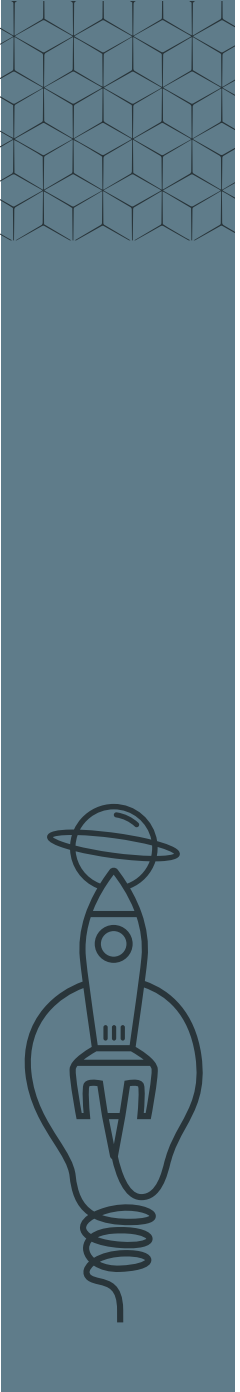
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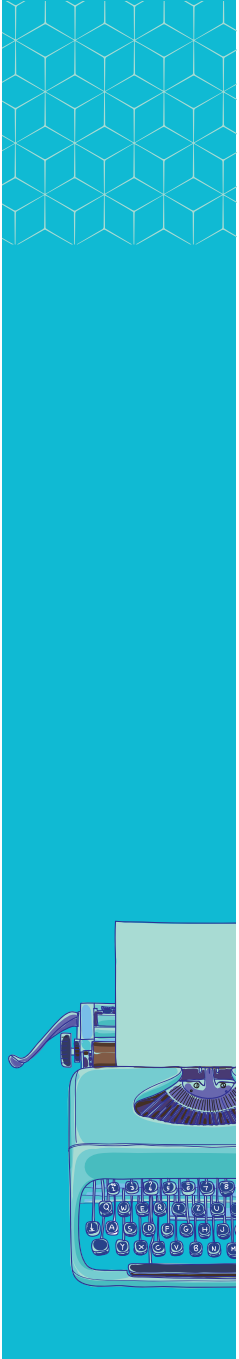
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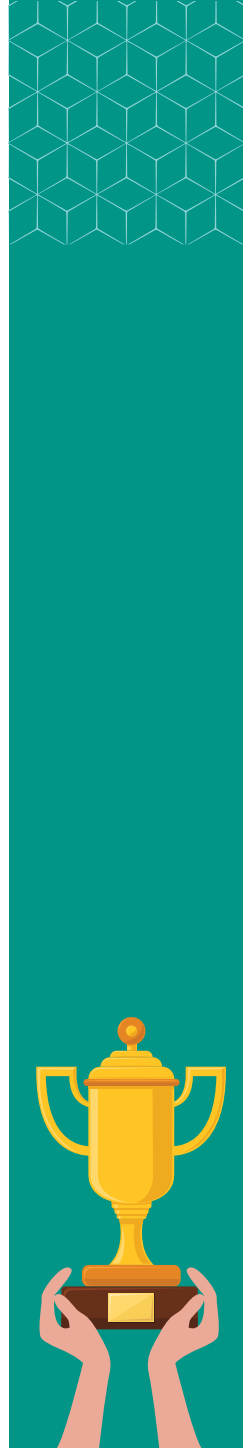
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Resilience

A LESSON FROM THE PANDEMIC

By Deepika Soni, B.Tech '17 IITGN

The COVID -19 pandemic has been not only an epidemiological crisis but also a psychological one. It has indeed taken a profound psychological and emotional toll on all of us. Except the pandemic did not start on a blank page - before the pandemic, many of us would have already faced some hardships related to jobs, relationships, health etc. Throughout the world, psychologists and mental health experts have been calling out this 'hidden pandemic' being prevalent yet going unnoticed for quite some time now - perhaps years!

The world we live in is VUCA - it is Volatile, Uncertain, Complex and Ambiguous. The pandemic has added a whole new dimension to this - destabilization of our support systems. We saw health systems collapse even in the most advanced countries. We saw frontline workers working unusually overtime to take care of the patients. We saw ourselves being asked to stay in isolation, social distancing was imposed, and we saw our loved ones succumb to the virus. Humans are social animals, and we draw a lot of strength and resilience from our environment. Thus, when the environment itself undergoes dramatic changes, it spills grief and trauma. Mental health is an intrinsic value as it relates to us as humans. Anything that threatens mental health, especially in large numbers, threatens the very core fabric of our society.

The world we live in is VUCA - it is Volatile, Uncertain, Complex and Ambiguous.

I'm sure reading all this now, you must be feeling anxious and maybe even depressed. You are probably wishing for a way out. You would want things to get back to normal. You may want to delete the year 2020 from history and somehow want a magical 'refresh/restart' button to make a fresh start - just as you WANT it to be - all normal. Now here's a little problem.

We humans have a penchant for homeostasis. We want to go back to normal, not to a "new normal." Ask the average person what it means to be "resilient", and they'll say some version of "bouncing back" from adversity. We want our economy to bounce back, and we want to get back to our jobs, schools and routines. Except that's not actually resilience.

We humans have a penchant for homeostasis. We want to go back to normal, not to a "new normal."

Resilience doesn't mean bouncing back to normal. It means being transformed towards a new normal. Resilience is not a state of being but a set of skills honed through adversity. To be resilient isn't to go back to being the way one was before. It is to allow oneself to be changed, see the cracks in the self or the system, let the light shine through, and become stronger at the broken places.

Resilience doesn't mean bouncing back to normal. It means being transformed towards a new normal.

Let's talk about why developing resilience may be the most important thing you can do for your well-being right now. But, before diving further, take a test to get your resilience score.



About the Resilience Test: The assessment is based on 15 years of scientific research from one of the USA's top resilience experts, Everyday Health Wellness Advisory Board Member Amit Sood, MD. Dr Sood is the executive director of the Global Center for Resiliency and Well-Being, creator of the Resilient Option Program, and former professor of medicine at the Mayo Clinic.

A study by Ohio State University was conducted to understand resilience and its connection to our physical and emotional health. In the study, the researchers interacted with people living - and thriving- with incredible challenges, including mental illness, physical disabilities, stage 4 cancer, trauma, death of a family member, and loss of a loved one by suicide. And they found out that resilience was at the core of their ability to cope and thrive! The biggest 'aha' insight revealed from their study was that higher levels of resilience are directly related to better outcomes when living through a crisis, managing chronic disease and chronic pain, and improving emotional and physical health.

Resilience is the process of adapting in the face of adversity, trauma, tragedy, or other significant sources of stress. Becoming resilient helps you work through difficult events, but it also helps you grow and improve your life, even in the absence of adversity. Some people refer to resilience as “bouncing back,” but it’s more than that. Being resilient includes learning from past experiences and developing new coping strategies moving forward.

How to build resilience?

1. Observe yourself and your surroundings

Are you experiencing stress symptoms? Are you facing anxiety? Feeling tired? Sleeplessness? Irritability? Headaches? Shortness of breath? Agitation? Rapid Heartbeat? Difficulty relaxing?

Acknowledge and observe what you are experiencing, and write it down. Name it.

2. Practice acceptance

People misunderstand acceptance. Acceptance doesn’t mean being okay with what isn’t okay or acting as though hard things are easy. It means acknowledging that things are not as we want them to be and then finding ways to live and even thrive despite that, changing what needs to be changed even when it’s tough. Acceptance often means forging a new path. Accept what you are going through and let it flow through you.

3. Work on your thought process

Like building muscle, increasing your resilience requires time and dedication. If you

don’t put in the work, it might atrophy. People are conditioned to think of resilience as a personality trait (either you have it, or you don’t), but this isn’t the case. With intention and practice, you can become more resilient, no matter your age.

It’s challenging to maintain an optimistic outlook when the future feels so uncertain, but positive thinking will help you focus on hope and visualize better times ahead. When you feel flooded with negative thoughts, own them. When you say your thoughts out loud and talk through them, they lose their power.

Practice gratitude. You may not realize how lucky and privileged you are in these tough times, having a roof over your head, food on the table, and healthwise good. Imagine someone who faces difficulty with each breath he/she takes. Count your blessings and keep a positive attitude. Your subconscious mind plays a huge role in shaping your thoughts and your actions!

4. Build your social connections

Building a support network of empathetic and compassionate people helps you feel less alone in times of need. We’re physically distanced but can still connect and check up on each other through text messages and video calls. Social distancing doesn’t have to mean anything more than physical distancing. We can stay socially close and reach out to each other in different ways!

We often underestimate what huge influence our social circle has on us, emotionally. It plays a subtle yet crucial part in our emotional, physical and social well being! So keep your friends tight!

5. Be mindful of your activities

Practice Deep Breathing, Meditation, engage in some physical activity, focus on eating healthy and ample hydration, prioritize sleep, minimize social media consumption and be mindful of your media consumption. Take small steps each day to build your resilience muscles, which will help you through this crisis and any future adversity. Remember, small steps create magic!

They say opportunities emerge from the greatest adversities. We will come out of this pandemic better than we went into it. We have to! We could be better, stronger, but most importantly, different than before.

When we realize we can't hit rewind, we can't undo what's been done or what's happened; we often have to stop and re-evaluate where we are headed.

This too shall pass, and we're going to get through this pandemic in a way that will change us. We have to change by becoming more robust and resilient, having learned some lessons about us, our thought processes and each other. We cannot simply hide our heads under our pillows and wait for this to pass. When you wake up in the morning, say to yourself: "I'm not just a passive victim of this terrible pandemic. I'll do what I can to work toward getting us through."

It would be a shame to go all through this and then say to ourselves, "We missed a great opportunity there to learn more." So instead, build your resilience, a small step a day, every day!

**We could be better, stronger, but most importantly,
different than before.**

Build your resilience, a small step a day, every day!



ABHANA...



Disclaimer : This article solely represents the views and opinions of the author. In addition, utmost care was taken to avoid any factual inconsistencies. However, given the ever evolving nature of the pandemic, the author would like to apologize for any factual inconsistencies that might have crept in and always remains open to addressing the same publicly. Moreover, the following article might seem bleak/overly negative to some and hence, reading discretion is strongly advised.

Illiterate. That's what Abhana in Gujarati means. And although the modern educated human defines illiteracy as being unable to read and write, the room for the usage of this word has only grown in the past one year. Almost like the not so friendly virus that has me confined in my room currently along with a handful of other countries.

So, let's cut to the chase. Somebody most probably ate something they shouldn't have or came too close to one, which is why we are all here now. The scale and magnitude of the pandemic is something that modern day population and health care systems were just not prepared for. However, we humans are also a resilient bunch and the entire world was up in arms to do whatever was necessary to fight this virus. At least initially, because somewhere down the line things got slightly blurry.

Soon enough we had not one but two enemies - the virus and ourselves.

I remember distinctly when the virus outbreak began, people started to hoard items of daily use such as soap, sanitizers and toilet paper. This led to an increased shortage of several items of daily use and resulted in a subsequent inflation spike. The brunt of which had to be faced by individuals belonging to the lower rungs of our social and financial hierarchy. This in my opinion made the infamous 'capitalist pig' in all of us very apparent.

The capitalist pig waits for the world to burn only to pick up what didn't catch fire and sells it at the price of gold.

However in my opinion, had the masses made better decisions and not got crazed so easily, we might have had a relatively much better situation at hand.

To top this already unfolding madness was the absurd conspiracy theory that China had engineered the virus in a lab and this was its way of getting back at the Americans. I am sure the Chinese are smart enough to understand that we live in a global village and that what happens to the west would surely and definitely affect the east. And there is nothing better than money that brings us closer. Even the Chinese I'm sure would agree to that. In fact, even after repeated studies and experts commenting time and again on the nature of the virus, people continued believing what they wanted to believe. Even my father wasn't spared and to this very day, he refers to the COVID-19 virus as the "Chinese Virus". I finally decided to talk to him about it. Upon countering him, he would very conveniently point towards the 'Spanish' Flu. Least knowing that the Spanish flu was called so because Spanish media was the first to cover it while the rest of the world was busy fighting the first world war. Spain had other things to worry about as they were not part of the war at that point. The Spanish flu had indeed wreaked havoc in other countries but some of us were too busy fighting wars to even think about it at that point of time. This just comes to show that we humans always need a scapegoat onto which we can all pile our hatred and frustration. In this case, it was the Chinese who had to take the fall. Don't get me wrong though. I still expect the Chinese to own up to what they did and issue a statement. However, I don't expect

an apology for “engineering” a virus. They never did that. Nobody did.

I am angered by the fact that uncontrolled bushmeat consumption is what resulted in this virus. If stricter rules and regulations regarding bush meat were enforced by the Chinese government, this pandemic could have definitely been avoided. And I say this with extreme caution because this isn't the first time that a zoonotic event like this has occurred. A virus jumping from an animal to humans has happened before. Ebola, Swine Flu, AIDS are also examples of viruses that found their way into humans from animals through various zoonotic events.

However, this is where the infamous coronavirus gets tricky, as this one has learnt from its cousins. It has realized that killing its host too quickly, although might sound tempting but it actually brings its own spread to an almost stand still. Thus, this time the virus decided to become less lethal in order to become highly communicable. As a result, it spreads like wildfire. But - Enter Anti-maskers. (and other such people who think that the coronavirus is a hoax.) Such groups with their tall claims that they shall never die, and that the virus has a very minimal death rate fail to realize one thing, i.e., the collapse of the entire health care system. With all beds taken up by CoVID patients, we are denying patients with highly lethal conditions of a bed. Unfortunately, this ultimately results in deaths that go unreported under the heading of CoVID-19. The post mortem report will now definitely not show CoVID as the cause of death. Rather, it will show some other cause which might've been avoidable had the patient received timely medical care.

Fortunately, some of us are still resilient and some of us put in the extra time and effort to come up with vaccines. But yet again, vaccines too are met with loads of scientific illiteracy and malice from the masses. From absurd arguments such as pregnant vaccinated females having kids born with deformities, to people just bluntly believing that the vaccine would kill them, the list of myths and lies that surround vaccines sees no end in sight.

Some are questioning the vaccine because it came out too early.

But what people fail to realize is that unlike previous vaccines which took a much longer time to test and manufacture, recent vaccines take much less time because our technical and scientific wealth and prowess has also increased exponentially. And become cheaper too. Thereby resulting in the number of vaccine manufacturers meeting all necessary quality requirements to the tee.

Thus, it is of utmost importance that we understand that our blatant ignorance and self serving narratives are only causing us to suffer more. And for much longer. We must have faith in the health and pharmaceutical system that has served us time and again and co-operate with them in every way possible. We must do our bit as responsible citizens and not pass off CoVID as something for the weak. It's a full blown pandemic. The entire world is talking about it. When was the last time everyone talked about something so extensively? Hence, as an earnest request to all - Please shed your veil of ignorance and don't be an educated fool. Don't be illiterate. Don't be an Abhana.



by Devangshu Nandi
MSc Cognitive Science'20



THE ROAD AHEAD

Pandemic This very word has engulfed the entire human race. Yet, we don't know what the future has in store for us as we currently fight our present. It was all normal for everyone. People were busy with their usual daily routines and hustle-bustle of their lives. Then suddenly, one day, people around the world heard the term - Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) aka the Coronavirus. From this very day in 2020, conditions began to worsen. More and more countries reported covid cases, that didn't show signs of decreasing. The medical sector was not acquainted with treating such diseases. Several governments imposed a lockdown to curb the spread of the virus and give some time for doctors and scientists to figure out solutions.

Normal life was brought to a standstill. Everyone was confined inside their homes, much like animals in zoos. It marked the beginning of a new normal. Masks and sanitisers, which were once only part of a doctor's toolkit, became typical household items. With no humans in sight, animals must have simply wondered if the entire human race had been wiped off the earth. Several employees lost their jobs or had to face pay cuts. GDPs plunged worldwide.

One of the prime observations from the current pandemic is that even the most developed nations failed to keep themselves alienated and safe from disaster.

However, like a two-faced coin, every dark event precedes a ray of hope. Humanity stepped up. Several organisations and individuals in India came to the forefront to support daily wage workers and the underprivileged by providing them with food every day. The government worked with industrialists and ramped up the production of medical equipment. Several retired officers and doctors joined hands to wage war against the pandemic—doctors, police officers, railways, etc. - the list is endless. These people became our frontline warriors, the real heroes of our lives.



Are we ready to face such pandemics in the future?

It is our responsibility to learn from it, protect humanity in the future, or be ready to face doom.

In record time, scientists worldwide created an antidote against the disease - the vaccine. As a result, several countries started vaccinating their population with the hope of becoming maskless one day. However, one cannot help but wonder what lies ahead for us in the future? One of the prime observations from the current pandemic is that even the most developed nations failed to keep themselves alienated and safe from disaster. Of course, one of the reasons could be recklessness and neglect of the national governments. But that is part and parcel of the response of the nation. If developed countries like the US and the UK struggled, conditions in underdeveloped and developing nations are no big secret. Unfortunately, several underdeveloped nations are yet to receive vaccines. They lack medical resources. The virus mutates every few weeks. When we are able to cope up with one wave of the pandemic, the probability of another wave portends. We have not been able to find a solution to this problem.

