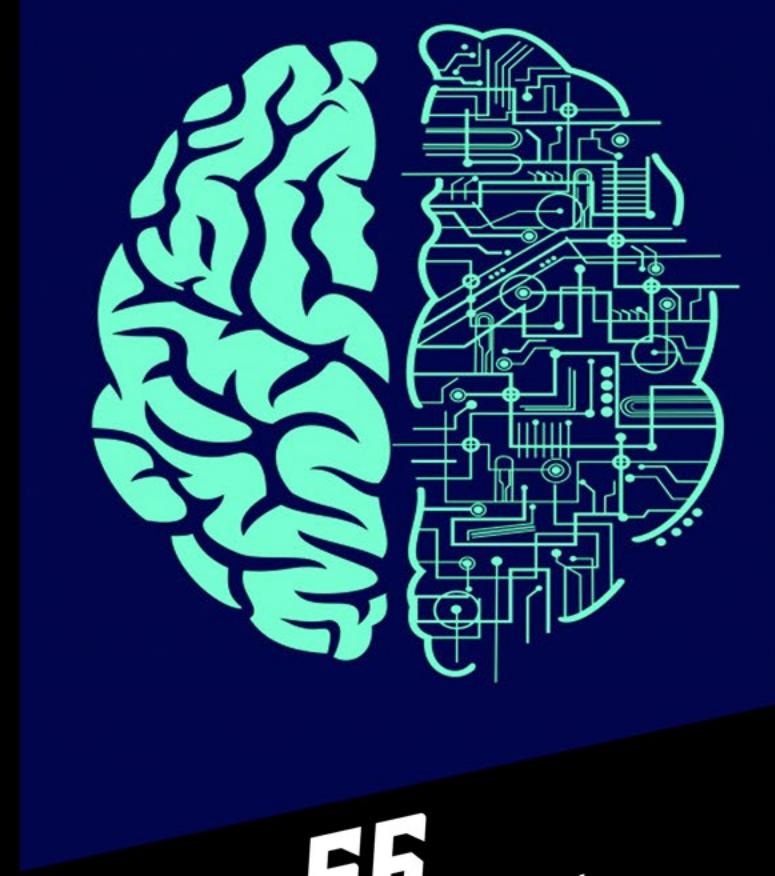


# ABHISHAR

vol 10.0



**19**  
Science Fiction  
and Technology:  
An Infinite Loop

**28**  
In Conversation  
with Akshay  
Saini

**56**  
5 Years and  
Counting



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*Editorial And Design*

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# EDITORS WRITE

Palak Jain

"Today's science Fiction is tomorrow's science Fact." This edition of Abhishar celebrates the chronicles of sci-fi. It encourages us to explore the frontiers which lie at the outer limits of existing sciences.

The making of Abhishar v.10 has witnessed combined efforts just like other versions, but the difference lies in the medium of collaborating via online means and virtual meetings. Abhishar serves as a way to portray one's thoughts for our keen and avid readers to read. It is laid on the foundation of our dear friends' memories and idols - Lt. Abhinav Saxena and Lt. Tushar Sharma. The spark of enthusiasm and endeavor led by them motivates us to ignite the fire of success in putting together each edition of Abhishar.

We hope you are enjoying your time at home, so grab a cup of coffee, scroll down to articles and poems before someone in a time machine traps you in a time loop, forces you into a paradox, alters your timeline, or unintentionally erases your memory!

Guna Shekar Proddaturi

From Avengers to Inception, from extraterrestrial life to underwater mysteries, from cyborgs to robopocalypse, no doubt science fiction has fascinated all of us. It has been a marvelous ride watching ideas turn into exemplary designs, and even more incredible articles and poems gracing those pages. With articles focused around a wide variety of themes, we thoroughly loved reading them as much as the authors would've writing. We sincerely hope this edition of Abhishar, like every other one, will bring to you immense value and ignite a spark towards a better and a less fictional and more real future!

While the admirable efforts of the makers can be seen, human errors tend to be inevitable. Valuable feedback and suggestions from the esteemed readers of Abhishar are highly appreciated and much-awaited.

LOADING.....

## Director's Note

It comes as a delight that "Abhishar" is releasing its 10th volume. Every year, as Abhishar evolves, it becomes a platform for students to express their creativity and unfetter their imagination. Be it technology or social issues, this magazine has given new impetus to students to express their views. Abhishar, has only been made possible due to the relentless efforts by the entire Abhishar team and the writers. I hope that Abhishar continues to propel the entire student community of IIITM Gwalior forward.

Prof. Rajendra Sahu  
Director, ABV-IIITM

## Registrar's Note

It gives me immense pleasure to acknowledge that Abhishar, with its 10th volume, yet again continues to evolve and improve. Abhishar is a culmination of the creativity and effort put in by the editors, the Abhishar team and the writers. Students have put forth their ideas with exquisite writing styles and have really exhibited their imagination and creativity. This is more than just a magazine, and has come to be a symbol of expression and creativity, and it has only been possible due to the combined efforts of the Abhigyan Abhikaushlam Students' Forum. I take the opportunity to warmly thank and commend all the contributors for their thought provoking pieces of writing, which embellish the pages of Abhishar v10.0.

Mr. R.P. Dwivedi  
Registrar, ABV-IIITM



# Faculty Speaks



It gives me immense pleasure and delight to see "Abhis-  
har" releasing its 10th Volume. I witnessed the student  
community's spirits in all the previous nine issues of the  
magazine as faculty in charge of the AASF community.  
Year-by-year, this student magazine showcases the tre-  
mendous creativity and networking with the alma  
mater. The contribution from all the authors and editorial  
board members is genuinely appreciable.

**Prof. Joydip Dhar**  
**Professor, ABV-IIITM Gwalior**

It is my sincere pleasure to congratulate the editorial  
team and the contributors of Abhishar, the annual  
magazine of exemplary writing by students. Through its  
journey of nine editions, it has reached a good reader  
base with fantastic content covering lifestyle, tech geek,  
career, gossip and many more. It is truly impressive to  
see the year on year qualitative growth. I wish our  
students and alumni will take the saga forward.

**Dr. K.K. Pattnaik**  
**Asstc. Professor, ABV-IIITM Gwalior**



I heartily congratulate team Abhishar for launching  
their 10th edition, Abhishar v10.0. The quality and  
diverse content of this flagship magazine is well  
appreciated by many zealous readers. This magazine  
provides a much-needed medium for the students in  
exhibiting their literary talents. I wish the entire  
editorial team and contributors of Abhishar v10.0  
success in their endeavours.

**Dr. Debanjan Sadhya**  
**Asst. Professor, ABV-IIITM Gwalior**

It is amazing how Abhishar has been a constant  
reflection of the hard work, commitment and sincere  
professionalism of the entire team. With every year,  
the thought-provoking articles and poems grow  
beyond just words, and I hope that this effort persists  
in the coming years as well.