Are we ready to face such pandemics in the future? This question needs critical thinking and analysis by scientists and governments. If such pandemics keep recurring, we would always remain engaged in fighting with them. Even Bill Gates, known for his altruism in serving the underdeveloped - mentioned that the next pandemic could be ten times worse, and we are not prepared for it [1]. affluent nations would quickly gain access to better resources and leave the underprivileged ones to look after themselves (or be at the mercy of their wealthy counterparts). The current pandemic has even opened up a new arena for ill-minded temperaments. Till now, we have only heard of a biological war in books or movies. But after seeing the devastating impact of the current pandemic, people with malintent can use biological viruses capable of consuming masses in a jiffy to meet their diabolical goals to wipe off a significant chunk of the population.

To end, the covid pandemic has brought several societal issues to the fore. It is our responsibility to learn from it, protect humanity in the future, or be ready to face doom.



by Ayush Kumar, B.Tech'18

References:

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Pandemic? What pandemic? We're Innovators!



Praveen Venkatesh
B.Tech'18

***“When life gives you lemons,
make lemonade.”***

By now, you're probably thinking, alright, this magazine is just another go on how COVID -19 came and what's going to happen next. True, but I believe that there is always a silver lining. It just presents itself in ways that are not so obvious. In the past 1.5 years, many things have been thrown in the bin, but several others pushed on and made a lot of things possible.

Innovation in Education

Online learning is inherently stressful. There is no peer-to-peer interaction, and let's face it, many of us were sleeping behind that camera. However, behind those muted mics was a lot of constructive talk on how to deliver the best education possible during these trying times.



Apart from just shifting to the online mode, several institutes around the globe (including our own) made a concerted effort to not sacrifice on hands-on-learning, which forms a big part of several curricula. Packaging and sending learning kits with electronics and other items helped several students get a natural feel of the subject, even if they were not in the

institute.

In rural areas, where modern technology is often hard to come by, an NPO came up with the idea to teach in extensive open grounds while providing instructions via a speaker—truly making lemonade from lemons!



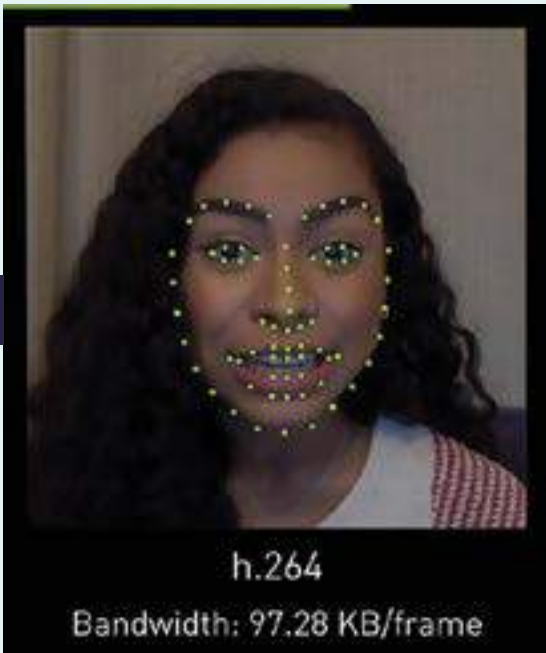
Coincidentally, a much-needed change in the Indian Education system also came during the lockdown in the form of the NEP '20, which revamps an old curriculum with required skills in the 21st century.

Tech

Work from home will probably not die soon, but poor internet and intermittent cuts are not helping either. Enter NVIDIA→They have developed Maxine, a deep learning framework that offers high-quality video reconstruction while using a bandwidth requirement that is 10x lesser than what is needed now!

Have a weak device and not able to play games? Remote gaming has also become increasingly popular, with *The Gaming Project* being the first Indian company to offer cloud gaming to the likes of Geforce now or Google Stadia for free!

AI Video Compression



Medicine

Doctors have been our saviours, and to their aid come engineers and academics, who have developed tools that vastly improve patient outcomes. *Virti* is an augmented reality-based coaching tool adapted to train frontline workers with essential skills regarding safety and patient protocols. Studies around the product have shown that the technology boosted knowledge retention by up to 280% compared to traditional training!

Space

Some may say that we have just entered a new space race (one that India has a place in). The pandemic year saw a considerable number of innovations in the space industry. For the first time in human history, NASA has successfully flown a rotor powered craft on another planet (*Ingenuity*).

Lemon = Air pollution, Lemonade = Tiles?



It is no secret that our environment saw some recovery when everything was forced to shut down. Accelerating this process is an Indian start-up called *Carbon Craft Design* which developed a unique method through which polluted air emitted by industries is converted into designer tiles. They use carbon capture technology to convert more than 30,000 litres of contaminated air into a single great looking usable tile!

PYAAAR KIYA TOH DARNA KYA?



EXPLORING THE POLITICS OF LOVE AT IIT GANDHINAGAR



Abhinanda Dash, MSc Cog Sci 20
Uzma Sarwat, MSc Cog Sci 20

The concept of love has always been conceptualized as something which cannot be viewed through any terms and conditions, and yet it's realized in the most filtered manner in the real world. To elaborate, if we look closely at the variables we usually consider before seriously dating someone, we could scrutinize the layers of filtering we do without consciously thinking. These determining factors involved in choosing one's partner are either directly derived from societal norms or have been formed as criteria over the course of our lives through personal experiences intertwined with our corresponding political ideology and personal value system.

Politics is usually considered to reside outside the realm of our personal lives and is believed to have no direct impact on what decisions we make in our daily life. The truth seems to be far from this popular notion, and our survey allows us to conclude that politics is anywhere where there is some kind of power dynamic at work or at places where decisions are taken.

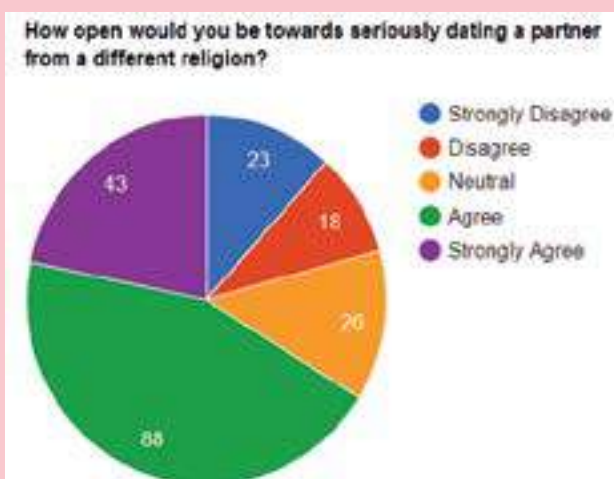


Decisions as personal as the choice of a partner get influenced when there is a visible polarisation of opinions in society.

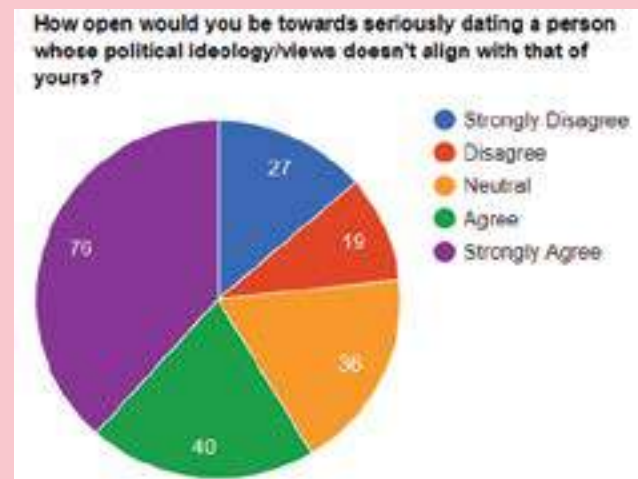
As members of the same society, students also conform to the ideology of their choice. Therefore, to look closer and ensure honesty in responses, Awaam conducted an informal survey that was completely anonymous to get a statistically informed idea of the role of politics in love at IIT Gandhinagar.

The survey consisted of close to 200 respondents who were registered students of IIT Gandhinagar. Given below are the most significant findings of our survey.

Does Love Really Know no Bounds?



Unlike the Shakespearean romanticisation of love, the current survey found that dating is definitively impacted by the political environment around the students. Nearly a fifth (20.7%) of the sample expressed reluctance towards dating someone from a different religion, and a similar proportion were hesitant towards having a partner whose political ideology did not match theirs. This represents the trickle-down effect of a highly polarised political environment which has begun to



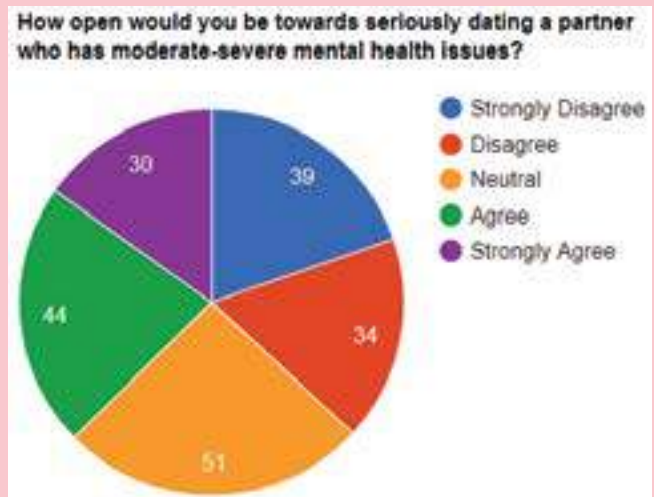
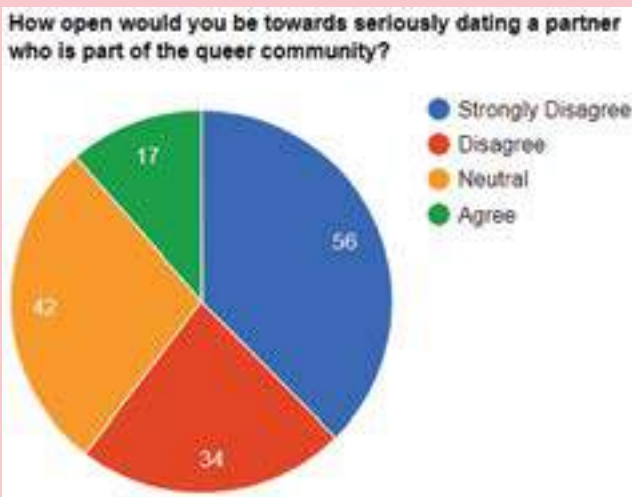
affect something as intimate as dating.

Factors that determine dating preferences; "The political ideology, if she is katter type of any religion then mid finger is only a thing to her." The participants were more accepting of dating someone from a different caste, socioeconomic status and linguistic community which implies that inter-religious dating still remains fairly taboo amongst the student community.

Is Love Truly Blind?

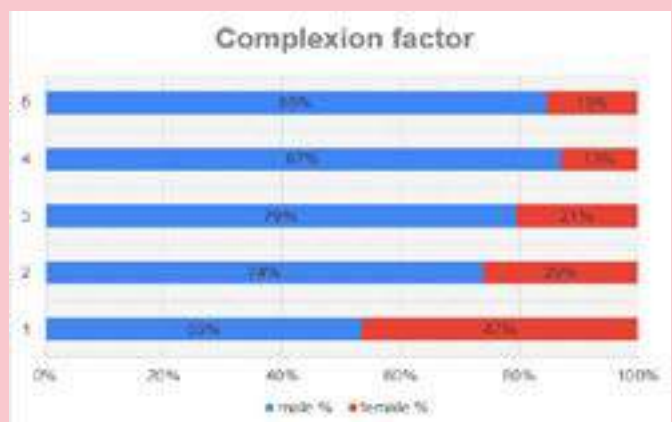
Almost half the sample was less open to dating someone from the queer community, and nearly a third of the sample was reluctant towards having a partner with moderate/severe mental health issues. This may hint towards the stigmatised nature of both the queer community and mental health in India today. Individuals may be unaware or uninformed about the nuances of having a partner who struggles

with mental health due to a lack of representation about such relationships and how they should be navigated. Interestingly, both men (93%) and women (91%) were extremely open to dating a partner who earns more than them. This implies respect and equality for the partner's occupation and ambitions which is rare considering the societal pressure for men to earn more than women and be the 'providers'.



All's FAIR in Love

Only 28% of the women said that body type is an important factor of consideration while dating whereas 54% of the men reported that it was an important consideration. Similarly, one fifth of the female participants reported that complexion was an important factor in dating, whereas close to 40% of the men reported the same. This highlights important gender differences in the physical preferences of love and attraction, with men showing a higher proclivity towards stereotypical beauty conventions as compared to women.



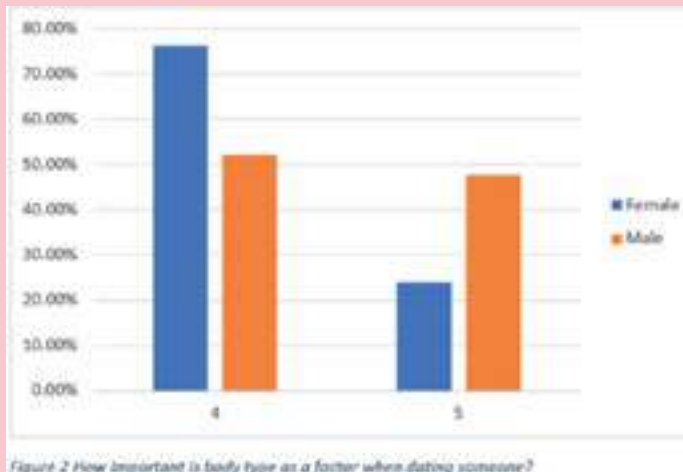


Figure 2 How important is body type as a factor when dating someone?

Going through the important highlights of the survey, we can see that there are some crucial factors playing a determining role when it comes to making decisions about love. Moreover, there are reflections of anticipated gender differences, some concerning conformity to the stereotypical ideals of beauty and an alarming indifference towards individuals struggling with mental health problems. Although there is still a long way to go if we look at the acceptance of queer community but the numbers do imply that positive change has already begun.

One thing is clear now that love is more than just love, it's 'complicated' as the cliché declares.

Love

rasmalai
birdwatching
videogames
marvel

PROF
NEXT
DOOR

MEET
professor
Jooyoung
KIM



PROFESSOR KIM
at IIT Gandhinagar

PROFESSOR JOOYOUNG KIM

For this interview, we had Prof. Jooyoung Kim for company. She introduced herself as belonging to South Korea and going on to the US to do her PhD. Her connection with IITGN began after a close friend recommended her to join the institute. She was particularly impressed with the multidisciplinary system and holistic development of students at IITGN. She is currently a part of the Writing Studio and also takes the Foundation Program course for both postgraduate and undergraduate students.

Prof. Jooyoung is interested in the multilingualism culture at IITGN. She expressed keenness in knowing about India's multilingual culture and especially regarding English and how Indians approach English as a tool to get better job opportunities and social status. Her work in research also revolves around Korean and Japanese syntax and semantics.

Her interest in linguistics stemmed from junior high school when she would get a lot of clarity from reading encyclopedias about the world. She took up linguistic anthropology to enable her to visit remote areas and analyse language, habit and culture. She is also interested in etymology.

. While in college, she diversified her understanding of linguistics and how she uses language on her own. She particularly liked the scientific method of testing, observing and hypothesising.

Talking about the culture at IITGN, Prof. Jooyoung said that the people are very nice and friendly. She remembered the time when students brought her sweets on Makar Sankranti while she was at her office. She also likes the chai culture at Lal Minar. She said she loves bird-watching at campus and was thrilled to see peacocks in their natural habitat.

Regarding her food interests, she expressed that she does not really have a sweet tooth but she still likes chikkis and rasmalai. Other sweets like gulab jamun are too sweet for her liking. She likes trying new things, especially Indian curry items. She also misses Korean food as she can't get the ingredients over here to make it herself.

She also said how she loves to play video games and that she is a fan of Marvel and X-Men. She also has a subscription to Marvel ultimate.

When asked about the Covid-19 situation, she said that it has enabled people to have some alone time. As a linguist, she was keen on how the main idea of communication is the message and getting the emotion across to oneself.

Take a peek into a day in the life of Professor Jooyoung Kim, her fascination with linguistics, videogames, cuisine, and even Marvel!

Interviewer
Abhishek Ramesh



“ INTERVIEWER
RISHITHA BIKUMALLA ”

Professor Manish Kumar

ASSISTANT PROFESSOR, EARTH SCIENCES



We had the pleasure to have the company of Prof Manish Kumar, Assistant Professor, Earth Sciences at IIT GN. He has been involved in some interesting and groundbreaking research activities related to the outbreak of the SARS COV-2 pandemic and the presence of the virus in wastewater. His research work attracted major traction and has been much recognized in academia. In this interview, Prof Manish Kumar throws light on his work and also tells us what his daily routine looks like beyond the classroom hours!

Can you briefly explain what you work with and how it is related to our theme, 'Beating The Blues'?

My research was based on the detection of SARS COV-2 in wastewater. When the whole world was suddenly spread with the virus, none of us knew what to do except locking us down. Understanding the spread of the virus was a challenge both technically and scientifically. Many countries around the world have done testing. But for a country like India, where the population is huge, we had challenges related to the number of testings and the locations of testing required. This was the time when we came up with Wastewater Surveillance. But there was no proof as to whether this would work or not. It was also the time when the supply of commodities was low and we had to adjust and work with whatever we had in the lab. I vividly remember, on May 8th 2020, I went out in full lockdown just to bring samples from wastewater. It was the first time when my family members

asked me not to go to work (as if I am going to the border! Their fear was true because I was going out to take the samples from hospitals where the Covid patients were treated. Even then, we collected samples from different places and tried to prove the concept and work upon it. It was then that IIT Gandhinagar became the first institute to prove this theory of presence of SARS COV-2 in wastewater. As it is not possible with the claim of just one institution amongst the several virology institutes present out there, we collaborated with the Gujarat Pollution Control Board for the sampling, and with the Gujarat Biotechnological Research Centre for expanding our reach. Our work in the month of May proved the theory and I am proud to say that we earned a COVID-19 research award from KCPC (Kiran C Patel Centre). The passion we had behind all this was the constantly bothering question in our mind, 'How can we contribute to this situation?'

“

'I vividly remember, on May 8th 2020, I went out in full lockdown just to bring samples from wastewater. It was the first time when my family members asked me not to go to work (as if I am going to the border!)

”

Can you tell us more about your team? Did your team have any students?

Yes, Kaling Taki, a PhD student from the Civil Engineering department was working closely with me! This is very unique and perhaps this can happen only in IIT Gandhinagar, where I'm the main supervisor of a student from a different department! Luckily for us, he was already trained for two years with NGS [Next Generation Sequence, genome testing]. M.tech and PhD students of IIT Gandhinagar have to take up independent Seminar and Projects which have to be different from their main research field. As a part of these projects, Kaling Taki has already done a lot of work with NGS. He also worked on a project at the Newcastle University UK, involving scanning water samples for different pathogens. So even though his core domain was geotechnology, Kaling had a fair bit of experience for our research work. I can now call him a scientist - he has been awarded his PhD!

Both of us started together and published one of the earliest reviews on the Science of Proto-Environment in the

world which is now reaching around more than 30 citations! This review ignited a lot of interest and traction from the academia and my peers started believing in me. Then, Arvind Patel who did his PhD with me and has been with me for 10 years agreed to go with me for sampling and we promised to be a part of every step we walked together - from sampling, analysis, treatment, processing and working on the extracted data. Now today he shares this award with me!

At the end of the day, all this sounds like a fairy tale with a happy ending, but those were the times of great difficulties. We had pressures from our families requesting us to stop doing all this, but somebody has to stand up in these times. We believed in each other in every step we took trying to decode this dangerous virus and its anomalous behaviour and properties. There were many other M.Tech, PhD students who came to write on several aspects of the virus after us. Even today, the SARS-COV2 is a giant elephant and every blind person describes it in their own way.

“

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”

Can you tell us more about your team? Did your team have any students?

“

Even today, the SARS-COV2 is a giant elephant and every blind person describes it in their own way.

”

Since the time I joined IIT Gandhinagar, I had a very deep urge to make Prof. Sudhir Jain [Director, IITGN] proud of me. I did my PhD from Tokyo University and later I spent one year in the US, but, when IIT Gandhinagar gave me a position, I thought that I have a chance to give myself the best possible label as a faculty in the country.

As a child and a young student, I always wanted to make my father proud, but after coming here, I always wanted to make Prof. Jain proud of me. This has worked in some way to keep me motivated towards my research work.

The second thing that helped me immensely was my international network. Sometimes things fall aligned with destiny. A global collaboration of scientists was made by the University of Notre Dame to

fight this [pandemic] together. They also wanted a representative from India. At that time, only I had a paper published on this virus. So they contacted me and I accepted it as it was a work for a noble cause. Then we were given a lot of attention from the media, perhaps because of the research being spearheaded by an IIT Professor and they started covering our work. IITGN was featured as one of the contributors to this global collaboration of the scientific community. After a few weeks, I started getting calls from the media personnel about the result and progress. At that time I thought that if I do not come up with a result it would be very embarrassing (said laughingly). Yeah, so maybe all this motivated me to continue my research on the SARS-COV2 virus, even in difficult times.

How did you come up with this research idea and how sure were you about the process?

Sometimes, not knowing is a bliss. When we started, we did not know many things about the enrichment method and the processes involved in testing. As we went on, further challenges came up. I believe in jumping into the water to know if we will swim or sink rather than making a list of challenges about to come up and thinking about the solutions. The latter seems a waste of time to me.

When I took the sample bottles to the Gujarat Biotechnological Research Centre (GBRC) for the first time, they denied analysing it even though they had promised earlier. At that time, they had a lot of samples to be tested and could not test my sample on priority. I could not do anything but asked them to keep the sample with them because I could not take it with me to the campus. Two weeks later, I received a call from them saying that they are ready to

analyse, but I knew that we needed a fresh sample. We went back and brought a new sample, after analyzing this, I also analysed the sample which was two weeks old kept at room temperature. Now my paper contains a comparison of two samples. This was not planned by me, but it happened because they denied me for the first time. From this we could also prove that the samples can be stored at room temperature where previously people thought storing at 4 °C was mandatory.

“

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”

Can we know what your typical day looks like when you are not in your research lab?

My typical day starts at 4:30 AM or 5:00 AM because from childhood, I never could sleep for more than 5 hours. My father lied to me that a person needs just 5 hours of sound sleep. And from almost my 7th grade, I slept only for 5 hours! Now my system has been set and I wake up in the fifth hour no matter what time it is. If I sleep at 11 pm, I leave the bed at 4 or 4:30 in the morning.

From 5:00 to 7:30 AM, I generally do my editorial responsibilities because I am a guest editor or a part of the editorial board for many academic journals. I also write some emails and make social media posts at this time, because these tasks need good concentration levels as they will be read by many people.

I am a typical Cancerian - I do not like to go out but once I am out, I start

enjoying myself! I like arranging my bookshelves and my surroundings. Sometimes I cook for my children for breakfast. As far as my hobbies are concerned, I have my list on Netflix. I do a lot of research to put things on my watchlist! Whenever I watch a movie, I tell myself "*hey look I am giving you movie time so don't complain while I work*". It's my own way of training myself to give my best while working.

I also like to program and tune myself and so I write a diary. I also love to write about my papers, how many are under review or revision or preparation or even about the next idea. I do this on my weekends or any other free time. People count their money, I count my papers! I already have planned 30 papers for this year and last year we could cross over 50 papers in the Covid times!

“

I am a typical Cancerian - I do not like to go out but once I am out, I start enjoying myself!

”

Your study is the first in India. It is the first proof of the capability of wastewater surveillance of the novel coronavirus disease in the country. How do you feel about it?

It has brought me onto the National scene. Recently I was invited to give an interview to a panel on Rajya Sabha TV. I could see my family and my parents were very much elated. Though nothing much has changed in my living style or my day to day activities, I get a lot of attention if I tweet something or if I write something. It seems as if more responsibilities are attached to me. My papers are read and looked at with much more seriousness so I check thrice before writing something (said laughingly) So, to be honest, it seems like a lot of burden, but I feel very responsible to lead the group at the same time as I was the first to set the proof for my theory. So all this feels

good, getting the award and using the money to buy a new iMac (said laughingly). But I would say that if I had not been at IITGN, I would not have enjoyed all this. Today I feel happy and proud as my work is now recognised on my campus. As I give this interview, I feel the worth of taking that risk that day!

**PROF. MANISH KUMAR,
FOR TORQUE MAGAZINE**

“

People count their money, I count my papers!

”

OPINION PIECES



An Essay Writing Competition was organized by the Technical Council on the occasion of Republic Day. The following topics were given to the student community:

AI and Biotechnology: Ethical, Economic, and Political considerations for the future

Climate Change: Policy and Practice

Should there be limits to freedom of speech?

Is HealthCare a right or a commodity?

Winning students received amazon gift vouchers worth Rs.1000 each.

The winning essays were submitted by:

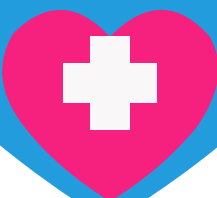
1. Topic - Is HealthCare a right or Commodity

Winner Name - Parichay Thakore
Winner Name - Yash Kamble

2. Topic - Climate Change: Policy and Practice

Winner Name - Aman Raj

YOUR HEARTBEAT CHANGES AND MIMICS THE MUSIC YOU LISTEN TO. MUSIC SLOWS YOU DOWN OR REVS YOU UP DEPENDING UPON THE TEMPO.



Is HealthCare a right or Commodity?

by *Parichay Thakore*

Public Healthcare is an important feature of all countries' infrastructure today. Healthcare facilities and services help the citizens in battling and fending off deadly infections, accidental and deliberate injuries and non-communicable disorders to expand the average lifespan and improve upon the quality of life people are leading. Events that cause significant harm to the body, that could not be treated by the application of domestic remedies alone, and therefore, it becomes inevitable that everyone at some point of their lives desires a solid medical infrastructure to deal with their problems. There has been a considerable amount of debate regarding the status of healthcare and the services medical professionals provide amounts to a publicly guaranteed right or a commodity that its customers need to purchase. A major





example of this would be the establishment of the National Health Service (NHS) in the UK.

Every debate has a context, in this particular case, we need to look at the American case. In almost all other nations, free or cheap public healthcare is provided to the citizens, albeit through a very broken system in countries like India. Therefore, the case primarily addresses issues of public policy rather than ethical issues. Summarizing the commodity argument, there are two main points that are raised:

“Medical professionals are relatively highly paid, and medical education and research is extremely expensive. Therefore, there would be a massive burden on the public exchequer. Therefore, we must charge the citizens for their use.”

“Free healthcare will incentivize citizens to neglect their own health. Rise of non-communicable diseases is due to poor diet and lifestyle among people and is a major cause of death nowadays.”

Let's examine each of these points. In this essay, I will try to argue that these concerns are the byproducts of implementation, rather than public health itself. After that, I will put forward ethical reasons for the welfare of citizens through cheap and universally accessible public healthcare.

“Free healthcare will incentivize citizens to neglect their own health. Rise of non-communicable diseases is due to poor diet and lifestyle among people and is a major cause of death nowadays.”



It's entirely true that poor lifestyle choices like fast food, intoxicants, lack of exercise, adherence to safety norms and hygiene promote health risks.

Take the example of the USA. Over 31 percent of the population is obese, another 39 percent is overweight. Fentanyl and Opioid addiction runs high and wide. That means over 70 percent of people carry several complications like high bad cholesterol, diabetes, overexertion of body frame, hypertension, mental health issues, too high/too low blood pressure, poor joints, weak lungs, hypernatremia, body image issues etc. Thus, they would be a burden to the healthcare system. However, these problems, like malnutrition in India, occur disproportionately among the poorer sections of the society. Contrary to the point, these issues actually highlight how for-profit healthcare could potentially destroy societies. From fast food and cola companies funding medical research to essentially bribe experts into telling the populace that their products are safe, to strategic consulting firms promoting therapy as a marketing strategy so that more and more people buy antidepressants and their clients, the pharma companies make profit, essentially leading to the current drug addiction situation in the US, to extremely overpriced drugs which are essentially rebranded, re flavoured and repackaged version of old drugs, produced after years of bureaucratic paperwork encouraged by established companies to subdue new competitors (contrast this with India's experience with generic drugs and its status as a biotechnology powerhouse and a mass producer of affordable drugs).

Public sector intervention would have avoided those problems. Stern regulations don't work, because they benefit the Big Pharma who can afford the paperwork. All while legit inventions like GM crops are caught in a political mess.





“Medical professionals are relatively highly paid, and medical education and research is extremely expensive.

Therefore, there would be a massive burden on the public exchequer. Therefore, we must charge the citizens for their use.”

Life saving treatment for particularly severe conditions, as proved by the current coronavirus pandemic, can be expensive enough for most of the bearers. While the taxes are mostly borne by those who could afford the treatment. Detractors often point to insurance as a solution, but insurance is often restrictive and doesn't cover enough costs when chronic treatment is required (after all, they also have to remain profitable). People on the lowest rung of the society often have insecure sources of income, therefore are often not qualified to be availed insurance services. Therefore, health services are a requisite part of their welfare. Private medical education is atrociously expensive everywhere in the world. To counter that, Indian government has expanded the number of available seats for public medical colleges. Several means-cum-merit based scholarships also exist, however, ultimately, the government needs to deal with this monopolizing cabal with an iron fist if it really wants the costs to go down. Considering healthcare as a right and the domino effect expensive education has on the morale of doctors would provide an actual ethical reason and justification for the government to decide the profit margins in this industry, and make them more humane.

Several private medical institutions, drug manufacturers and hospitals already exist in the country, and provide excellent service to their customers. Private players act as disruptors, and bring forward new innovations that can change the prevalent medical procedures drastically. Indeed, they deserve excellent benefits.

However, if a public-private partnership model that could bring down the charges faced by the consumer through subsidies, donations, grants, nonprofits and endowments, it greatly helps both parties. Most importantly, it creates an atmosphere of trust for the patient. In a private setting, many-a-times the patients cast doubt at their doctors or pharmacists, suspecting them of prescribing unnecessary tests and medication in order to earn more both from fees and commissions. On a considerable number of occasions, this turns out to be true. In a public service model, this doubt is eliminated and the quality is judged totally on the outcome and the facilities provided by the third party.

We need to understand the ethical grounds for the implementation of universal healthcare. On several occasions, the patient has no control over his/her circumstances that lead to him/her needing healthcare beyond what (s)he could afford. A major accident, birth defect, genetic abnormalities etc are essentially out of control at this point of time. The treatments for such are above what most people could afford. In this scenario, denial of treatment for monetary reasons becomes a contravention of the person's right to life, and reflects poorly on the society as a whole. In absence of the belief that healthcare is a right and not a commodity, the medical service providers can't also be blamed for this situation arising. Keeping all this in mind, it won't be foolish to state that treating healthcare as a right rather than a commodity or service to be bought and sold can elevate the overall security and standard of living in the country.

In conclusion, I will put my argument to rest with this essay that Healthcare is indeed a right, and should be provided to all citizens for the development of the country.





That being said, there is no essential need to prohibit private players at any level within the system, and they would foster life changing and ground-breaking innovations. Overall, a societal outlook mandating healthcare as a right would greatly advance the cause of human progress.



in promoting the general, physical, mental health and well-being of people around the world. An example of this was the worldwide eradication of smallpox in 1980, declared by the WHO as the first disease to be completely eradicated by deliberate human interventions. This just goes on to prove how much the healthcare industry can influence the welfare of mankind. A well-functioning health-care sector is therefore a prerequisite for a well-functioning economy.

Globalisation and Industrialisation has led to privatisation of many sectors of an economy. The healthcare industry is not an alien to this invasion of corporate force. A repeated notion strongly (though with subtlety), put forward by the leaders of the private healthcare sector is that healthcare, just like other consequences of privatization, is a 'commodity'.

The very first problem encountered in the distribution of good healthcare services is that there is a problem of supply. The level of sophistication needed to provide healthcare services is too high for it to be abundantly available that too at an affordable cost. Doctors go through rigorous training for years before treating a patient. It takes a huge amount of investment on their part too, for being able to equip the right skill set for treating patients. Hence, due to market supply and demand forces keep the prices for healthcare at a higher end. From a moral perspective when we say that we must ensure that there is affordability for each and every individual to get access to healthcare services, we must also ensure that people providing these services are adequately compensated.

Compensating providers is just a part of the net price; there are many other administrative costs as well.

However the caveat should be the word basic necessities and defining what classifies as basic healthcare.



Is HealthCare a right or Commodity?

by *Yash Kamble*

The United Nations' Universal Declaration of Human Rights classifies access to healthcare as a human right. Seems like a straight answer to the topic of the essay right? Actually, the problem does not lie in the definition of human rights, rather it lies in the interpretation of its meaning by various economies.

An efficient healthcare system can play a significant role in shaping a country's economy, development and industrialisation. Health care is conventionally regarded as an important determinant





Just like subsidized food wouldn't entitle receivers to world-class biryani and caviar, subsidized healthcare wouldn't mean world-class healthcare and free cure of cancer.

In principle, the idea of a particular service or product being treated as a commodity is not bad at all. However, free access to good healthcare services should be considered as a fundamental human right. When I say that it is a fundamental right, I do not just mean that everyone should be allowed to have access to healthcare services as long as they pay for it. However as a morally responsible society, we should decide to provide basic minimum services to everyone who needs them, so that they don't struggle to merely survive.

One other perspective which criminalises the idea of commodification of healthcare is that certain types of services are connected to the integrity of a person. Buying and selling such services is an attack to the dignity of humankind itself. Furthermore, creation of markets for purchase of such services promotes perverse incentives in the minds of people providing these services. Allowing establishment of such markets is an act meant to violate the integrity of a human being. It is due to this reason that buying or selling of human organs is considered as a criminal offense all around the globe.

Seemingly obvious, to some people, privatisation of the healthcare sector may not easily fit into the perspective mentioned above. The usual argument given against commodification of healthcare services is that medical care should be distributed according to need and not on the basis of someone's ability to pay.