**Dr. Vinal Patel**  
**Asst. Professor, ABV-IIITM Gwalior**



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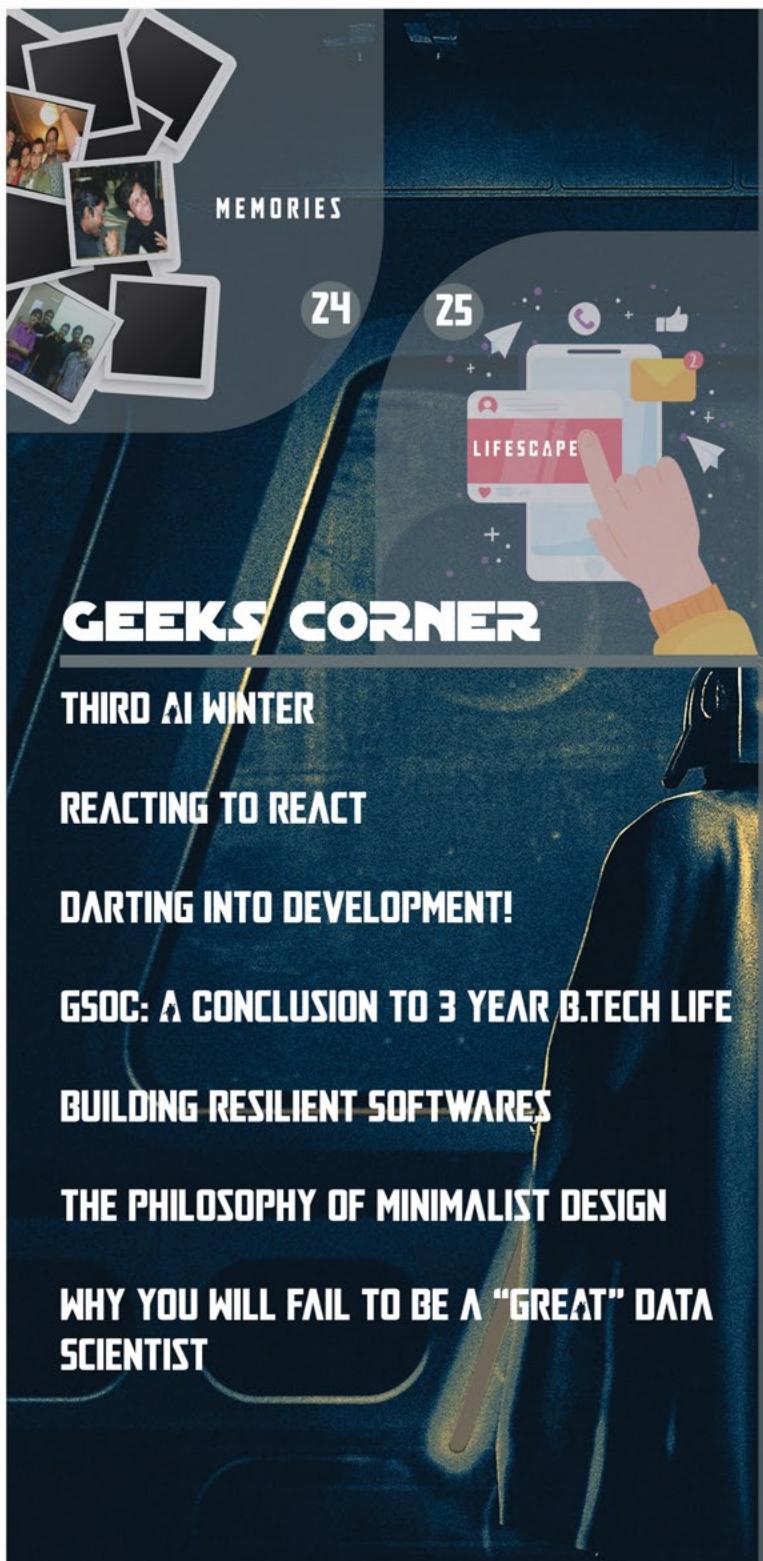
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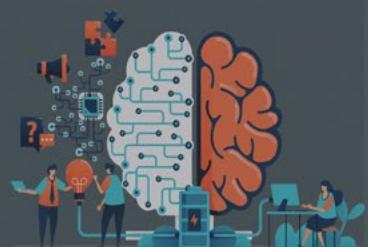
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ABHIV YAKTI

# About AASF & Events

Being in an ever-changing world with technology galloping at a pace never seen before in history, the forum is laboriously engaged in organizing a variety of formal and informal events every year, which guide the students to adapt better in the techno-managerial world. Activities are based on the concept of peer-to-peer learning.

## Technical Events

### Linux and Hardware

Sessions/Workshops helping students learn the fundamentals of computer science and IT.

### Web Development Week

Acquaintance to basic and advanced web development technologies like HTML, CSS, JavaScript, Node.js and SQL.

### AASF-ICPC, Online PCs & Junior PCs

Frequent programming contests conducted in the format of ACM-ICPC to provide a perfect platform to practice.

### Open source, Git, Github & guide to GSoC

A session on open source development and version control systems such as git, and also a comprehensive session on approaching GSoC.

### Emerging Technologies

Sessions on various emerging technologies like Blockchain, AR/VR, ML, etc.

### Winter Projects & Hackathon

Month long event for students to learn and build projects, and a 24-Hour Hackathon to inspire ideas and products for tomorrow.

## Managerial Events

### Case Study hIQ

Managerial concepts to handle stories which present complex and realistic situations that often involve conflict.

### Case Study Contest

Aimed at improving analytical skills to solve an issue at hand.

### Corporate2Campus - Managerial Sessions

Sessions delivered by Corporate Professionals to ace managerial skills required for the industry.

### Corporate2Campus - Talk Shows

Fun and interactive events for students to interact with professionals from the industry.

## Oratory & Literary Events

### Jest A Minute (JAM)

A fun event in which participants have to speak without hesitation and deviation and are challenged by opponents.

### Group Discussion

An event involving a lot of group dynamics to enhance the students' oratory and analytical skills.

### Debate

An event consisting of keeping a topic at the center of consideration and discussing pros and cons.

### Experientia

A session for the younger batches to interact with their seniors and learn about resume building, career options etc.

## Technical Blog Writing

A platform for the tech-enthusiasts to pen down their learnings and knowledge for the world to see.

## Mock Interview

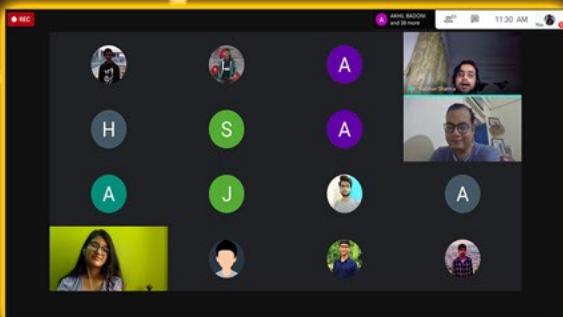
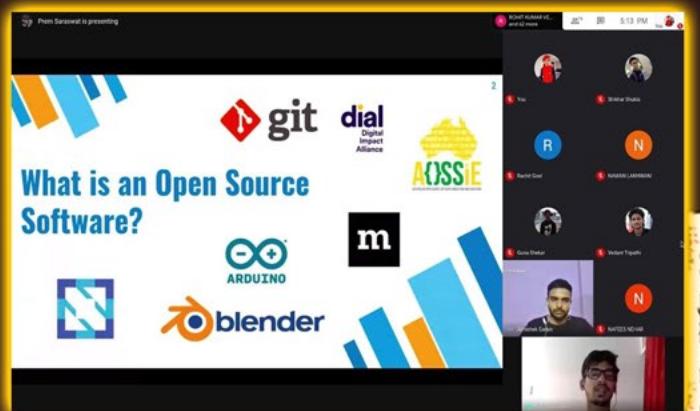
Interviews with esteemed alumni to boost communication and interview skills.



# Events & hI Qs



SIC MVNDVS  
CREATVS EST



# SHOULD WE BREAK-UP WITH 2020?

Irita Mishra  
IPG-2013



I don't need to say what everyone else is saying. The world has come to a standstill. Life, as we know it, has changed drastically. For all intents and purposes, I am going to avoid saying the word throughout this article. You know what I mean! This also shows that I probably have a maladaptive coping mechanism for all the cabin (and literal) fever that's sweeping the world. Anywho...

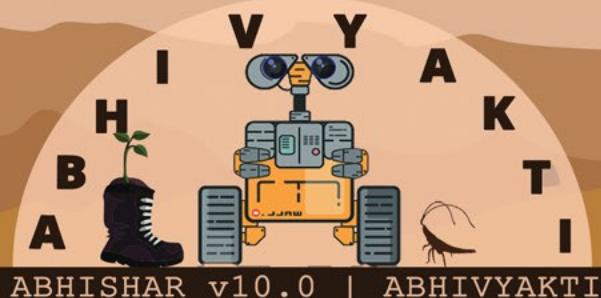
I, for one, have been sleeping a lot. I am also cooking a lot because what else is there to do? Surprisingly, I have been living in the US for two and a half years but never had the courage to cook extravagant meals. Like ever! I survived mostly on sandwiches, dal-chawal, khichdi, and rajma. So, one day I was making Butter Chicken (play Mozart's Symphony No. 40 for background effect), my mind was elsewhere because I do not generally enjoy the activity of cooking. I was thinking about the possibility of an alternate reality where everything is normal in 2020. There are no riots, terrorism, wildfires, civil unrest, floods, the big scary virus (I'm still not going to say the word), and other scary things in this utopian reality. And then, I realized that humankind would never learn from its mistakes if it is not jolted awake with the harsh truth. We have done so much evil that the universe (read: How I met Your Mother) is exacting revenge on us for our deeds. Frankly, I'd rather have a locked existence for a few

months to let people cool down, and nature come back to its glory. But then, of course, there are those geniuses who do not comprehend the situation. They do not want to wear masks and practice social distancing. No wonder cases are on the rise again in the countries you and I live in. There are a lot of melancholic facts we can discuss here. But there is no need to break-up with or ghost 2020 yet! Let us just pause and look at all the good things this year has brought us.

- A 103-year-old Grandma beat the Big-C (scary virus) and celebrated with a Bud Light.
- We all saw Tiger King and somehow loved it (did we, though?).
- Sweatpants and tees became the latest fashionable choice.
- We all went back to our hobbies like baking, sketching, etc. rather than just watching Netflix.
- Board and card games became cool again.
- TikTok blew up before it was banned in India (lol).
- Hardik Pandya had a baby while Demi Lovato got engaged.
- We got news about a possible Friends Reunion, finally.
- Prince Harry and Meghan Markle left the Royal Family.
- We all purposely forgot to wear pants in our Zoom meetings.
- Parasite became the first international feature film to win an Oscar.
- We all clapped, sang, and banged our plates at 5 pm, showing solidarity and camaraderie in our communities and neighbourhoods.

We are now living in a new normal that changes from week to week. Some of the things in our new normal can and should be retained to form our lives in the future. We have time to sit outside and watch birds, plants, and squirrels. Let us enjoy what we have not had time to enjoy. We have time to cook new dishes, sit together to eat without running off to be somewhere. We have time to sit and play board games, go for family walks or bike rides, clean the garage together, and basically be a family. We have time to watch our neighbours from our balconies and porches, notice their lives, and interact with them over the fence. Let's keep being neighbourly. Let's not get so busy that we are permanently tired. Let us find time to enjoy the simple pleasures of life. Let us keep finding time to try new things and be with each other.

Those who fail to adapt to change will be left out and relegated to become human dinosaurs of a former existence. It happens with every generation where inflexible and narrow-minded individuals clinging to the past eventually fade away into oblivion. We can keep blaming the big scary virus for public health restrictions, but we cannot go back to the pre-pandemic days to frolic around freely, just like we cannot go back to the 19th century to oppress women. Now, unless Elon Musk builds a legit time machine in the next five minutes, we are unfortunately left in



2020 to embrace the struggles of the present. That is until we die. But let us not go there yet.

Our version of normal is gone. Our yesterdays are never going to be our tomorrows. Can we move past the

hurt we faced this year and focus on building a better tomorrow with what we can salvage today? Let me end with this: I'm going to take my newly sharpened cooking skills into 2021. What will you be

taking? 🚗

**Irita Mishra is currently pursuing her PhD and is a great orator and writer.**



Siya Banodha  
IMT-2019

### STILL MOVING WITH PAST



Time strikes me as a weird combination of dazed/blurred moments. Each piece joined day by day and finally creased tight as a memory. Pages smudged of the ink I left for some people I love and others broken into crumple left for me to clear them over the skies and reread with the 99th blue tipsy/(contented) times.

I remember/write into dates I stood stronger with. The days I held the sharp cutlass/scratches of tinted sword, in my hands and waited for defeat, fighting the best I could. Lost somewhere close and hidden stacked in my memory, I create poetry of darker days. They remind me why I need to keep going and of the people who till the end stood beside me. And stand beside me.

Past is easy to erase and forget but it is the reason I/you stand here. It is the step I took and am happy about. It is the crinkled story I sometimes regret.

Someone once told me that weigh the still broken and fixed, hold the past as smeared and good times, remember to see both the sides.

Someday when I'll be gone. I think I'll be found stitched/free inside the pages of my verses and between the alphabets I pronounce.

There is no end of words that exist. But my words limit here. My past is created each second and it's an incomplete life with so much poetry still left to be written.



Artificial Intelligence (AI) is here and all around us. Oh, yes! It has achieved remarkable feats. Pretty much so!

We will see Artificial General Intelligence very soon. Perhaps not!

The history of AI can be traced as far back as the time when the term wasn't even coined. One can at least date back the crazy notion of machines embodying a human-like intelligence to Samuel Butler's 1872 novel *Erewhon*. The idea has had an immense liking in the science fiction genre, both utopian and dystopian, appearing in countless written works like Darwin among the Machines, Frankenstein, and on the silver screen in movies such as Blade Runner, 2001: A Space Odyssey, etc. On a more concrete side, the automation of computation first made its mark in Charles Babbage's Analytical Engine. In 1843, Ada Lovelace, a close collaborator of Charles Babbage, remarked on the invention: "The Analytical Engine has no pretensions whatever to originate anything. It can do whatever we know how to order it to perform. Its province is to assist us in making available what we're already acquainted with." Later, in his milestone paper "Computing Machinery and Intelligence" in 1950, Alan Turing quoted Lovelace and contemplated whether general-purpose computers could be capable of learning and originality, and concluded that they could. The Turing Test presented in his work then shaped AI in years to

come.

In the following years, AI made a tremendous buzz in the scientific community. In 1955, a Checkers playing program by Arthur Samuel appeared on television. Simultaneously, starting from 1954, the government aggressively supported efforts at machine translation between English and Russian, primarily because of the Cold War. Noam Chomsky's exciting work in grammar was streamlining the translation process, and researchers were optimistic that an imminent 'breakthrough' was near. Further, in 1956, the famous Dartmouth Summer Project coined the term Artificial Intelligence, and in the same year, Rosenblatt came up with perceptrons (the building blocks of modern deep neural networks). On the perceptron, New York Times reported: "The Navy revealed the embryo of an electronic computer that it expects would be able to walk, talk, see, write, reproduce itself and be conscious of its existence." Marvin Minsky, a forerunner in popularizing the symbolic AI approach, claimed in 1967: "Within a generation ... the problem of creating 'artificial intelligence' will substantially be solved."

However, most advancements in AI were met with disappointment. It was soon realized that the difficulty in word-sense ambiguity (or incorporating commonsense knowledge) had been profoundly underestimated. By 1966, the National Research Council of the United States con-

cluded: "machine translation was more expensive, less accurate and slower than human translation." Parallelly, the connectionist approach to AI saw the inability to solve the XOR problem, a dooming example of non-linear separable problems. In 1973, the Lighthill report by the British Science Research Council on the state of AI concluded: "in no part of the field have discoveries made so far produced the major impact that was then promised."