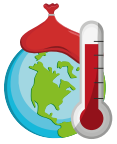
Now there is an incendiary idea that lies in the statement above. The notion of need for healthcare and someone's ability to pay should not be considered as two separate entities. One can be in need for medical care and at the same time be self-sufficient to pay for it. Now the natural question to arise is *"What about the people who are in need of healthcare but are in no condition to afford it?"* The existence of poverty cannot be considered as an argument for socialised medicines just like it cannot be considered as an argument for socialised food. It is an argument for income support and poverty alleviation policies. The poverty argument fails to capture an important aspect of healthcare which is different from other poverty issues.



The important difference between food & clothing versus healthcare in case of poverty ridden families is that it is extremely easy for a person to judge when his stock of food will run out. On the other hand, the need for healthcare can arise suddenly. Say, a poor family staying near to the coastal region is struck by a sudden need of food. There is no surprise element to the need for food in this case. But what happens when the same family is struck by a tsunami and people get injured. A disaster can strike any time. A pandemic disease can strike any time. Nobody can predict when they would be in need of medical care. Even the most prudent person in the world may not be able to set aside an appropriate amount of money to pay for his or her medical care when such a situation presents itself.

This is why unlike food and clothing, there is a need for insurance agencies for healthcare. It is this uncertainty in the need for medical services that drives the market for insurance policies. In the USA, healthcare is almost exclusively



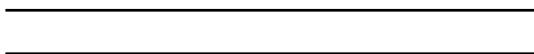


paid through insurance services provided by highly diversified health organisations. The total expenditure statistics of national healthcare of the United States suggests that 68% of health-care expenses are on professional services, hospital care and prescription drugs. While government public health activities and medical equipment expenditures only amount to 6%.

Hence markets for health insurance evidently are a subject to a variety of problems.

Like every other product, insurance claims have an expiry date. Quite often it's seen that the insurance agencies pose questions in order to stall your claim and push it past the expiry date. Sometimes, there is unclear documentation which hazes out what kind of problems the insurance covers. Focusing on the role of insurance also shows how misleading it is to put emphasis on the principle of distribution according to need rather than ability to pay. All insurance systems, whether public or private, distribute resources according to need. Car insurance provides new cars to people who 'need' them, i.e., those who just totalled their old ones. Fire insurance provides new houses to people whose old ones burned down. But in neither case is state intervention necessary.

Thus it does not help the case of public provision of healthcare services to appeal to the principle of distributive justice. I believe that if we speak as though health care were a pure public good in our society it will make it all but impossible to distinguish between objectionable and unobjectionable forms of privatization.



Climate Change: Policy and Practice

by *Aman Raj*

**“The Earth has enough
resources for our need but
not for our greed.”**
- Mahatma Gandhi

Sun is considered as a ultimate source of energy of the whole world. The nature treats 'sun' as the greatest medicine. Now have you thought how long this medicine is going to last ? Most probably, not for many days since we humans have imbalanced the ecological system and playing with nature without sensing that we are inching slowly towards death. The cause would be sun and effect will result in disease, destroying our immune system, temperature hike etc.





Imagining this situation will certainly shiver one's body. It is the result of mankind's deeds who has forgotten everything in his pride. We are a small creativity of the nature but we are challenging the creator through our development. The mankind has broken the agreement between us and the creator. This has led to a global threat of "Climate Change".

Climate change is a indicator of change in Earth's atmosphere and its components. It has become a worldwide problem today. Climate change is actually variations in many aspects like sudden season change, failing of crop cycle, extinction of plants & wildlife, famines, droughts, storms, spike in temperature, increase in sea level, frequent floods etc. The economy of a country suffers depression which hurdles the development factor of the country.

Melting of glaciers are a very sensitive indicator of the climate change. They are melting slowly resulting in increasing sea-level and decreasing glaciers. Some countries are making walls but don't think that the walls would prove dwarf if melting continues. There will be no islands left also.

Radioactivity decay has resulted in water pollution by developed countries. The problem of armament has increased use of tanks and atomic weapons. It has led to dumps of garbage causing soil pollution.

Greenhouse gases play a crucial role in climate change. Greenhouse gases such as CH₄, CO₂, etc, absorb the infrared solar radiation and help in maintaining the Earth's temperature. Increased greenhouse gases beyond the limit especially after Industrial Revolution resulted in global warming. Recent trends of burning 'Parali' in western parts of the country has contributed a lot. CFCs from refrigerators, air conditioners and perfumes deplete the



thickness of ozone layer. It causes skin diseases and sunburns of UV rays. It has happened due to increasing complexity in lifestyle.



Rapid industrialisation has increased the Air Quality Index (AQI) to a threatening level. The air has become toxic leading to acid rain. To meet the population demands, green fields are set onto fire and are being turned into concrete buildings for a better lifestyle. Abrupt and reckless use of natural resources has increased the pollution beyond the control extent. It has become carriers of many diseases such as heart attack, asthma, bronchitis, headache, etc.

The world's largest greenbelt "Amazon rainforest" is destroying at a rapid speed which account for house of 70% biotic species. Himalayan vegetations are also facing such danger. These vegetations are home of plants of medicinal values like "Sanjeevan Booti". The trees help in maintaining the bank of the river. Trees are said to be "Green Gold". 33% forest cover is needed for a balanced environment. A UN report says that in tropical climates, forthcoming years will see extinction of about 700 plants. Some species are counting their last days. Plants and wildlife are interdependent on each other. Destroying any one will lead to natural disturbance in food web. Deserts are expanding resulting in frequent famines.

Consequences of the climate change and global warming in 20th century brought United Nations and the other world organisations to focus on the safety of environment. Vienna conference (1987) focused on depletion of ozone layer. Some policies were discussed which were introduced globally.





A pact was signed in Montreal Summit (1987) took place. Many countries emphasised to take up immediate steps on the climate change globally. World Meteorological organisation (W.M.O.) and United Nations Environment Programme – Intergovernmental Panel on Climate Change (UNEP-IPCC) . This organisation plays a key role in handling the policies of Climate Change globally. Almost, about 200 countries are the members of IPCC. The main objective of IPCC is to observe and specify the dangerous consequences effects and address the ways to tackle climate change. It creates a report on the findings and publishes scientific report. IPCC was awarded Nobel Peace Prize in 2007 for it's contribution.

A conference on climate change in Japan (1997) came out with Kyoto Protocol which ensured each participant countries to decrease the temperature by 1.5 degree Celsius. The Rio De Janerio , Brazil Framework Convention on climate change passed a proposal for each country to cut greenhouse gases product by 5%. The developed countries need to extendsome support to developing nations. They should act as a role model. They should take the first step to leap forward and create awareness.

To encounter this problem a clean development system needs to be developed and for this, the theory of Carbon Credit was introduced in November 2007. Over the years, the climate change issue is being focused in many conferences. In 13th ASEAN Summit, the topic included “Energy and climate change for sustainable development”. The “Paris Climate Pact” was signed by about 190 nations in 2016 to reduce carbon percentage and global temperature. However, no significant changes in this direction has taken place.



Undoubtedly, climate change has become a global issue today. It seems extremely difficult. But if we have consistent devotion and willpower, then our continued efforts will certainly give fruitful outcomes. Efforts need to be done on a global basis but the first effort needs to be done at personal and community level.



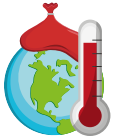
“Arise, awake and stop not till the goal is reached.”

– Swami Vivekananda

Development and environment are not opposite of each other, in fact they are complementary of each other. The quality of life is dependent on healthy environment development is dependent on natural resources. Development is necessary but natural resources should be used in a sustainable and balanced way. We should use them judiciously. It is also necessary to use natural resources without destroying the nature cycle in an eco friendly manner. Population control also needs proper attention and awareness to meet increasing demands.

To maintain the beauty of our earth, it is the need of the hour to come out of our selfishness and save the environment. Earth is the only planet which supports life. It is a matter of happiness that many countries and NGOs have come forward to take initiatives make the blue planet a better place to live in and decorate the nature with it s charm once again. Particularly, the developed countries should make a fund to help the developing countries to tackle this global cause.





Using energy saving devices, renewable energy resources, plantation drives, stopping poaching, treating industrial effluents before running them in the mainstream. These would certainly help our forthcoming generations to gift them a healthy environment. Climate change should not be an issue of debate. We should learn from our culture.

Movements like “CHIPKO ANDOLAN” needs to be initiated again. Certain strict policies regarding the environment should be framed by the government. The main aim is to provide safety or bring up new forests and increase the vegetation cover governments programmes like “Krishi Vaaniki” are useful in shaping the greenery of nature. These initiatives would help us in a longer run for better future. Awareness needs to be created.

The main cause of imbalance is our view point towards nature and the view-point of government towards development. We have so deeply engraved ourselves in Western culture that we are forgetting our own culture and our values with environment. We should develop, but not by competing with nature and resources. This does not mean that we should not progress with science and technology. We should progress but by using the natural resources judiciously for a sustainable environment.

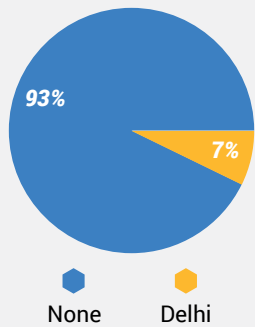
Our dreams and visions would only be explored if we have a healthy environment to live in. We will have to return to our culture to save the environment for sake of the mankind.



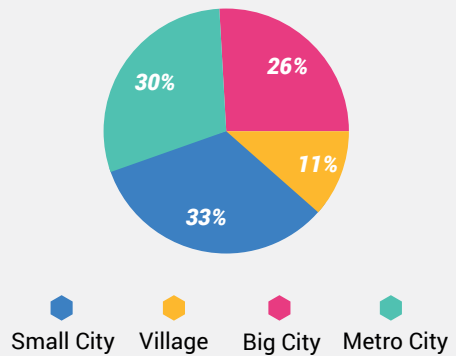
GO GREEN !
“REDUCE , REUSE , RECYCLE”

B. MAPPING THE GEOGRAPHY PROSE

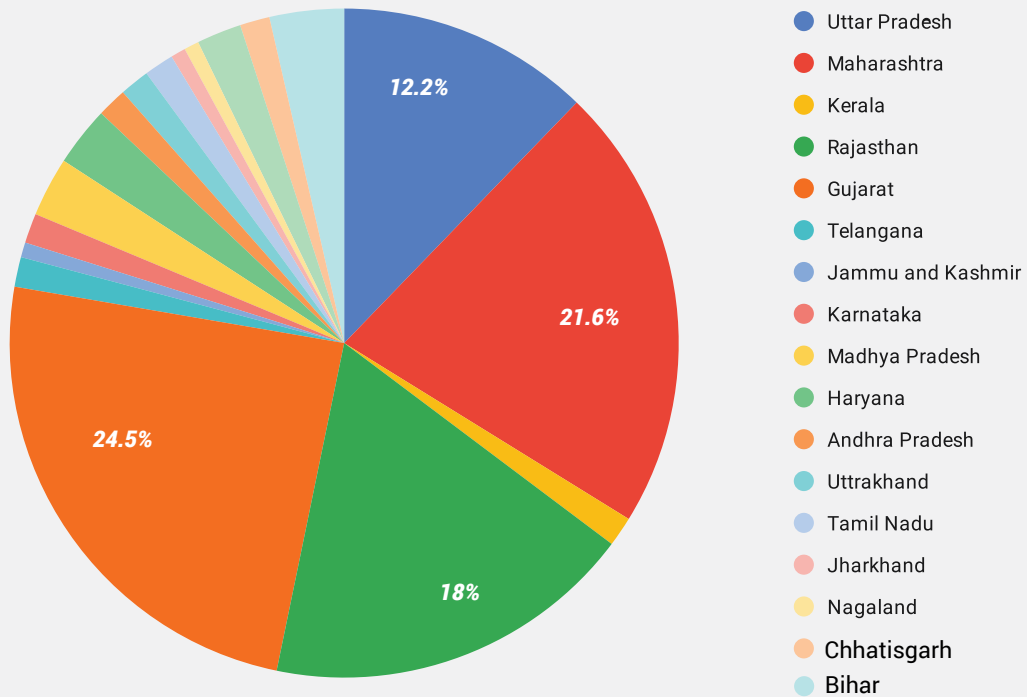
Do you represent any of the Union Territories?



Where do you come from?

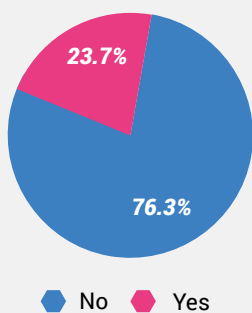


Which State do you represent?



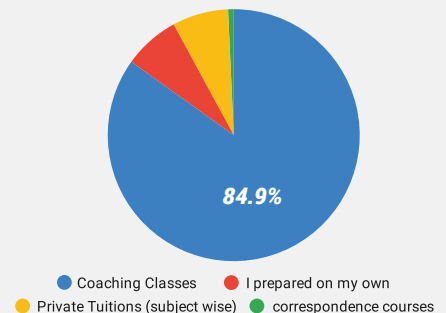
C. THE JEE - FORCE

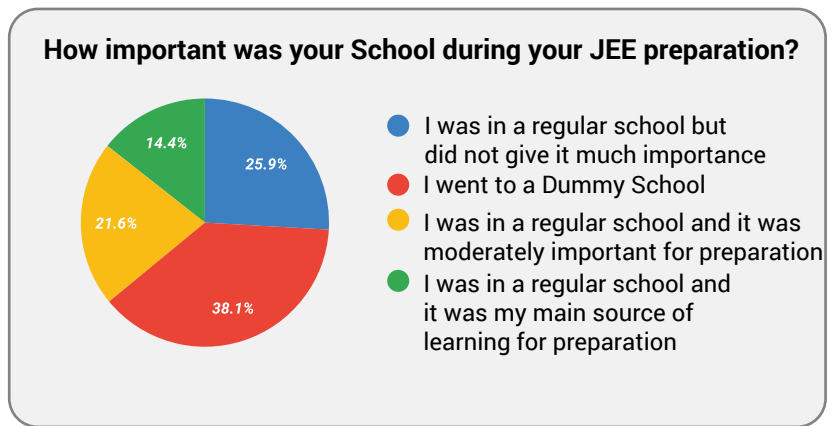
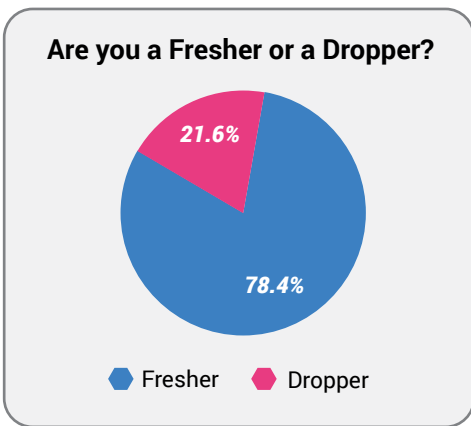
Are you a First-Gen College Student?



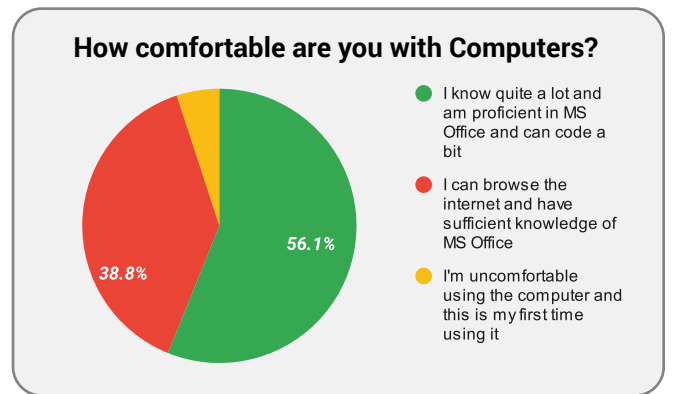
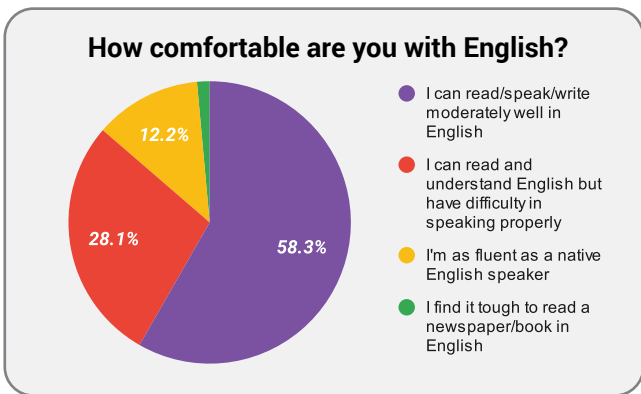
A first-generation college student is defined as a student whose parent(s) /legal guardian(s) have not completed a bachelor's degree. This means that you are the first person in your family to attend a four-year college/university to attain a bachelor's degree.

How did you prepare for JEE?