#### First AI Winter

The combinatorial explosion of enthusiasm towards the potential of AI followed by disappointments from machine translation, roadblocks in the progress of perceptrons, and the Lighthill report, together resulted in what is called the first AI winter (analogous to nuclear winter). Government support was ended, careers destroyed, and research stopped. The winter lasted for a few years until the 1980s when the expectations were again high.

The 1980s saw the rise of 'Expert Systems' adopted by corporations worldwide. These systems were handcrafted with 'if-else' rules developed by surveying experts and proved incredibly useful in areas such as financial planning, geological exploration, medical diagnosis, and circuit design. This time, the focus was on creating commercially viable products. Additionally, large conferences such as AAAI started, and tickets were rapidly



sold out. In 1984, Businessweek published the headline 'AI: It's here'.

### Second AI winter

In 1984, John McCarthy criticized expert systems because of their lack of common sense. In 1987, the market for specialized AI hardware collapsed. This hardware was used to process LISP, the preferred language for AI. Additionally, many tasks in vision and speech were too complicated for engineers to design rules for, especially the manually coded edge cases. By the early 1990s, these systems were found to be hard to scale, extremely expensive in maintenance, and quite limited in usability and scope.

The failure in meeting expectations again resulted in a drastic decline in research funding, and many AI companies shut down.

### The current state of AI

Although deep learning as a subfield of AI has existed for quite some time, it rose to prominence only in the 2010s, with the increase in both available data and computation power. Within the next few years, we have had revolutionary breakthroughs achieving (i) Near-human-level image classification, speech recognition, handwriting transcription, autonomous driving, (ii) improved machine translation and text-to-speech conversion, (iii) improved natural language understanding, (iv) superhuman Go-playing.

We are still at the stage of exploring the potentials of deep learning. But could it be that we are at the cusp of the third AI winter?

### Hype Cycle

Hype is common in many emerging technologies, such as the railway mania of the 1840s or the dot-com bubble of the 1990s, or the recent bitcoin bubble of 2017-2018. The AI winters have been a result of a similar hype, starting with the over-inflated promises by developers, unrealistically high expectations from businesses, and extensive promotion by the media.

#### How do Hype Cycles work?

A Hype Cycle typically breaks down the life-cycle of a technology (or event) into five phases:

1. Innovation Trigger: When a technology breakthrough shows its potential. This phase is marked by proof-of-concept, media publicity but lacks commercial viability.
2. Peak of Inflated Expectations: The success stories from early publicity make the rounds. But most businesses fail to acknowledge a large number of accompanying failures.
3. Trough of Disillusionment: Interest declines and promises fail to deliver. Investments dwindle.
4. Slope of Enlightenment: Practical business use cases of technology start to crystallize. Pilot projects get funded.
5. The technology reaches a mainstream adoption phase. Market applicability of the technology and relevance starts getting paid off.

### Analyzing the Gartner Hype Cycle for Artificial Intelligence, 2020

Every year, Gartner releases a Hype Cycle of various subcomponents of AI. It is an incredibly useful report

to judge how the current AI fare in terms of actual business applicability, unlike the media publicity that overshadows most of AI research. You can take a look at the graph using this link:

[bit.ly/ML-graph](https://bit.ly/ML-graph)

While the concept of Artificial General Intelligence is still at least ten years away from maturity, computer vision, natural language processing, chatbots, and deep learning, in general, are all past their peak of inflated expectations. One can also see that autonomous driving, in spite of all the feats that we have achieved, is still a hard problem to solve in unconstrained environments, and will take longer to become mainstream.

Additionally, many newcomers in the hype cycle are still in the innovation trigger phase. These include ideas such as AI governance, Augmented Intelligence, generative AI, etc.

In conclusion, as Svetlana Sicular, VP Analyst, Gartner has phrased it "If AI as a general concept was positioned on this year's Gartner Hype Cycle, it would be rolling off the Peak of Inflated Expectations. By that, we mean that AI is starting to deliver on its potential, and its benefits for businesses are becoming a reality". Although it is good news as we see that AI is finally materializing into an impactful technology for businesses, the world must tread the trough of disillusionment carefully, or a third AI winter might be imminent. 🚨

**Shresth Verma is a Data Scientist at UnitedHealth Group.**





Most of us have never been to forests, nor stopped by a snow-covered lake alongside a beautiful hut. But when Robert Frost, while talking about the temptations of a tired traveller tells us that,

*The woods are lovely, dark and deep.*

*But I have promises to keep,  
And miles to go before I sleep,  
And miles to go before I sleep.*

It suddenly becomes way too personal. The story is no longer just about a lone traveller, and it is about each one of us at a deeply personal level - for who among us has not abandoned the sweet surrender of rest and decided to persevere through a painstakingly hard night for something that was too important to be taken lightly?

This symbolism is what I wish to talk about; how words add life to the little things of life - how the annoyingly, bright sunshine sometimes becomes a symbol of hope. How ordinary sentences become battle cries. How a simple song about saying goodbye to the love of your life while you go to fight for an impossible idea becomes '*Bella Ciao*'.

Symbolism adds layers. It lends a deeper meaning to the sentences that already mean something deep. I will give another example because what better way is there to talk about the worth of words than to borrow a few verses from William Wordsworth? In his poem 'A Danish Boy' (which, as is the problem with many artists, he never

completed), he talks about a young prince who had to run away from his homeland because a battle had broken out, and had ended up seeking refuge in a desolate valley. To sum up the character of our young prince he says:

*"From bloody deeds his thoughts are far;  
And yet he warbles songs of war."*

Don't these lines aptly capture both the innocence and the damage that the boy must've gone through? And yet, even though we readers are neither royalty nor have we ever been to war, these two lines somehow represent so many of us - because although we don't go about wronging the world, we can never forget all how the world has wronged us. And now that I have hopefully convinced you how relatable the unknown worlds webbed by words can be, let me bring you back to the darker reality.

As time passes by, I feel that we as a society have changed our preferences in the kinds of symbolism we appreciate. We have gone from rewarding those who personified objects to praising those who objectify people.

Long gone are the times when we used to dance to beautiful ballads, and forgotten are the folklores that taught us to be kind. Far too many of us dance to derogatory lyrics, pretending that good beats justify all the dehumanizing words.

How come so many of us accept what we are so passionately against? How can someone in their

right mind gleefully dance to songs that blatantly objectify women? How can someone not feel disgusted when a song justifies ogling and catcalling and stalking? How does calling someone "maal" not irk you? *Because we don't realize the worth of words.*

We say it's just a song, but words are often so much more - they are the building blocks of a person's thinking. Words have sparked revolutions. They have made the meek courageous, and at the same time, they have been used to oppress the innocents.

Maybe one reason why it's taking our society so long to accept that "It is okay for boys to cry" and "No means no", is because too many people believed Mr Bachchan when he said "Mard ko dard nahi hota", and far too many people thought consent doesn't matter because even Sharukh didn't care whether Kiran said yes or no.

And people will remain addicted to smoking because no one sings a song about what it is like to lose someone to it. About how torturous the cough gets, about how painfully hard it is to walk to a cancer ward, about how it feels to watch their last hopes of being happy to get mercilessly burnt by a treacherous smoulder. You see, too many people are still paying the price of some parts of the society deciding that a cigarette represents coolness - and almost every other singer and writer carrying on the trope, which is why we all must think about what kind

LIFESTYLE

ABHISHAR v10.0 | LIFESTYLE

of things we validate because the content we accept today has a heavy influence over what we think tomorrow. It personally took me a long time to realize how much weight words carry, to truly understand that depending upon how they are used, words can both help in healing incurable wounds and in piercing deeper than a sword.

And it was tough to accept that I too had at times been on the wrong side of things. The guilt is tremendous - but accepting that one can be wrong is the first step at trying to rectify your past mistakes and at being sceptical about every quote you read and every song you hear.

After all, not every humorous joke deserves to be condoned; some deserve to be condemned. Sometimes when people hide behind the

veil of 'satire', they are just condescending, and that's not something anyone should have to put up with. It is important to draw the line between "laughing with someone" and "laughing at someone", and then to defend it fiercely. Because no matter what anyone says, words are no less than wielding the Mjölnir - which is what makes it so vital for us to choose them carefully.

To end this, I will borrow verses from yet another poem that uses symbolism in a hauntingly beautiful way - it is a tragedy that lines like these are not recited more often. The poem is about six people sitting around a dying fire on a cold winter night. Each of them has a log of wood, but none uses it to keep the fire alive.

The first one doesn't because he

notices that one of the other five was black. The second one doesn't because someone in the group wasn't of the same religion. The third was poor and hated the idea of his hard work warming the idle rich, while the rich one thought of all the ways he could keep his wealth from benefiting the poor. In an attempt to take his revenge, the black man too let the fire die, while the last one refused to give his log just because no one else gave up theirs. And as the cold took over them,

*"Their logs held tight in death's still hands,*

*Was proof of human sin.*

*They did not die from the cold without,*

*They died from the cold within."* 🔥



Sakshi Dhamija  
BCS-2019

**DEDICATED TO  
BATCH OF 2020**



Do you know what's the best ending?

One where you don't know  
That it has ended.

When the end is mistaken for just  
another mid-day massacre,

When you'll see a set of parentheses  
around those years, that you didn't  
know existed,

When memories will become the  
wounds you can't quite remember  
enduring,

When one day you'll sit under trees  
that would never wither,

And a bird's fire-fangled feather  
will dangle down,  
With music that's unknown to you,  
A foreign song, without human  
feelings.

Your mind will stand at the edge of  
space,

And then, beyond the last thought,  
In the bronze distance,

Will rise,  
A text embedded deep in your  
neurons,

Smile! As now you are in  
ABV-IIITM!

# LIFESTYLE

ABHISHAR v10.0 | LIFESTYLE

**07**

## APPROACH FREELANCING WITH THE RIGHT ATTITUDE

Gaurav Ojha  
IPG-2010



I started freelancing in 2012 - the second year of my IPG course at IIITM. My first freelance gig was to create a compilation of dance videos for a client in Austin for \$50. It wasn't easy to land by any standards, but I loved the idea - find exciting work to do and get paid. Simple! Is there anything more one could ask for?

This article summarizes my answers to questions I get asked nowadays by developers desirous of venturing into the freelancing world. I'll try to make this quick because who's got the time for reading literature? ;)

So let's get right into it -

### 1. How should I start freelancing?

Step 1: Find what you're good at - confused about Python v/s PHP v/s Java? Web v/s Backend v/s Full-stack? Systems v/s Ops v/s Applications? Photography v/s Coding? Just write down everything you can do.

Step 2: Understand the demand - Go to ANY freelancing website (my recommendations later, hold on) and search for the skills you've written down. Do you see good demand for it? Do you see others doing it and making money? Can you do the same or better? Eventually, there's always something that YOU can do better than everyone

else. For now, just find the demand. Step 3: Reach out - a fruit seller can get fruits sold in two ways - 1. By roaming around and finding people who want to buy OR 2. By just existing in a busy fruit market. Now, of course, you're not a fruit seller. But as long as you're selling something, you better identify which approach you want to take.

#### 2. Which sites are good?

It depends on the approach you like, based on Step 3 discussed above. I like both methods, so I vacillate, but you have to try both to see what you want.

- If you like the first approach - Freelancer.com & Upwork.com are good.
- If you like the second approach - Fiverr is excellent.
- If you believe you're a pro of the first approach - Hubstaff is incredible.
- If you believe you're a pro of the second approach - Toptal & Turing are fantastic.

Of course, there are pros and cons of each site. For example, fruits I buy from Hypercity are sometimes overpriced, but someone has to pay for the air-conditioned shopping lanes, right?

#### 3. Can I do freelancing full-time? Is freelancing for me?

- Do you care about what people say? (If YES, stop right here)

- Are you okay with a non-steady stream of income? (If you're confused about this, it's a NO; still, you can try freelancing, but don't put all your eggs in one basket)

- Do you like being your own boss? (Only counts if you're screaming YES)

There are no stereotypes, and these are more like prerequisites for long-term viability.

### 4. How important is communication?

Very important. But Communication != English. Tyrion Lannister's height didn't stop him from making tall claims and living up to them, so you better stop making excuses.

### 5. In which year should I start?

It depends on how much time you have and how much money you need. I had a lot of time, and I needed the minimum amount of money to survive. That pushed me to start. Just listen to your heart and do what it says. Some of my peers are starting now, so it's all about what you like.

If this article helped you make a choice that unblocked you, that's all I was aiming for. Good luck and shine bright like a diamond. 🌟

**Gaurav Ojha is currently the Assistant Project Manager for a project under IITBombayX.**

"Entrepreneurs are great at dealing with uncertainty and also very good at minimizing risk.

That's the classic entrepreneur."

— Mohnish Pabrai

# CAREER MANTRA















ABHISHAR v10.0 | CAREER MANTRA



Sumit Shinde  
IMG-2019

## "MR STARK, I DONT FEEL SO GOOD!"

08

*"Mr. Stark, I don't feel so good!"*

*"I don't know. I don't know what's happening."*

*"I don't wanna go!"*

*"I don't wanna go!"*

*"Sir, please, I don't wanna go!"*

At this moment, somewhere deep down, everyone felt sad seeing their beloved Spidey crumbling low, and this remains an iconic scene from the Marvel Cinematic Universe.

Well, here is a fun fact: Spider-Man was rejected as a superhero!

Shocking it seems, but it is true. In June of 2017, Stan Lee sat down with the students of the University of California and told them the story of how the iconic Spider-Man came into being and how the idea was almost squashed. As quoted :

*"I'm not going to make a long speech, but I'm going to tell you I was told to tell an anecdote. Anecdotes are easy. So I thought to myself, what kind of anecdote can I tell these people who really have more important things to do, and I figured I'm going to tell you how Spider-Man came into being. It's a true story, although sometimes it's hard, even for me to believe it."*

Lee told the class that he got the

idea when he saw a fly on the wall and thought about the powers that went along with that ability. He went through a variety of names until he happened upon Spider-Man. Then he thought of making him a teenager because not a hero then, was one. He then gave Peter Parker some personal problems and went to his publisher with the idea.