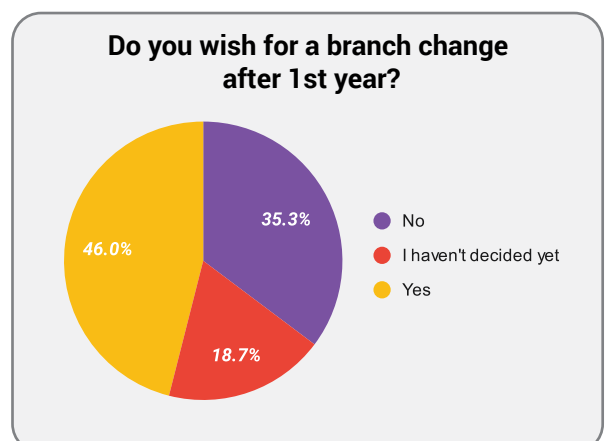
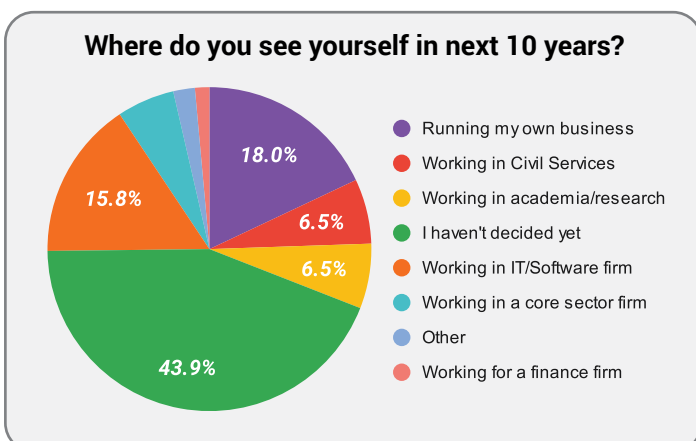
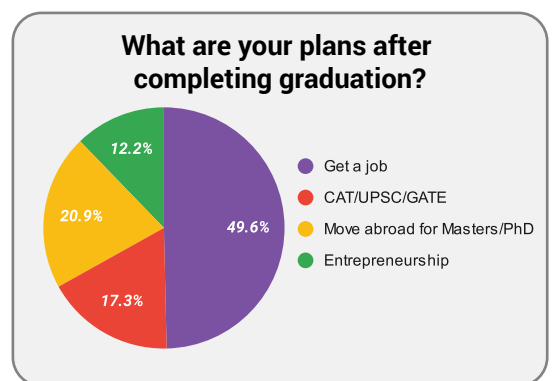
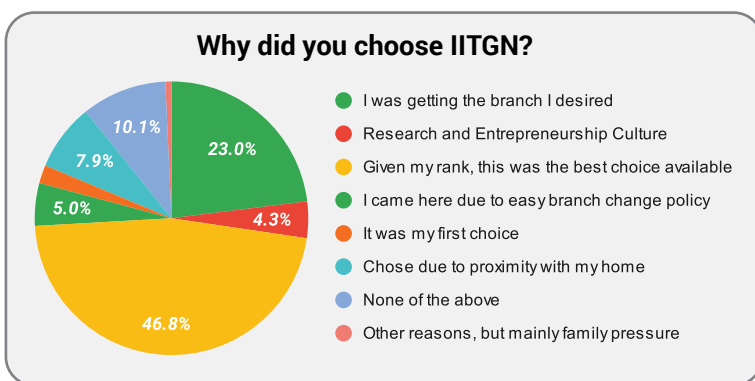




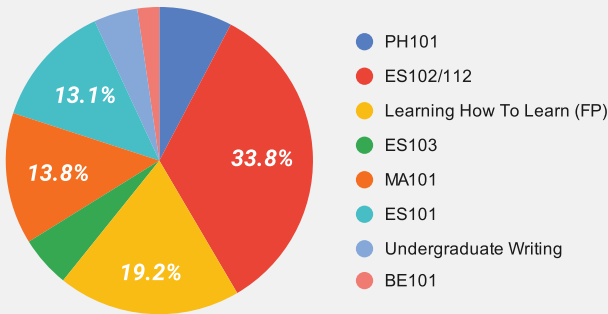
D. PRINTF('HELLO, MY NAME IS...')



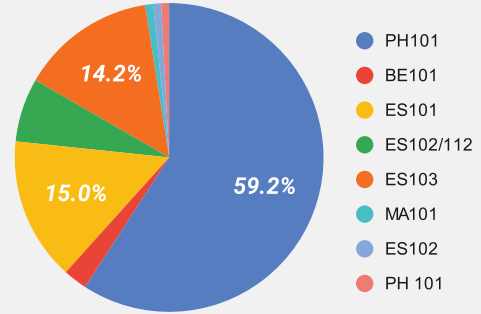
E. IITGN: NOT 'FOUR' YEARS BUT 'FOR' LIFE!



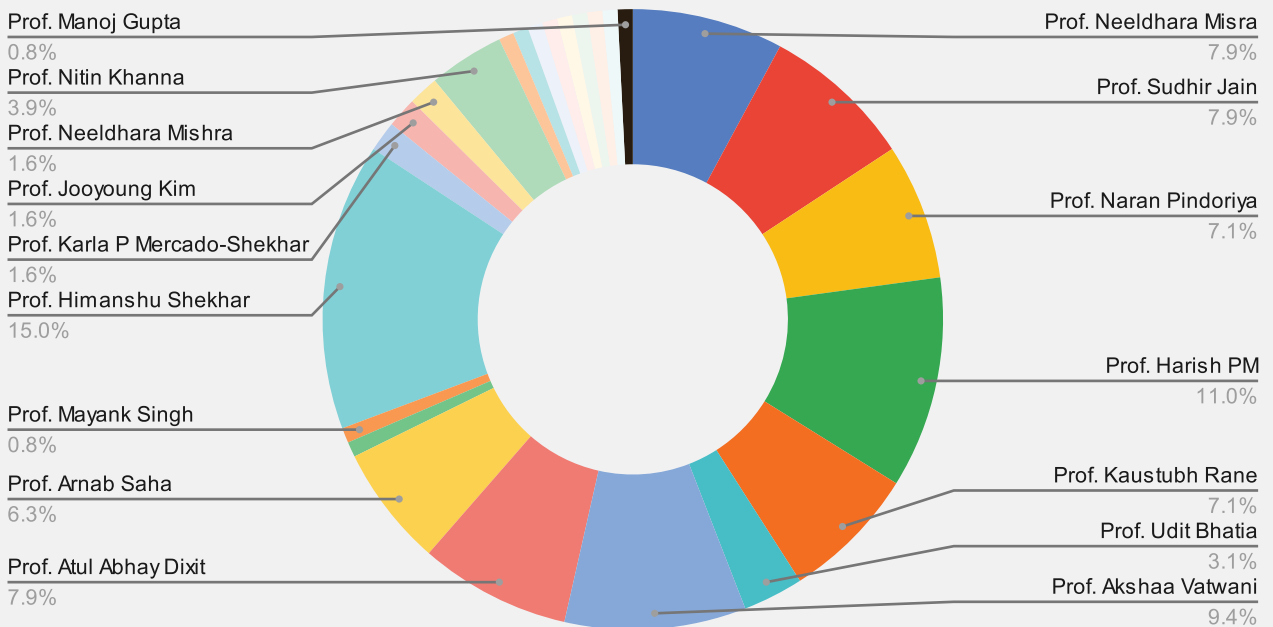
Which is the most interesting course you've taken till now?



Which was the most terrifying/difficult course you've taken till now?

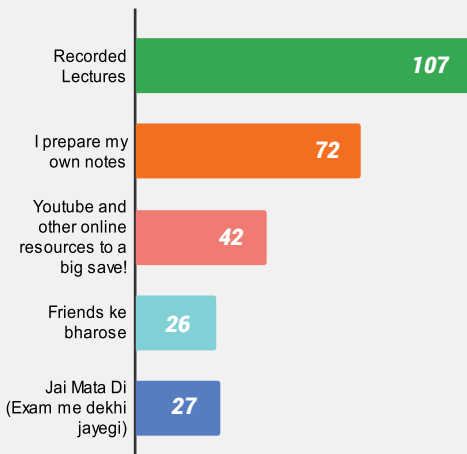


Who is the most interesting Professor at IIT Gandhinagar according to you?

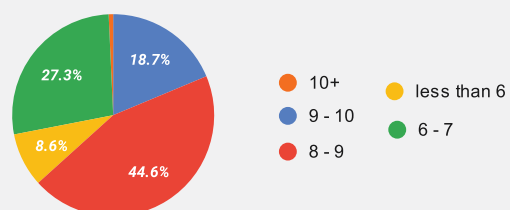


F. DEAR EXAMS, PLEASE BE NICE TO ME!

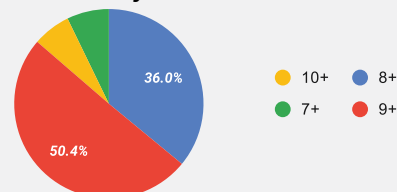
How do you study for exams?



What is your CPI currently?



What's your aim for CPI this sem?

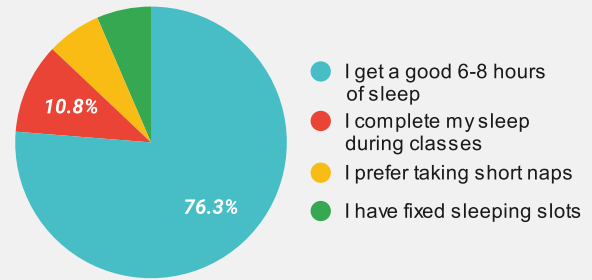


G. ADULTING 101

What do you do in your free time?



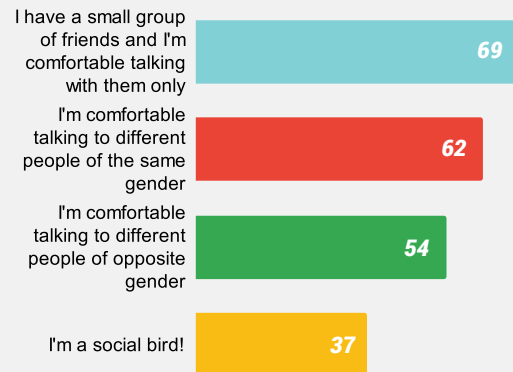
How is your sleeping pattern?



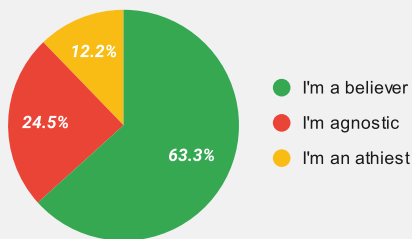
What are your Hobbies?



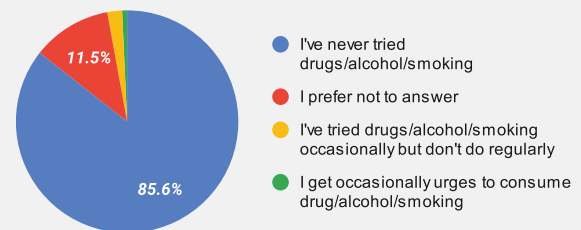
Which of the following do you relate with?



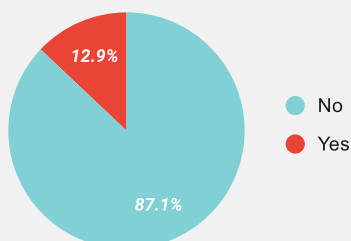
How do you characterise your religious beliefs?



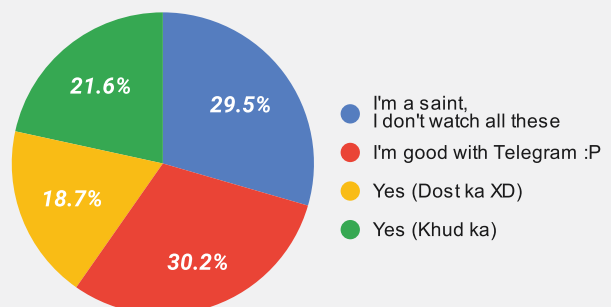
Which of the following statements on drug, alcohol and smoking do you relate with?



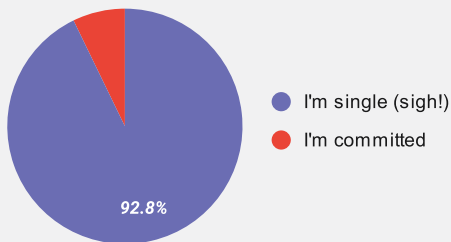
Have you ever travelled abroad?



Do you have an account on Netflix/Amazon Prime/Hotstar?



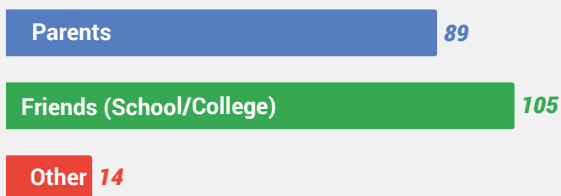
Are you single or committed?



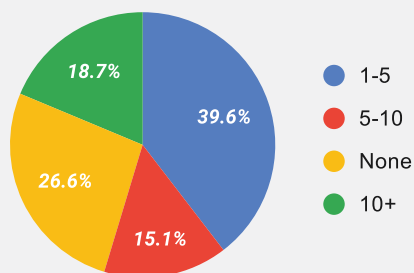
What is your aim right now? :P



Who do you turn to confide your thoughts/emotions/struggles?



How many series have you binged watched until now?

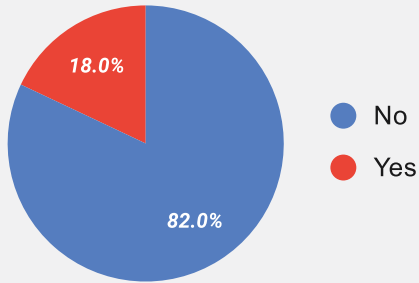


Name the most popular Senior (Boy or Girl) that you have heard of in college?

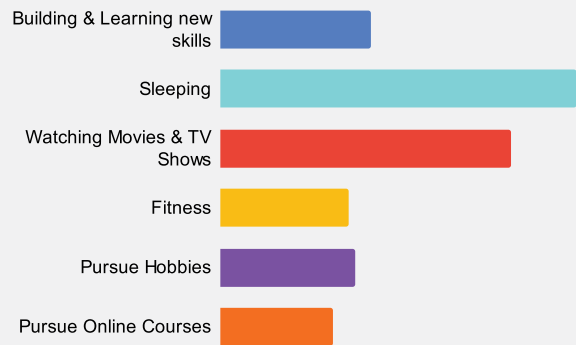


H. LOCKDOWN TALES

Did you or anyone in your family get exposed to or contracted COVID19?

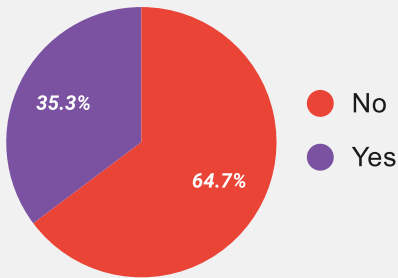


What did you do during Lockdown?

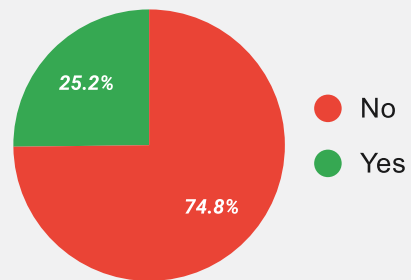


I. CAMPUS CALLING!

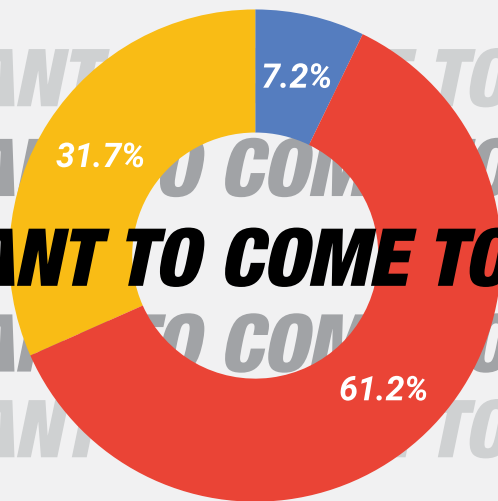
Have you ever been to Gandhinagar or Ahmedabad before coming to IITGN?



Are you on campus currently?



DO YOU WANT TO COME TO CAMPUS?!
DO YOU WANT TO COME TO CAMPUS?!
DO YOU WANT TO COME TO CAMPUS?!
DO YOU WANT TO COME TO CAMPUS?!
DO YOU WANT TO COME TO CAMPUS?!



● No ● Hell Yes! ● Yes

THAT'S ALL FOLKS!



JAYESTHI MALI



SHWETA

DOODLING



HIREN SOLANKI



RITUPARNA JANA



3rd SHREYA SHUKLA

1 SAMIKSHA



CHITKARA



KRISHNA



BUKUNMI

COMPETITION



**st
KAMBLE**



**2nd
ASMA VINDHANI**



OMLAR SINGH



EKTA JAISWAL

dialogues with ANAND PANDEY

MR PANDEY IS ASSISTANT MANAGER (COMMERCIALIZATION) AT THE INNOVATION AND ENTREPRENEURSHIP CENTER (IIEC) AT IITGN. IIEC IS A TECHNOLOGY BUSINESS INCUBATOR. IT IS A SECTION 8 COMPANY PROMOTED BY IITGN TO FOSTER TECHNO-ENTREPRENEURSHIP THROUGH INNOVATIVE AND CREATIVE THINKING USING AN INTERDISCIPLINARY APPROACH

Mr Pandey is a Technology Commercialization Professional with six years of experience in ecosystem development for technology business incubation and start-up promotion. He has been involved in various initiatives of the Department of Science and Technology (DST), Govt. of India, to promote techno- entrepreneurship and innovation clusters.