*"Stan, that is the worst idea I have ever heard!"*

This was the reaction Lee got for his new superhero, and the publisher stated that it was a terrible idea because people hated spiders, teenagers could only be sidekicks, and superheroes are superheroes. They are not supposed to have problems. Then at that time, Marvel's Amazing Fantasy series was failing and was about to be shut. Just to get Spider-Man out of his head, Lee decided to put Spider-Man in the series. When the sales figures came out, the publisher came running into Stan's office and said, *"Stan! Stan! You remember that character Spider-Man that we both loved, let's do a series on him"*. Comedy isn't it! Then Stan continues -

*"Now, why am I telling you this? If you have an idea that you genuinely think is good, don't let some idiot talk you out of it. Now that doesn't mean that every wild notion you come up with is going to be genius, but if there is something that you feel is good, something you want to do, something that means something to you, try to do it because I think you can only do your best work if you're doing what you want to do."*

Phew! Stan did a good job. Be like Stan! :)

The thing is, if you believe in yourself, no matter what happens, you can achieve what you want. You'll be pulled down a lot, but your stubbornness, perseverance, and self-belief will take you to the top. Had Wilma Rudolph not believed in herself, she would have ended up like any other polio patient rather than being an Olympic champion. So buckle up and hustle, keeping this in mind:

*"Don't be satisfied with stories, how things have gone with others. Unfold your own myth."* 

**"No matter how buried it gets, or lost you feel, you must promise me, that you will hold on to hope and keep it alive. We have to be greater than what we suffer. My wish for you is to become hope. People need that."**

— Peter Parker (Spider-Man)

## LIFESTYLE



# AASF HIGHLIGHTS



**2007-09**

AASF CONCEPTUALIZED  
"COALESCENCE OF KNOWLEDGE AND SKILLS"  
LOGO OF AASF  
OVERNIGHT CODING CONTEST  
"PRAGYANKI" MAGAZINE OF AASF

**2013 -15**

AASF-ICPC  
COMPOSITION DE'L IMAGE  
ROBOTICS WORKSHOP  
HARDWARE WORKSHOP RE-INTRODUCED  
ANDROID HIQ  
WEBSITE LAUNCH

**2019**

INTRODUCED NODE.JS IN WEB WEEK  
CORPORATE2CAMPUS  
JAVASCRIPT BOOTCAMP  
BLOCKCHAIN HIQ  
TECHNICAL BLOG WRITING COMPETITION

2000

2003

2006

2009

2012

2015

2018

2021

**2003-06**

INAUGURATION OF IETE STUDENTS' FORUM  
PAPER PRESENTATION CONTEST  
'ABHIGYANAM' RENAMED AS 'ABHIGYAN'  
HARDWARE WORKSHOP  
RENAMED AS IIITM'S STUDENTS' FORUM

**2010-12**

GERMAN LANGUAGE  
SESSION, ANDROID,  
FLASH, JAM  
ABHISHAR VOL-1 LAUNCHED  
ONLINE PROGRAMMING CONTEST  
FOR FIRST YEARS  
GOOGLE, SPORTS  
QUIZ, AAKRITI

**2016-18**

HACKATHON  
RJIT AND MITS CHAPTERS  
WEBSITE RELAUNCH WITH  
STUDENT PROFILES,  
PYTHON-GIT HIQ  
GAME DEV. HIQ  
ONSITE HACKATHON  
DEVELOPERS' CIRCLE AND CODING GROUP  
WINTER PROJECTS

# PUZZLE



# ELITE

## DOWN

01 One of the pioneers of sci-fi, Jules \_\_\_\_\_

02 In the movie "Back to the Future" the car was fitted with \_\_\_\_\_ capacitor.

05 Monster from Stranger Things.

06 The virus that takes over the world in "The Maze Runner".

10 Where is the Soul Stone in Avengers "Endgame" located?

## ACROSS

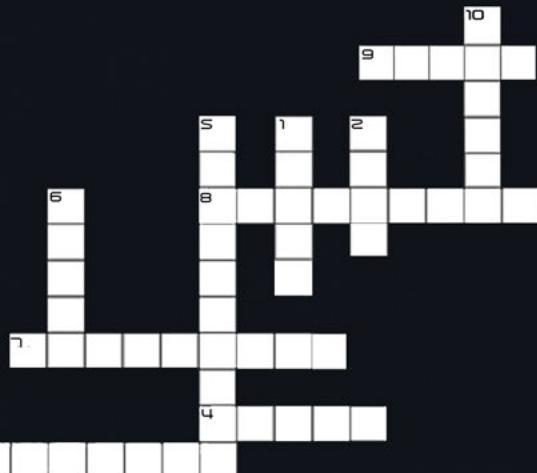
03 The villains in the 2007 version of the movie "Transformers" are known as \_\_\_\_\_

04 The game played by the protagonist in the movie "Ready Player One".

07 Where do the characters get stuck after reaching the singularity in Interstellar?

08 Who destroyed Mjolnir (Thor's Hammer)?

09 The name of the spaceship in the movie Wall-E.



## WHY I WRITE ABOUT AND SHARE MY PERSONAL FAILURES AND EXPERIENCES

Back in the days when I was still in IIITM, the institute had observed the 8th National HR Summit. Several renowned human resource industry majors had gathered and delivered insightful talks on germane issues and subjects. The aim was to help students understand what the industry expects from the new and budding professionals. Their talks imparted the students with an idea about how they could prepare themselves for the professional world.

That's what some of my seniors told me about the summit. I wasn't present at the summit, and thus am no witness to any of that.

However, I can bet that almost everything they told me about the summit was, to some extent, true. After all, the very aim of the summit was to provide the students with an insight into what professional life is like and how they can brace up and prepare for the same. But, there was more to come from one of my seniors. While confabulating over the summit, he told me about what happened when he raised a question to one of the dignitaries. After the talk, behind the stage of the auditorium, my senior asked the HR from Muthoot Finance, "Sir, we also sometimes talk about similar philosophy and life approaches with others. But, no one pays any heed to us. However, when you say the same thing, everyone observes and pays attention. And, once you have delivered the lesson, everyone claps as well!"

Why does this happen?"

To this, the sage man replied, "I make money in big numbers. I have earned a revered stature and position over several years with my hard work. So, now when I talk about life and philosophy, people think that this man is right! They think this man must know something that we don't. When I talk on these subjects, people envision the immense possibilities and greatness for themselves by thinking of my life. They can see that those tenets made me what I am today. And, sometimes, that brims them up to do something big! All this because I have proved myself on those grounds in the real world. What do you have to back up your words with when you talk of similar thoughts on life and philosophy?" I loved the thought every bit. If you don't have a story and a vision to back you and your ideas up, why would the other person believe in you? When you share a life lesson with someone, you have to make the other person believe in it. They should be able to see your story in you. The other person must get immersed in the thought and be imbued by every bit of it.

Therefore, when one tries to proffer wisdom to someone, they have to show how they achieved the same in their life and the benefits they reaped out of it. Else, that talk will end up becoming nothing more than trash talk because listeners won't buy it.

This is the reason why I have been

Jayant Shilanjan Mundhra  
IPG-2014



deeply impacted by the author James Altucher. I admire him and his approach towards life. He shows people that he was miserable, but is not anymore. He overtly acknowledges his mistakes, grave follies, and blunders. He tells others that he was going to commit suicide, and the thought struck his mind not just once but several times! He shares how he blew off tens of millions of dollars, failed 17 companies he founded and wrecked a marriage, broke off another one, and lost everything.

Then he tells them what he did to make things right again. He shares the wisdom nuggets lessons he adopted. He also discloses how his lifestyle was impacted for the better. He then imparts to the people the vision of how amazing their life can be from what those are in the present. He then tells them how he finally ended up making millions of dollars yet again, wrote over 18 books, also started doing stand-up comedy while parallelly running a fabled podcast and a blog with multiple millions of views every month! And, if all of that wasn't enough, he also sits on the boards of multiple companies!

And, that brings me to the point. Drawing down from my father's genes, I have been blessed with a decent ability to write. Coupled with my dedication to this trade on a day to day basis, I have over years built a followership of more than 22k readers on Quora. And, there have been multiple instances when



several readers have reached out to ask one question- "Why do I often write about my personal experiences and memories in my writings? Why do a lot of my writings elaborate about how I failed at a certain thing, and how it impacted me over time, and what change it brought about in me?"

I do that because I acknowledge that I was a mess, and my life was full of crap at a time. I was botching up not just mine but also the lives of people associated with me. I was a pitch-black box of contagious poison! There were things that, if I had known, could have added a lot of bliss to my life and have helped me fight my pains. Those valuable lessons and realizations could have helped me fight back that poison. But haplessly, I was not aware of those, so I had to discover those on my own as almost everyone does

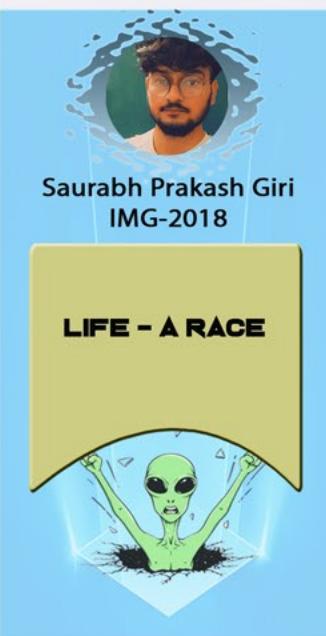
for themselves. It took a lot of time. But when I did discover those golden nuggets, I applied them to my life. And, the results could not have been any better.

I do that because I needed to know a lot of things back then, but I did not know any of those. I wish that others in similar arduous positions as the ones in which I was should not have to go through the same tough phases of life all alone. That is why I try to share my tales from those days in my writings, to spread hope that irrespective of how bad a state one may be in, they can make their lives a lot better by improving upon how they choose to act about it. But, most importantly, I do that because, as I grow up and climb greater laurels in life, I wish for my journey to become an example for anyone and everyone to look back to and attest, that if I could make

such a big comeback despite so many falls, failures and wrongs, then anyone can.

I know this may seem far-fetched. Some may even call it the reckoning of a narcissist. But, I see it as a person's zeal to build an example like that HR and esteemed author I mentioned above. However, there is just one difference between them and me. They have already achieved so much, and I have just begun on my course. But, good practices are no one man's fortune, and no fortune is built in a day. This is how I am building mine. By documenting one chapter of personal failure and success at a time. Period. 🚀

**Jayant Shilanjan Mundhra** is currently working as Analyst at Bain & Company.



Life is a race and every day is a lap,  
Everyone tries hard but is unable to  
fill that gap.

In need of a break, in need of a nap,  
No answers to be found in books or  
maps.

You start the race, when you are  
born,  
And it only ends when you are gone.  
For some, little sprint and they are  
done,  
Some are able to run a marathon.

It is full of hurdles, it's full of jumps,  
You cross a pit and then, into a hurdle  
you bump.

Life is cruel and not a dump,  
It never lets you know what is to come.

Filled with healthy, wealthy, miser and  
wise,  
Everybody with every shape and size.  
And we all have to do it, we have no  
other choice,  
We all have to run the race of life.





When I started with the Web, the term “React.js” struck me. After googling, I concluded it’s a front-end framework. Were HTML-CSS-JS not enough? What’s unique about this? What are the things it caters to? What were the problems that led to the rise of React? A quest for finding all these answers made me learn the framework. Following is a brief introduction to React’s way of doing things. Before React.js, Facebook was confronted with a significant UI task. It wanted to update the news feed with people simultaneously using chat. DOM operations are quite expensive in terms of performance, and any application that has much of DOM operations in the background will render slowly. Also, the Ads change, the trending topics list changes over time, which leads to many DOM operations running in the background. If the page has data that changes over time at high rates like lots of people commenting on a post, likes being generated, etc., then there is a requirement for DOM updates to be swift and reflect in other parts of the UI if using the same data.

This gave birth to React. It is a user interface library that allows writing HTML within JavaScript. A concept called virtual DOM solves this problem. It stores the ideal representation of the UI, which is synced with the real UI and updates only the components that have changed. This is possible because

the components provide the advantage of breaking down the complex UI into simpler abstract components. These components are just like HTML tags, where state variables can be passed down to the child components as props or properties. Another advantage that React components introduced is reusing code components of a different level, saving time.

The technologies are constantly evolving, which can be disadvantageous. This disadvantage is aptly described by developers Michael Jackson and Ryan Florence on Modern Web: “In case you didn’t notice we’re driving a car here with two flat tires, the hood just flew up in front of the windshield, and we have no clue what’s going on anymore!” The environment constantly changes, and developers must regularly relearn new ways of doing things.

#### An unintended consequence

Apps built by React are usually built as a single page application (SPA). You only load the application code (HTML, CSS, JavaScript) once, and when you interact with the application, what generally happens is that JavaScript intercepts the browser events. Moreover, instead of making a new request to the server that then returns a new document, the client requests some JSON or acts on the server, but the page that the user sees is never completely wiped away. Unlike traditional multi-page apps, SPAs are

fast, responsive, and provide users with a smooth linear experience.

There have been concerns that Google and other search engines can’t index or poorly index dynamic web pages with client-side rendering. It is because Google web crawler can easily scan HTML pages, but with JavaScript SPAs, first, the page has to be parsed into HTML, which is a slow process. Another reason is that the page is loaded only once. The rest of the contents are dynamically loaded as per the interaction with the browser. So, if a bot is crawling the page when the content hasn’t been loaded, the bot will see an empty page. Hence, a significant part of the site won’t be indexed. Don’t worry! This can be solved using server-side rendering when required.

I liked using React because it is just JavaScript. Your JavaScript skills will make you a React developer. So, no extra effort is needed if one’s competent in JavaScript. I found it very easy to learn. It simplifies making dynamic web pages. When working in a team, React’s component-based approach simplifies things.

When one starts learning something new, there’s a feeling of uncertainty that can be overcome only by diving into it. Remember, no learning ever goes waste.

“Always be ready to learn, unlearn and relearn” -the mantra that leads to learning.





Amit Samdarshi  
IPG-2010

## STARTING MY YOUTUBE CHANNEL: AMIT SAM & CO.

14

This Pandemic gave us a chance to work on the things that we always wanted to do. For me, it's my YouTube Channel, 'Amit Sam & Co.'. The channel intends to deliver value to students & professionals by sharing real-life career & lifestyle stories. In the last 11 weeks, I've published 11 videos and reached 1.4K subscribers on the channel. Building and sustaining the channel has been a creative, challenging, and satisfying experience for me, and I'm glad to share that with Abhishar readers.

**Inception** - The intention was to create something that makes sense, aligns with my interests & expertise, and brings novel stories to the viewers. Though I've been an engineer for five years and been an expat since the beginning of my professional life, I have this awareness that I'm not the person who knows it all. This self-awareness kept me grounded and motivated me to team up with my trusted buddies from school, IIITM, and workplace, who come from diverse areas of expertise, and bring them under the umbrella of 'Amit Sam & Co.'. So, the word Co. in the channel name doesn't stand for Company, but Companions.

**Collab Kick-start** - Since the beginning, I was aware that I am not the guy who can continue to make videos week after week without having a substantial subscriber base. So even before uploading my first video, I had to find a collaboration with an established Youtuber

that can get me the first few subscribers. I collaborated with Har noor Singh, who runs the career channel, 'Singh in USA', and made a video on my life in Singapore as a software engineer. The video contained the link to my YT channel, where my friend & I made the first video on the companies hiring in Singapore during COVID. The catchy topic of our first video, powered by an apt collaboration, gave me my first thousand subscribers.

**Sustaining Interest** - It was essential for me to keep bringing content that can help viewers make informed career decisions, grab the right opportunities, and feel inspired by the folks who have already done something in their lives. This is the point where my companions joined me video after video to share their career stories in our Co-Cast series. I also invited a few inspiring guests to feature in our Guest-Cast series. Together, we covered topics like freelancing, MBA dilemma, Amazon LPs, overseas-placement and education story, and many more. Career videos were well-complemented with lifestyle videos that mainly focused on the expat lifestyle in Singapore. Not all videos engage everyone, but it's the consistency of the creator that sustains their subscribers' interest and eventually grows the channel.

**Learning** - Lastly, I'm jotting down my key learnings that can help a new creator:

1. Pick a theme that you know well.

Ask, "Can I produce 100 videos on this theme?"