Good afternoon sir, greetings from Torque magazine. In this edition, we have decided to have a special mention in which we highlight IIEC, the Innovation and Incubation Centre of IITGN, so we would like to get some insight into it.

To start, Can you give us a brief about IIEC, its mission, and its undertakings.

Thanks, Nimit. This is an excellent initiative by TORQUE magazine highlighting IIEC. We've seen a growing interest in entrepreneurship among students in the last couple of months, and this interview will help propagate the idea of IIEC to many more students interested in entrepreneurship.

IIEC is the arm of IITGN to promote entrepreneurship among the students, alumni, faculty, and anybody from outside. So anyone who has a good idea can approach IIEC for support.

We are an incubation centre supported by the Department of Science and Technology (DST), Government of India; Department of Industries, Government of Gujarat; and various other ecosystem players.

The objective is to support and nurture entrepreneurship among the students and identify promising entrepreneurs. We help the entrepreneurs identify the real business challenges and work on them to take their product to the market, impact society, and for the various stakeholders, be it investors, mentors with the start-ups, and employees of that start-up.

How many start-ups are currently incubated under IIEC? How many of them have been successfully established?

Over the past four years, we have supported more than 25 start-up companies. Many of them have graduated, raised funds and are into the revenue stage doing quite well! So the overall success matrix is quite diverse.

The Incubation Centre is in different stages and levels. Some of them are at the ideation stage. Some have developed their products and are validating them - taking market and customer feedback. Some are actually in the commercial ideation phase, selling their products to the customers and scaling up!

Once the idea is validated, we support taking that idea for commercialization - identifying the customers, doing market research, creating a business plan etc. We will help you get funding for your idea, early customers, networking with investors etc. Then you proceed to the next stage.

For us, it is the success. We have helped several start-ups over the past four and a half years now who have pursued and reached the next level, where they have raised external funding from the venture capital firms. Or, even if they have not raised funding, they are successfully running their businesses.

To give some statistics, we have helped at least seven start-ups raise around 1.5 crores. And when I say funding, it is not just from venture capital firms or external financing; it's funding from various government sources as well! By utilizing this 1.5 crores, these start-ups have generated revenue of more than 7.5 crores creating employment opportunities for more than 100 people! Mind you, these are just seven start-ups that are at the revenue stage. I am not counting the start-ups at the early stage of product development or proof of concept!



That's great, Sir! Were there any challenges faced by IIEC and the start-ups incubated there during the lockdown period due to Covid-19? How did everyone manage to overcome those challenges?

Of course, we were not ready for many challenges at the beginning of the lockdown. But as time progressed, we created sustainable systems to overcome the difficulties.

For example, in the beginning, several start-up founders were staying on the campus, and the biggest challenge then was to go out of the campus to meet their customers! So most start-ups did several other things to utilize their time well and make the most of the situation by ideating and doing things that could be done in-house.

That was also a time calling for innovations to help the fight against Covid-19. Some of these start-ups tried developing ventilators. One of them collaborated with a company to develop a ventilator prototype. Another team created an autonomous UV based disinfectant system. Another group created a smartwatch that triggered an alarm when somebody touched his/her face multiple times. This way, the start-ups tried to utilize maximum time reading things and doing research which may help the society at large, and as some degree of normalcy returned, they again started working on their products.



This was an opportunity for many of them to just give in. For instance, we have a start-up that works to create content for a lot of industries. And thanks to the lockdown, there was a paradigm shift focusing on making everything digital and online, be it a marketing campaign or reaching out to the customers etc. Thus they got a huge opportunity to create a lot of content for many large, midsize and even smaller companies, and they grabbed it well!

There were challenges for startups working in the infrastructure and real-estate domain as the activities suddenly went down to nil. So it was difficult for them to work, but they continued, and now after almost a year, they are working well, learned a lot of things while they were in lockdown.

Overall most of the start-ups incubated at IIEC continued to work during the lockdown period, focusing more on their product and its validation. They now have a better and more precise articulation of what they are proposing or trying to do and how to do it.

Sir, what support did IIEC provide to the start-ups to help the start-ups combat Covid-19?

I would say human support - which is exceptionally pivotal! We interacted with our students when the lockdown started. We initiated an Entrepreneurial Mindset 101 program for our students and invited most of our startups as guest speakers or included their experiences and journey as case studies for the program.

Whenever there was a need for financing or accessing some lab, we made sure to address those. For instance, one of our teams was working on developing a ventilator prototype and had to meet doctors, medical practitioners and industry experts - this was when everything was locked down!. We did our best to connect them to doctors and practitioners and provide the necessary support.

What are your views on the start-ups currently working in the Incubation Centre regarding the quality of products and services they offer. Are there any of them you think have a high chance of making it big soon?

Big is a contextual comparative. Just to give an example, I am sure that you are aware of Micob, our start-up that has developed a concrete 3D printer. This lockdown period so gave them a lot of opportunities to validate their products. They created the 3D printer on campus and made a lot of furniture currently being used in many places on the campus and other areas as well!. They also worked on creating prototypes for army bunkers. They made a design habitat for workers. They used this time to test their products for different places. They are taking some 40,000 square feet of area outside the campus to start their manufacturing facility. I am sure that in the next couple of years they will be doing a lot of business! They are also in touch with the investors for raising funds.

At the start of the pandemic, we started this program, "Nidhi Prayas". In the first cohort, we selected nine start-ups, comprising of our alumni, current students and even people outside IITGN. They are working on their ideas, and I'm optimistic that by the next one- one and a half year, we will be able to file at least one patent for all these nine ideas. All of them are product based ideas identifying very specific problems in the healthcare, smart manufacturing, IoT and energy sector and look very promising. I'm sure they will be successful in the market.

Sir, do you think that the current Covid situation came as a blessing in disguise for the entrepreneurs?

I indeed believe so! As I mentioned in the example of the content writing marketplace start-up, covid gave them the time to think deeper into the problem they are trying to solve, iterate on their solutions and proposed business models and connect with many people!

One blessing in disguise happened with networking. Earlier, we used to invite mentors from different parts of the country or the world. Scheduling was a challenge, as sometimes they may not be available on the proposed dates and so on. Now with covid, everyone is available online, and we could leverage our mentor pool very well for our incubated start-ups!

Other than this, we also leveraged our labs' utilization, especially Tinkerers' Lab, during this phase. The start-ups working on web-based products were also able to utilize their time well. We also organized several workshops and programs for our students. One of them was called High Growth Venture Program, wherein some of our start-ups and start-ups from different parts of the country participated. It was a three-month program and was quite intensive. Some of the very successful entrepreneur business leaders were made mentors for the team, and they get a chance to interact with them one-on-one. Many mentoring sessions like these followed up! Because of the online availability of the mentors, we leveraged this blessing in disguise to our best!

What advice will you like to give to the budding entrepreneurs - how to get started, how to find their niche, and how to prepare for their hustle of starting their own venture?

If you are interested in entrepreneurship, start and try to fail and learn early and move on without losing enthusiasm.

Your first idea may not work, or your first proposed solution may not be feasible. Entrepreneurial mindset and attitude is that of iteration and learning from each iteration and being better in the next one. Failure is a stepping stone and is very important to experience it in entrepreneurship.

If you want to be an entrepreneur, being at college is the best time to experiment. This is the time when you learn and try and fail. Once you are in professional life, people may or may not encourage you to fail, so here's an opportunity for you to try - give it your best shot and learn!

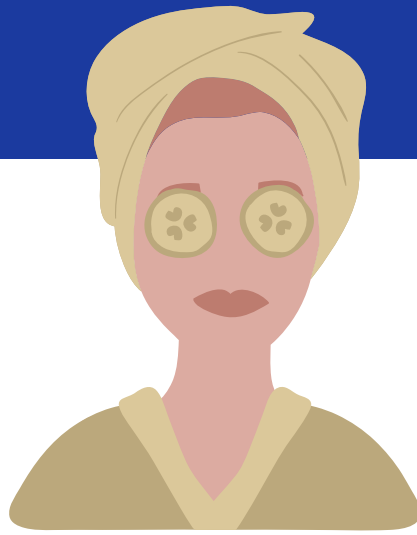
If you see, 7-8 per cent of our alumni have started their own companies. Multiple alumni started a company when they were a student or had just graduated. They failed, then went to corporate, got some experience, learned, and started a company. You need to have that instinct. Whenever you find a problem worthy of solving, find a problem wherein you feel there is a potential for commercialization, and you will do it. But the learning which you had when you were a student, while you tried your first start-up and failed, will aid you immensely when you are working on your idea.

Therefore I would say try and think of ideas, identify problems and we're happy to help you! The IIEC team will provide the necessary know-how, the necessary support in terms of mentoring infrastructure required for you to pursue your idea more systematically.

Sir, it was indeed great talking to you! Thank you so much for taking out time today for this interview.

Thank you. I hope, and I am expecting you to start and keep working on your ideas for a start-up and then encourage others to start!





SKINZYZY

Skinzzy Software Solutions dreams of making dermatology accessible and affordable for every Indian. Our AI algorithm helps diagnose 67 skin conditions, while our platform helps patients connect with certified dermatologists with a single click.

We knew that our idea had potential when our first investor funded us by looking at an early prototype. However, the pandemic forced us into a lockdown on the day we received our first tranche of funding. Our life changed completely. A financial crunch amidst the pandemic made difficult fundraising. The slow cash flow meant that every business decision, such as recruiting talent, building the most accurate AI model and onboarding dermatologists, needed multiple checks and balances. One of our core values is transparency, so we shared an honest account of our funding status with the employees. Changing the business model from booking appointments to delivering online consultations was the

need of the hour. Rather than treating them as mere employees, we treated them as stakeholders to turn the tide. With trust and patience, we rekindled the hope in our employees who went beyond the call of duty to build DermaLens, India's first AI-based skin diseases diagnosis app. Looking at our app, the investors felt confident to invest in us. Further funding has given impetus to our goal of onboarding 2500 dermatologists in two years and catering to 500K patients.

During the pandemic, we learned that our employees are the most crucial asset. We are always looking for people who are passionate about changing the world. Join us in our journey, making skincare accessible and affordable. Download the app, DermaLens, now.



STEP 1

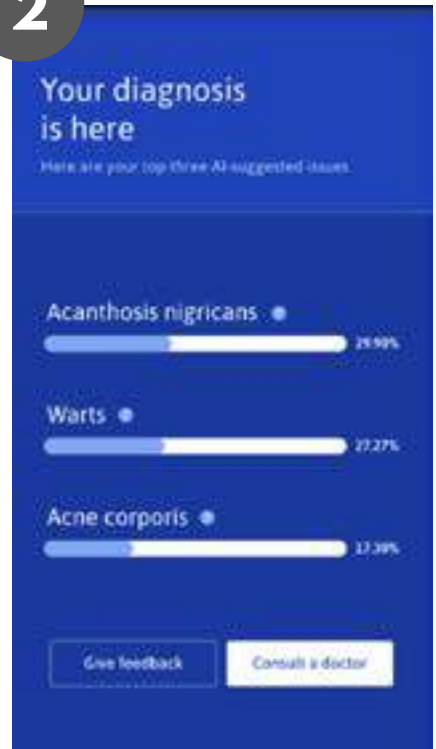


Check SKINZY out now!

SCAN THE QR CODE TO GET A LOOK AT WHAT MAKES SKINZY SPECIAL.



STEP 2



STEP 3

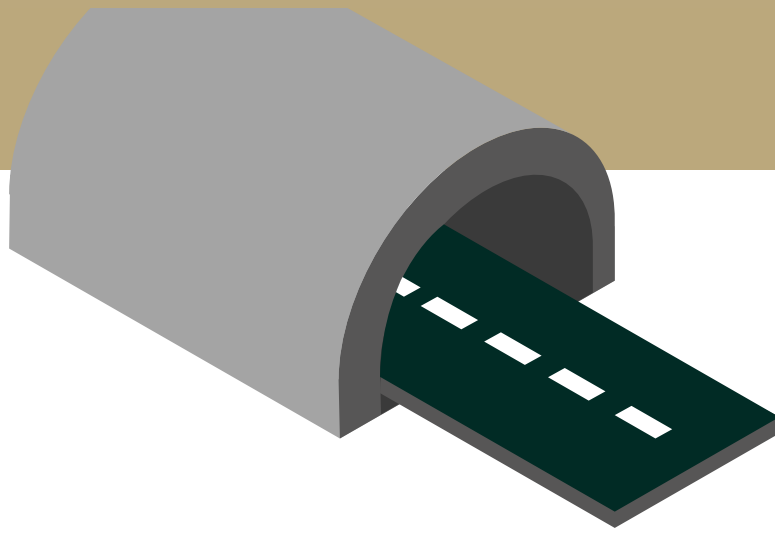


STEP 4



STEP 5





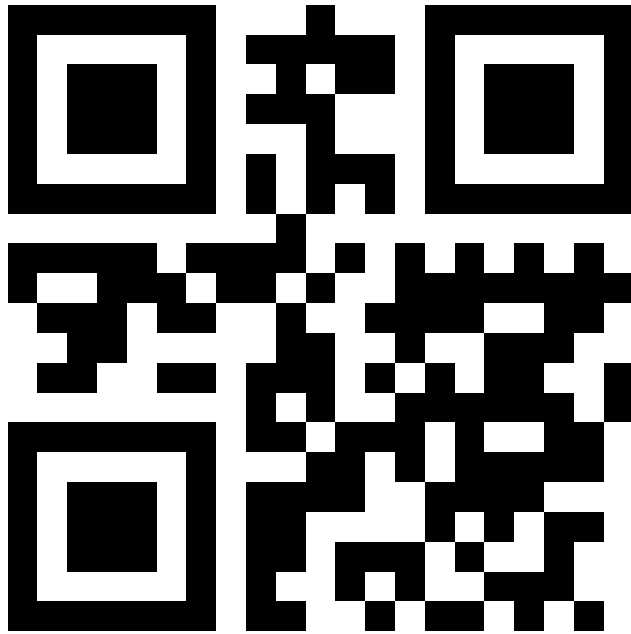
MICOB

MiCoB is an entrepreneurial venture initiated and incubated at IIT Gandhinagar. The company focuses on bringing man-machine integration in the construction segment, using its state of the art 3D concrete printing technology. 3D concrete printing is a novel method which uses fully automated concrete extrusion assembly to perform layer-wise construction of large scale segments. The process results in quality-compliant end products with better control over the rheology and finish of the material. Further, 3D concrete printing is more sustainable and eco-friendly, as it produces 40% less carbon footprint compared to the conventional methods. Besides, the major commercial challenges associated with conventional construction such as cost and time are also effectively addressed using this technology.

The founders of MiCoB have been working on the different aspects of 3D concrete printing technology viz. prototype development, development of in-house, large-scale 3D printer, design of optimum concrete mix for printing, and incorporation of novel techniques of improvement of output quality. The successful results have motivated the co-founders to implement this technology for rapid construction in large scale housing projects.

By the end of 2019, with a well-motivated team, an investment about to close, and a finalised factory site, the company was all set to launch big. However, some microbes in the universe planned to retaliate to this plan of ours. Just before a week of site inauguration, national lock down got announced. Consequently, investments went on hold, cash flow got stagnated and the plans were being shattered. After a month of nothingness and prevailing uncertainties, it was then that the team decided to utilise this time for some good. So planners were re-opened and once again the brain storming started.

Scan the QR code to try MiCOB out now!



After some iterations in the plan we finally decided to act with baby steps rather than waiting for going big at once. With the support from IIEC, grants from Govt. of Gujarat, and our continuous perseverance, we were ready with our own in-house 3D concrete printer, in less than 45 days. It is note-worthy that we started from scratch and all the assemblies, software development and system integrations were performed in-house, without any external or outsourced professional technical support.

3D concrete printing facility developed by MiCob at IIT Gandhinagar. Due to financial constraints, the developed 3D printer was indeed smaller and limited in its capabilities as compared to our initial plan. Further, due to market slow-down, entering the construction business was a near-impossible challenge.

Thus, after a thorough market analysis, we decided to firstly enter the niche market of premium concrete furniture. With its modern and minimalistic look, unique designs and high ease of customisation, we believe MiCoB's concrete furniture would be an excellent choice for the modern décor. Other salient features of our furniture include its long-term durability, low maintenance, no swelling, and resistance to heat, extreme weather conditions, microbial attacks and termites. The company has been successful in delivering its first furniture range (called Legacy) to various independent clients as well as to our esteemed institute (IITGN), and have received very encouraging feedbacks. However, there are still technical and marketing challenges that we are in process to address.

And the silver lining - while the company had gained momentum with the furniture business, we still felt attached to our very core idea of making significant contribution to the society. In November 2020, we were very fortunate to get that opportunity, when the senior personnel of Indian defence visited our facility at IITGn.

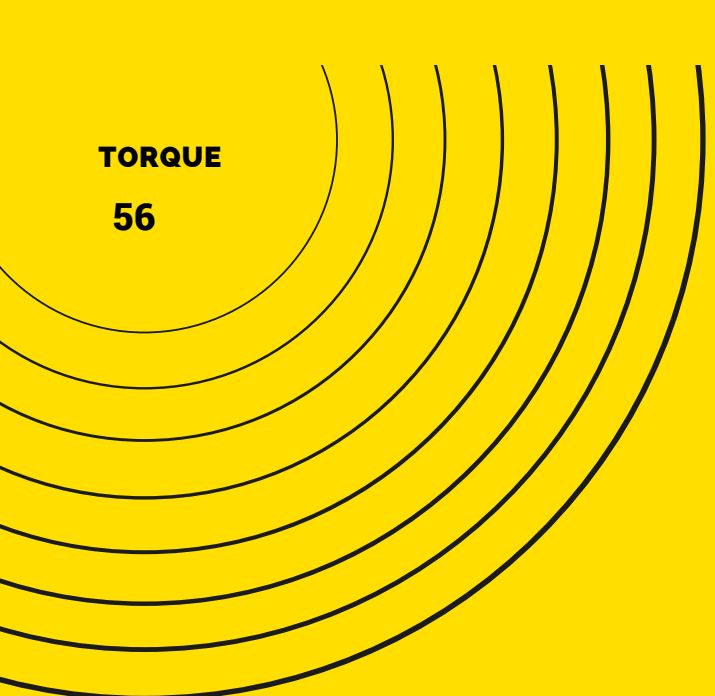
Impressed with our state of the art facility, they spread the word with in their organisation, and after several meetings we finally got the honour to demonstrate our technology and the contributions that we could make in the defence sector. After receiving a very positive feedback, currently, the company is working on developing effective and mobile defensive military fortifications and construction of shelters and habitats for Indian defence.

In a more recent project, the company developed a 3D printed, rapid-construction, habitat structure, to showcase the applicability of our technology in mass housing construction in India. Apart from safe, modular and rapid construction, other key features of our 3D concrete printed structures would include 70% less material consumption, reduced carbon footprint, reduced HVAC load, and better thermal comfort.

In a nutshell, with our humble beginning, perseverance and a constant support from our mentors, we look forward to make some significant contribution to the society. With the vision to improve the current scenario of architecture, infrastructure and real estate, MiCoB looks forward to offer design freedom, streamlined construction processes, economic habitats to all and sustainable infrastructure; while also making the due contribution in safeguarding the environment. In a nutshell, we at MiCoB aims to be a part of the society that thrives to create a better world for the upcoming generation.

Together, let us create a better tomorrow!





⊕ **IT'S COOL TO BE A STUDENT**
BUT DO YOU
KNOW WHAT'S
COOLER

Well, a lot. But also,

RUNNING YOUR OWN SHOP AS A SIDE HUSTLE!

At IITGN, we've always encouraged and inculcated a culture of entrepreneurship and independence among students. Infact, IIEC (IIT Gandhinagar Innovation and Entrepreneurship Center) in collaboration with EII (Entrepreneurship Initiative IITGN) organized a competition 'Run Your Own Shop' , where students were asked to submit their business ideas. The competition witnessed an encouraging participation from the students and two of the ideas were selected as the best among the lot! They are featured here.

1

Serene Stores

Founders: Tanmay Jain & Yatharth Vakil

The idea of Serene Store is simple: to plant/donate a tree for every clothing or accessory product sold. People can take action against climate change every time they do a simple act of purchasing with us. Since this was going to be our first such trial in the business world, we faced challenges both external and internal to us. The external challenge was obviously Covid-19 that forced us to manage things unconventionally. The internal challenge was the inertia to put ourselves in front of the community. We have sold around thirty T-shirts as of now which means thirty trees are donated to the Cauvery Calling project by the Isha foundation. We have to add something here: the moment of making the first-ever sale is very precious. The biggest challenge that we faced due to Covid-19 was the uncertainty looming around. In general, uncertainty is not good for any business. Climate change is an important issue to be solved but a pandemic is an urgent one and if the pandemic didn't exist we would have seen a much more enthusiastic response for the Serene Store. We feel proud of what we have done and are thankful to all our customers who made a difference by choosing us. We have learned many lessons and that would not have been possible if we didn't try.

Serene Stores

the founders



Yatharth Vakil



Tanmay Jain



MENace Tshirt

the product



Serene Black



2

artRIA

Founder: Surbhi Khewle

Passion is the energy that keeps us going, that fills us with happiness, excitement and anticipation. Though I am pursuing a Ph.D. but artRIA has become my passion. I have always been into art and craft but before a couple of years, I became kind of obsessed with making dreamcatchers and I always had a dream to sell these.

I was hesitant to start a business because it is difficult to manage academics, sports and follow your passion at the same time. But during the lockdown, I had some free time, so I decided to share my work on instagram, and that's how artRIA started. It was limited to mandala art but in January 2021, Eii gave me an opportunity with 'Run your own shop' and I thought to myself, "Maybe it's time!". Even then I was not totally into the idea but then a friend came and asked, "Why don't you do it? You always wanted to", and a few more stuff which gave me a little push and I right away filled the form and eventually got selected.

Since I recently started artRIA, I do not have much experience in the business but I love it. Among others, the main challenge I faced so far is time management. I am taking this business very slow by only selling to the IITGN community at the start and then slowly expanding to main cities and reaching out to more people via Instagram publicity. I hope someday I will sell my pieces nationwide and inspire people to follow their passion, no matter what your career is.

artRIA

a brief glimpse



Dreamcatcher Keychains



Surbhi Khewle

at what they do



**Find more such decorations
at Artria's instagram page!**



Mandala Art

COLLEGE ACTIVITIES

AMALTHEA

Amalthea is the Annual Technical Summit of IIT Gandhinagar. In its 11th edition, albeit remote, the event tried to connect hearts, collaborate efforts and create new ideas amidst this pandemic.

Amalthea '20 involved a series of webinars featuring several eminent personalities like Dr Mylswamy Annadurai, the Moon man of India, Dr Arvind Panagariya, the First Vice-chairman of NITI Aayog, Ms Mathangi Sri, a Data Science Leader, Mr Srinivas Mohan, the VFX Supervisor of the movies Bahubali and 2.0, and Dr William Oliver, who is the Director at the Centre for Quantum Engineering, MIT.

The theme of the Online Symposium for Amalthea '20 was "Climate Change: Connecting Science, Industry and Policy". The panel included several pioneering researchers and experts from academia, policy and industry who discussed the various challenges related to climate change and associated solutions that could be implemented.

This edition witnessed overwhelming participation in the online events, including CryptoRush, Autodesk Workshop, Chem-e-Think, Icon, GameJam 2020 AD, Rube Goldberg Building Challenge, Anveshan, amongst several others.



AMALTHEA '20
connect. collaborate. create.

BLITHCHRON

Blithchron, the Annual Cultural Fest of IITGN, is considered one of Gujarat's largest cultural festivals. Owing to the pandemic, Blithchron '21 was held remotely on the 27th and 28th of March on the theme 'A Confluence of Ecstasies'.

A series of exciting events were planned to take everyone on the roller coaster ride filled with thrill and ecstasy. For the first time, Ecstocon, the animated mascot of the event, was introduced as the official ambassador of Blithchron '21. The two-day fest included various online events like Mezkala, Quizzitch, Reverb, ExaggeratAD, Unkahi, Lenz Law, Skirmish and the Blith Parliamentary Debate.



Online Pronites featuring stand-up comedians Rahul Dua and Rajat Chauhan proved to be a great success in beating the COVID blues. Some of the other events included Jazbaa 2.0, Aesthescape, Lips Don't Lie, Zoetrope etc. Overall, Blithchron '21 engaged and entertained a large audience just through online Zoom calls.



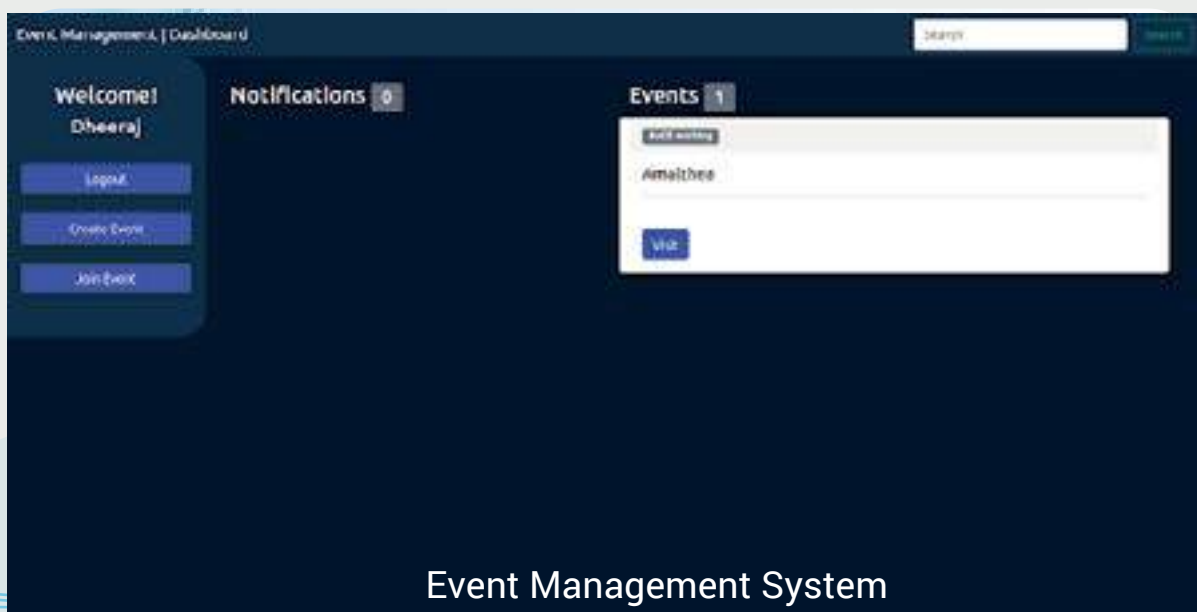
HackRush 4.0

HackRush is a 36 hour long Annual Intra College Hackathon at IIT Gandhinagar. Participants solve a problem from scratch and develop a working prototype in a short span of time. The fourth edition of HackRush was held over a period of one week due to the pandemic.

This year, several problem statements focused on long-term development and short-term competitions from different domains, including web development, app development, machine learning, and cybersecurity. With over 130 participants, several projects were successfully completed and are on their way to deployment!



Course and Graduation Plan Tracker



Event Management System

InsIIT



InsIIT is the next chapter in making the IITGN campus more accessible and technology-driven. Kicked off via HackRush 2019, this project was brought to life with a vision to create a one-stop-serves-all platform for all community members. The project incorporates several aspects of the campus and deeply integrates into services that students use on a daily basis.

With over 15 features in active development, the team is on its toes to substantially change the way students and faculty go about their daily lives in the institute. The project is available under the Open Source - IIT Gandhinagar umbrella organization on GitHub and is looking for active contributors who can learn mobile development while contributing to the student life at the institute!

Here is a quick sneak peek at what's going to come next ;)

Covid Details

Updates FAQs Self Assessment

Last Updated: 22-05-2021, 21:33 IST

Active Cases (Hostel Residents): 0

Recovered Cases: 166

Primary Contacts: 0

Note

- Please maintain proper social distancing and wear a mask whenever you come out of your room.
- Contact dispensary (079 23951116) if you have any symptoms.

SOP in case you are tested Covid positive

- You will get a call from the contact tracing team regarding the procedure to shift to the quarantine facility (Guest House) at the earliest. You can take all essential items to the guest house. Separate arrangements for food, housekeeping, medical and other requirements are available at the Guest House. Regular follow-up will be made from the medical center, support staff, and student affairs team.
- You will also be asked to share details of primary contacts over the last ten days in a separate google form. It is extremely important that you share this information accurately.
- A secondary team will then follow up with primary contacts and advise appropriate quarantining

MA 101 - Mathematics I

Your Performance so far

Name	Score	Marks	Weight %	Total
Endsem	10.00	100.00	25.00	2.50
Midsem	10.00	100.00	50.00	5.00
Finals	60.00	100.00	15.00	9.00
Quiz 2	33.00	65.00	5.00	2.54
Tutorial	10.00	10.00	5.00	5.00
Total =				24.04 100.00

Performance with Time

Line graph showing performance over time (0 to 3). The Y-axis represents Score (0 to 100). The X-axis represents Time (0 to 3). The performance starts at approximately 10 at time 0, rises to 60 at time 1, dips to 50 at time 2, and rises to 100 at time 3.

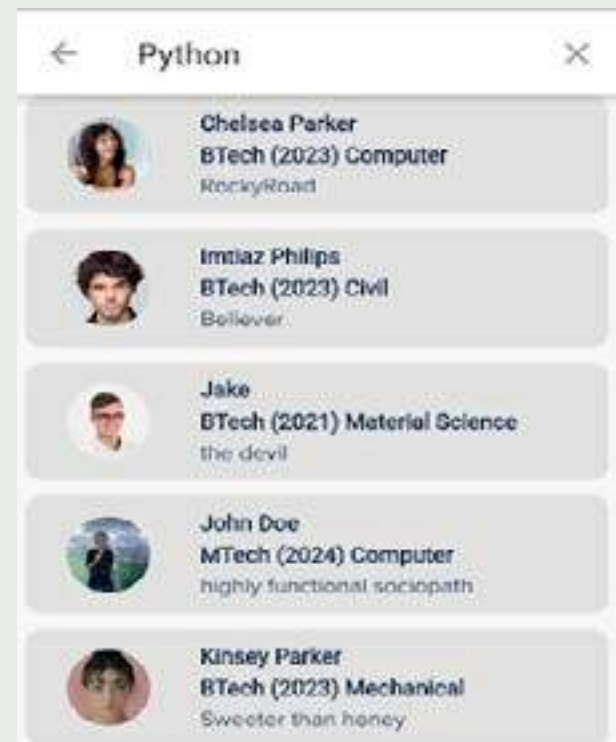
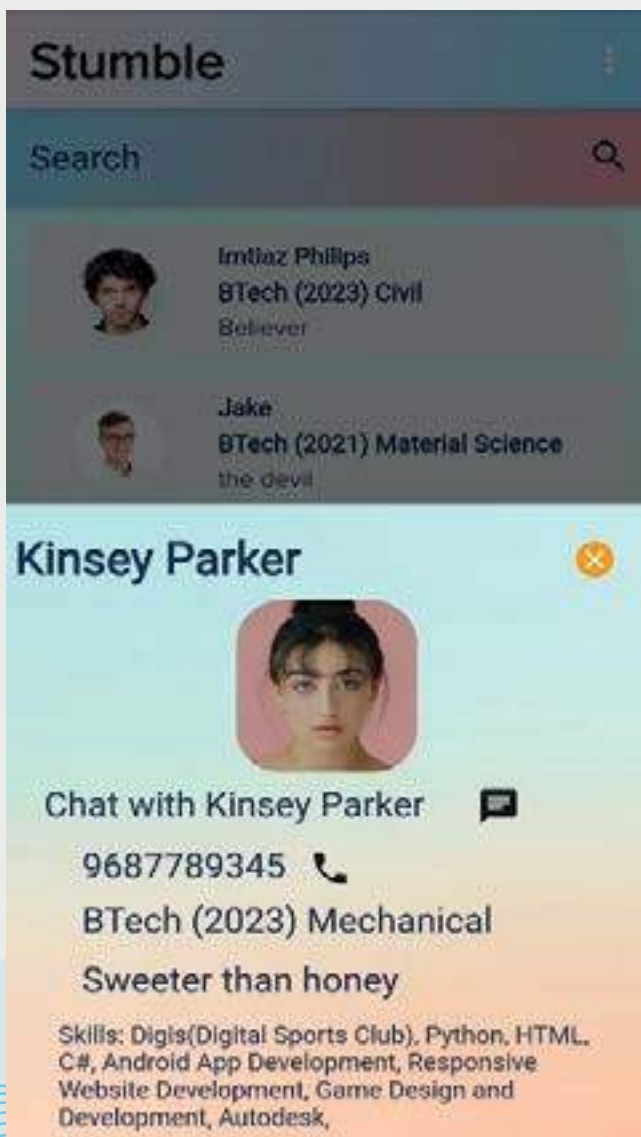
Stumble



Stumble emerged out of an SSOP project in 2020 when a group of creators came together to learn how to build mobile apps. Seeing their batchmates have difficulty contacting seniors for advice, they created an application that connects like-minded people within a community.

The app allows users to:

- Exchange ideas, photos and connect with people through messaging them directly.
- Showcase skills and interests.
- Search for relevant and interesting people based on their achievements and skills.



CLUB ACTIVITIES

DigiS

DigiS is the Game Development club of the Technical Council that provides a platform for students interested in developing games to become competitive game developers.

As a first, DigiS conducted Game Jam 2020 AD in collaboration with Amalthea which saw record participation with 609 people getting their hands dirty with just under a 100 submissions for the event.

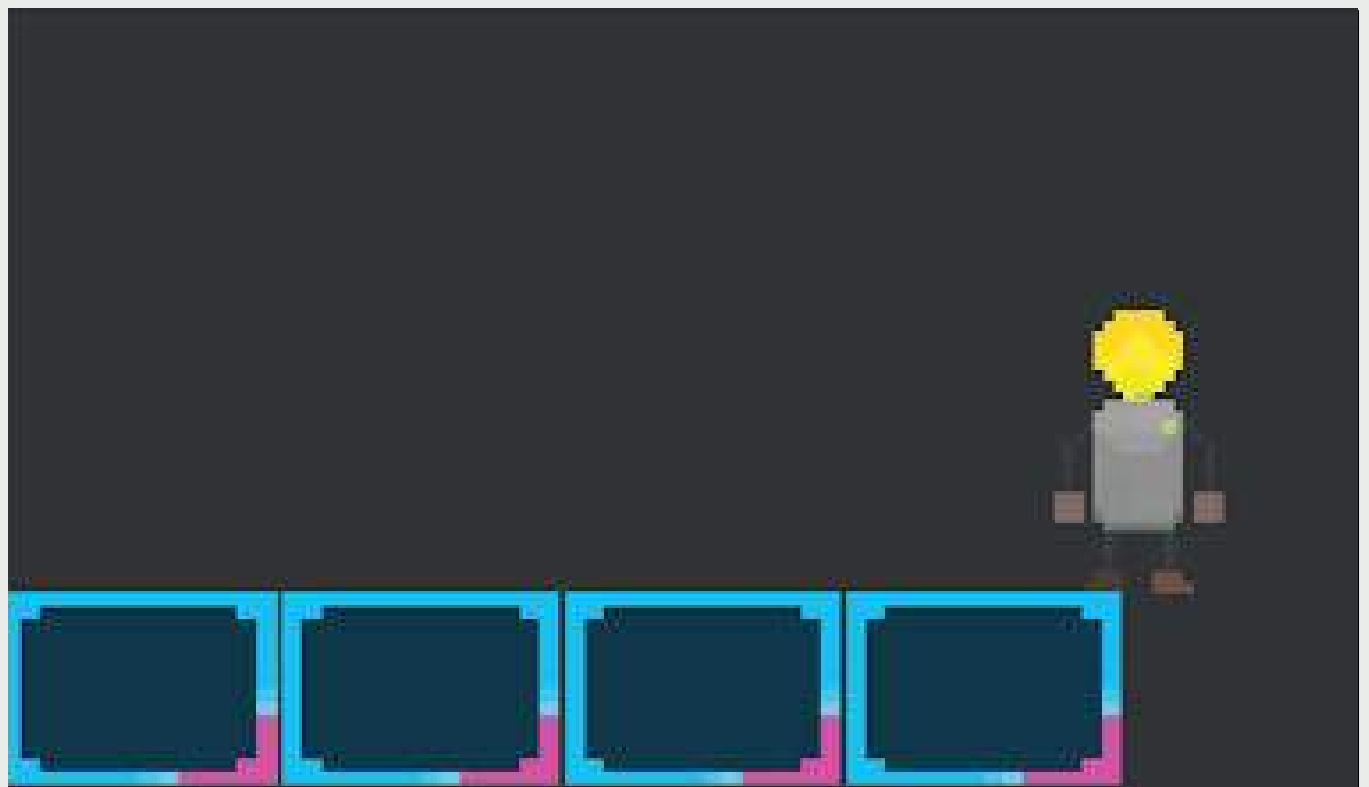
DigiS also participated in several global Game Jams (game development events); most notably, the Brackeys Game Jam

editions 2020.2 and 2021.1. Aniket Rajnish and Yash More from the club ranked #72 amidst 9000+ participants with their game. In the later edition, the team improved their position to #21 amongst 10000+ participants for their game “Two Opposites”.

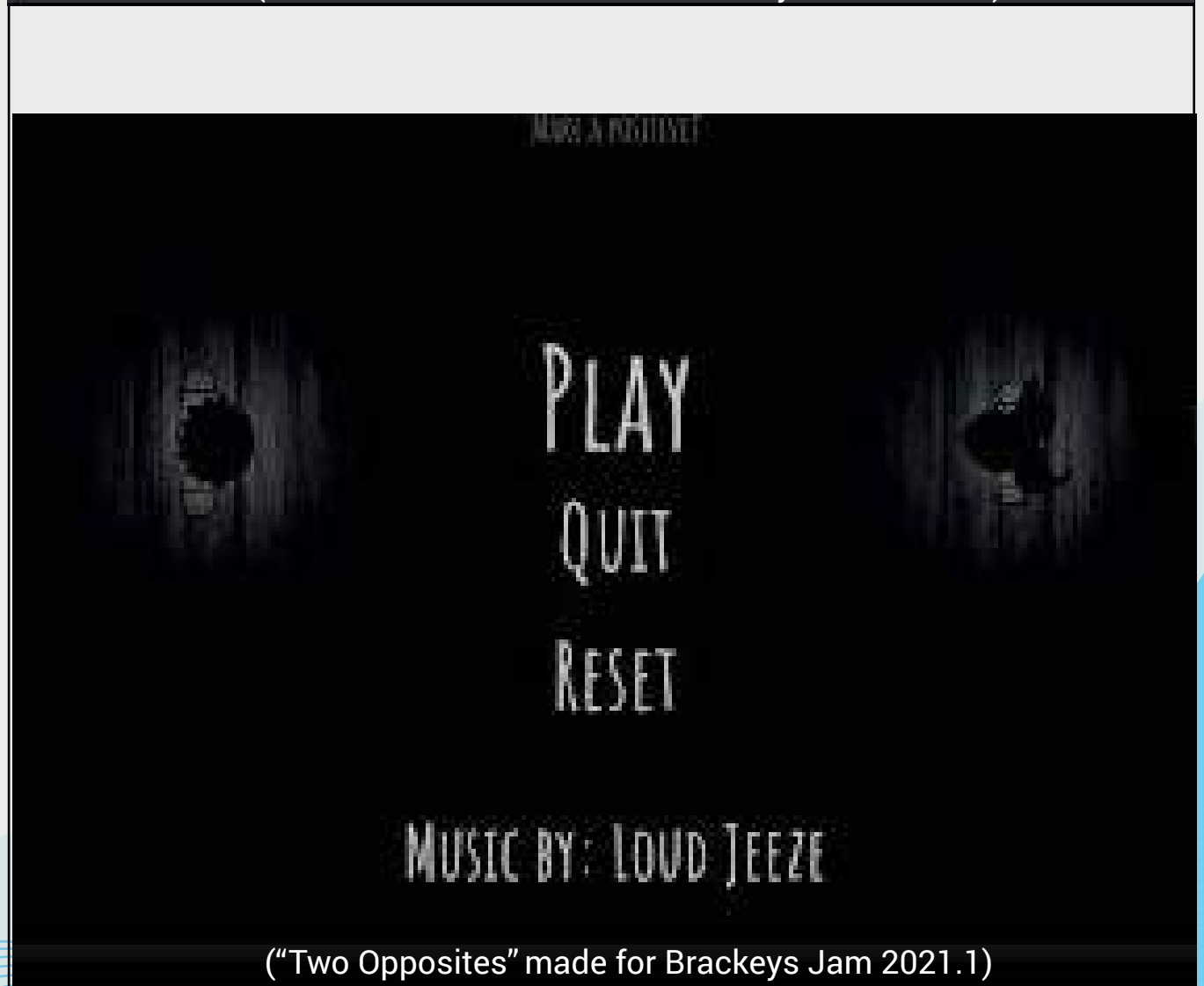
DigiS has also conducted various workshops to upskill students in modelling and game design by conducting specific events such as Vuforia for AR, and Introduction to Blender. Stay tuned, as several exciting things are in the works!



("Faster Than Light?" made for Brackeys Jam 2020.2)



("It's Rewind Time" made for Brackeys Jam 2021.1)



("Two Opposites" made for Brackeys Jam 2021.1)

Mean Mechanics

In the past year, Mean Mechanics, the robotics club at IITGN has had to significantly alter their functioning in the absence of physical components. In a bid to start afresh, the club released its new logo and held several events for the student body including Arduino and Tinker-CAD workshops. Club members were encouraged to work on short-term as well as long-term projects. Most notably, a small group of members have begun work on an Electric skateboard!

With the freshmen forming a new part of our fraternity, the club conducted various workshops (Arduino, OpenCV, Home automation) to create awareness about possible opportunities within robotics. These events were often accompanied with competitions which led to a fun, yet fulfilling event. Towards the end of the year, the club also held its flagship competition iTinker in collaboration with Ignite.



Amidst other events, the club initiated a new machine learning workshop, and has started a weekly robotics quiz on their instagram handle!



Tinkerers Lab

In the past year, the Tinkerers Lab has undergone a lot of changes! Apart from moving to a new space in AB 4/111 due to the upcoming supercomputing facility, the lab has gained a fresh look with a design based on merging ergonomics with aesthetics.



The lab has acquired several new machines, including 3D printers, PCB millers, and Vinyl Cutters.

An updated booking facility and the new website has made the lab more accessible. Expect changes to keep coming as the Tinkerers Lab continues to grow into a Tinkerer's dream! Apart from the various logistical changes, the TL team has also held several workshops throughout the year, such as the Virtual Build-a-thon, A hands-on introduction to IoT, Augmented Reality, ROS, and Matlab.





FEATURING INHOUSE AUTHOR

Introduction

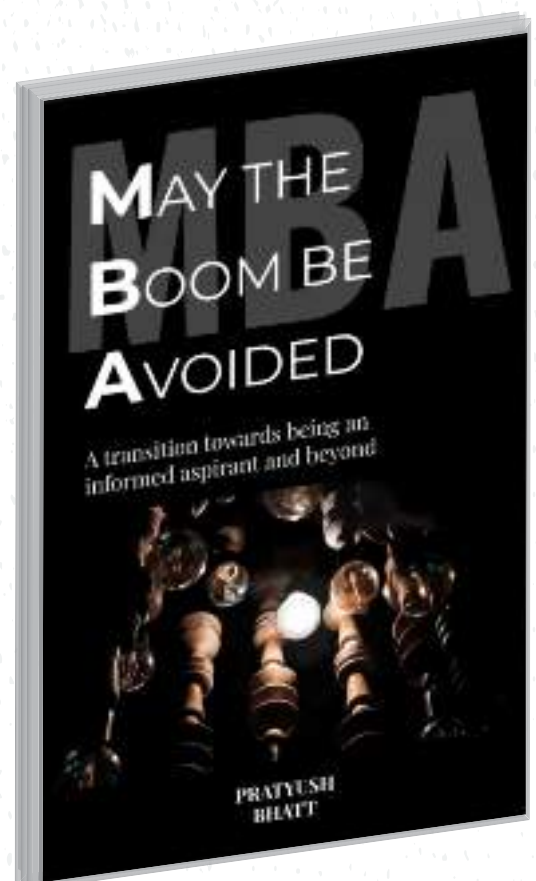
Pratyush is a Chemical Engineering undergraduate at IITGN and published his first book titled 'MBA: May The Boom Be Avoided' during the third year of his undergrad.

Owing to his diverse portfolio of interests, he has been able to draw accolades spanning across the domains of academics, music, debating, writing, and many others. He is a state-level basketball player and a national-level spelling bee contestant as well. Moreover, he has also appeared as a guest speaker at multiple youth-focused events. Many of the projects and initiatives he's intrigued to take are aimed at addressing those challenges that affect the lives of the masses. Consequently, his academic interest lies in the field of Sustainable Development.

His reading interests range across multiple domains under non-fiction. These include select areas from cognitive science, strategic management, self-help works, scientific and technological advancements, and Indian philosophy, to name a few. Other than the same, he usually opts to spend his leisure time working out, playing basketball, swimming, playing the drums, or socializing.



PRATYUSH BHATT





SUMMARY OF 'MBA: MAY THE BOOM BE AVOIDED'

Why has an MBA become as popular among the Indian youth as those 'Good Morning' messages among WhatsApp-addict uncles and aunties? "An undergraduate degree isn't enough for good employment, I ain't paid as much as I deserve, existential crisis is killing me, I want a career switch, I ain't getting good start-up ideas, my job sucks...DAMN IT!" Such and many more are the concerns common among young people nowadays, but the solution, too generic – "MBA karlo." In your hands is an ailment to avoid eternal regrets on your decision for an MBA if it has come from this solution.

However, you don't deserve the blame if you were about to adopt it. 'Chaos' is at fault for this MBA Boom India is experiencing. This chaos playing with the mindset of MBA aspirants is one-of-its-kind, very different from that observed in crowded markets or metros. The chapters inside explain what it is very lucidly, but to highlight the crux, it has completely moulded our perception of this educational program. And its consequence is such that many young MBA holders, whether employed or unemployed, adversely suffer because they consciously choose to fall prey to it.

The fat pay-cheques one gets, the work-life balance one has, the quality of education it offers, its ability to create outstanding entrepreneurs, and many alike are the kind of responses heard when we ask someone: "Why MBA?". But are all these beliefs actually true? Or are they

gimmicks to lure the laymen? Ranging from professional, to educational, and even entrepreneurial misconceptions related to MBA, this book clarifies them all.

Spoiler Alert!

Contrary to what the title of this book might sound like, you might still decide to go for an MBA after reading it. But this time, it wouldn't be the same 'you' who decided to choose that route just because many others were doing so. Be it any career choice you make, once you are done with the read, you will be much clearer about your thoughts than you might have ever been. So clear that you will hold ZERO regrets for them, and that too, forever.

Sounds like a surreal commitment? Fortunately, it's been proven to work for many, and should do the same for you too if you are ready to hold your breath until the end of the book.



SCAN THIS QR CODE FOR PURCHASING THE BOOK

Alum Speaks!



PANKAJ VATWANI

What was your major in college and what field are you presently working in? Are they related or completely different and how?

My major in college was Electrical engineering. I also did a Minor in CSE along with that. Currently I am working as a software engineer at Enphase Energy which is not related to my major but related to my CSE Minor as I learnt different computer science subjects and technologies that I use on a daily basis.

How did the college prepare you for the real world?

College provided me with lots of opportunities which helped me to explore my passion, learn the value of teamwork, develop leadership skills, and apply classroom learning to real-life problems. It helped me develop my lateral and analytical thinking which have helped me in approaching situations with new insights and awareness, and also a strong network of friends and teachers that has made me more open minded.

Top 5 things you learnt at college and never forgot? How did those learnings help in your future career?

The 5 important things I learnt at college are:

- (1) Working in Team Environment and its importance
- (2) Time Management
- (3) Learning from mistakes
- (4) Good Communication Skills
- (5) Problem Solving

I think all of them play a significant role in my daily life and help me to communicate better with my teammates, manage my time efficiently and to be productive and achieve great results.

What importance does IIT Gandhinagar hold in your life?

IIT Gandhinagar holds a great importance in my life. I have learnt a lot during my 4

years of college life which has helped become a better person and I feel that the college phase was one of the amazing phases of my life.

How would you describe your personality before coming to college and how it changed during 4 years of B.Tech?

Some of the changes that happened in my personality are:

- (1) Meeting different types of people and listening to their experiences broadened my horizons and made me more open minded.
- (2) Leading different teams helped me to improve my communication skills and to develop leadership skills.
- (3) Working together in teams for different projects helped me learn to deal with different situations and various other social skills.

What advice would you give to a first-year B.Tech student?

I would say to explore as many things as you can during these four years which will help you find where your true passion lies and what you want to do in life.

What was your most favourite and least favourite thing in the college?

My most favorite thing was late night hanging out with friends. I did not enjoy the morning 8:00 AM compulsory attendance classes much.

If you would have the opportunity to do it all over again, what would you do differently?

I used to miss a lot of my classes in the first 3 semesters. However, later I realized that attending classes regularly makes it much easier to understand the subject and prepare for exams rather than reading notes or books on the last day or some days before the exam. So probably if given a chance, I will try not to miss many classes.

How did you come out of the challenges imposed due to the pandemic on you?

Fortunately I didn't lose my job during this pandemic situation. Additionally I developed some new habits to overcome the boredom of staying locked in the house which include book reading and listening to podcasts.

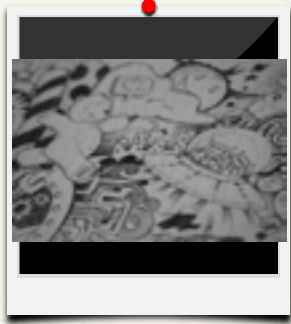
Advice to our students, especially the graduating batch amidst the pandemic.

Take care of yourself and your family during this pandemic. Connect with different people and grow your network as it would help you in finding various opportunities for you as well as your friends. Utilize the extra time in learning some new skill that you feel will be required for you to pursue your goal.

THE END!

FEATURING WINNERS

Doodling Competition



Prize winners:

1. Samiksha Kamble
2. Vindhani Asma
3. Shreya Shukla

Photostory Competition

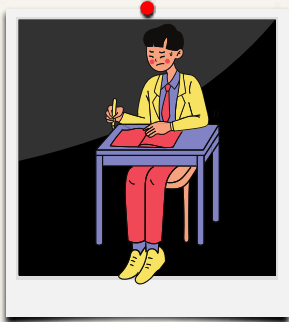


Prize winners:

1. Tanvi Chaudhari
2. Anutosh Jaishwal
3. Jayanti Hansdah



Essay Writing Competition



Three Best submissions :

- Parichay Thakore
Yash Kamble
Aman Raj

Script Writing Competition



Prize winners:

1. Krish Gupta
2. Yash Aditya



Congratulations! 
to our prize winners

TEAM PHOTO

EDITORIAL BOARD



*R1: Praveen Venkatesh, Deepika Soni, Ayush Kumar
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TECHNICAL OPERATIONS



Chris Francis