2. Start when you are not ready. The perfect moment will never come!
3. Any camera is good enough to start.
4. Using a mic is highly recommended. Even your earphone mic can do the job!
5. Start with Pro software. Get hands-on with the best!
6. Be consistent. YT algorithm favours those who upload periodically and at least weekly.
7. Reply to as many comments as possible. Inspire, not ask, to spread the word.
8. Comments give you the best ideas for your future videos.
9. Welcome feedback and use YT Studio analytics to understand what's not working.
10. Do NOT think about Monetization. It's the single biggest demotivator!

**Life Lesson** - Anything did by you that can sustain in this world, even after you are gone, is your creation. Even your code! Creativity is the one thing that makes us different from animals. Creative people don't just work for food and have a family, like animals. They are the ones who really take the human race forward. So find your creative space and give a reason to the coming generations to remember you. 🚗

Amit Samdarshi is currently working as Senior Software Engineer at PayPal Singapore.

**LIFESTYLE**

ABHISHAR v10.0 | LIFESTYLE

# HOW COVID-19 LED THE SECOND DIGITAL REVOLUTION IN INDIA

Sahil Jitesh Gangurde  
IMT-2019



Covid-19 has thrown the world into an unprecedented spiral. Things have gotten worse economically and socially, but one sector has seen exponential amount of growth in this pandemic, i.e., the digital sector.

After the launch of the Digital India program in 2015 and witnessing low rate internet plans, it became apparent that digitization is inevitable. Technologies such as BHIM, DBT were introduced to promote socio-economic parity. This led India to become world number one for the highest volume of digital transactions with over 100 million digital transactions a day with a volume of 67 billion dollars (data collected from Reserve Bank of India). This first wave not only led the digital renaissance but also gave a new mechanism for speed and security, which had been a significant problem.

With the lockdown placing immense strain on the economic conditions of different sectors, schemes such as Jandhan-Aadhaar-Yojna provided means to transfer benefits to the society via Aadhaar (digital identifier for citizens of India). Benefits of the schemes released by the government are now seamlessly transferred into bank accounts with a high level of integrity, which also gives rise to a set of APIs

(Application Programming Interface), which non-government agencies can also effectively utilize and set a foundation for their apps.

Keeping track of Covid-19 patients in a country like India, with an estimated population of 1.38 billion, is a tremendous job. To effectively track and monitor this, the National Informatics Center of India (NIC) created the Aarogya Setu app having over 98 million users. From satisfying healthcare needs in remote areas to building health care policy based on collected data, the technology fulfills many roles. With the use of technology, state governments are also managing to deliver equipment with high demand, such as N95 masks, personal protective equipment (PPE) suits, and air ventilators.

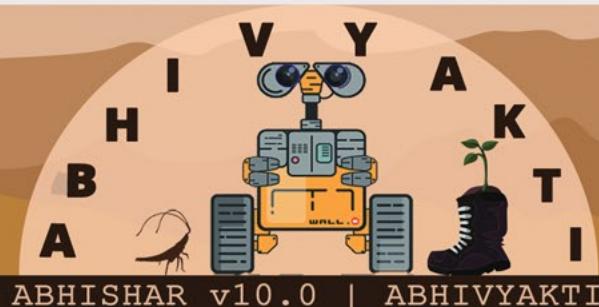
This pandemic was a wake-up call for companies who were resisting the digital change. Digitization brings scalability as a feature that helps a company with its growth even in the current situation. Customers are now relying heavily on online markets and stores. Businesses have to be scalable and need to cater to all the market needs to survive. "Digital boost" is now no longer a luxury but a necessity. India has seen a surge of online orders from various delivery agencies like Amazon and Flipkart, which enabled small scale

businesses to operate smoothly without any physical necessity of customers to mark their presence in the market. Companies are starting to realize business interdependences and are coming together with the phrase "we are all in this together". Shared technologies are also leading to symbiotic relationships between businesses.

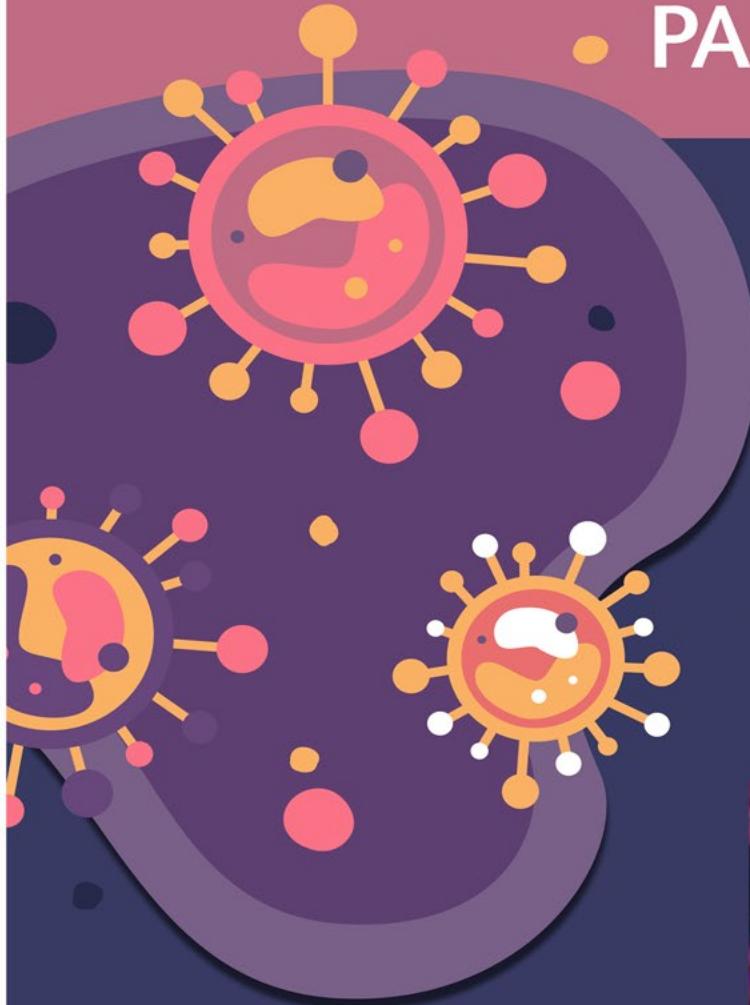
With the help of several tools and technologies, innovative ideas are having an impact on livelihood and services like education. Currently, India has the highly funded educational startup Byju's, which, when paired with the low-cost internet plans provided by the largest telecom company Jio, gives a boost to an uninterrupted education system. DIKSHA, a government Edu-app, serves as a platform for school education. Research institutes have started pushing their boundaries and are going above the threshold level to find a cure for this disease. From the discussions above, it is apparent that the Corona outbreak has catalyzed the already ongoing digital change in India and the world. These changes are going to be deeply rooted and will continue to remain as they are even after the pandemic is over. To conclude, the digital revolution has brought hopes to billions of lives and will continue to impact at a larger scale positively.

## Did You Know?

It is a myth that an N95 respirator and a surgical mask provide the same protection.



# PANDEMIC DIARIES



"From recovering ecosystems to new ways of learning, there are silver linings to the global pandemic."



Today, the world is facing serious impacts in terms of social, economic and political aspects. We are in need of hope and positive energy more than ever.



## CORPORATE FLEXIBILITY



Flexibility will be the new mantra—where people will be given more freedom to choose WFH. A Gallup survey revealed that 54% of U.S. workers would leave their current job for one that allowed them to work remotely.

## ORDERLINESS



According to Gallup IACT survey that was conducted recently, 87.2 per cent of Indians have become vigilant towards their personal hygiene.

## VIDEO VIRTUOSOS



The developers behind Zoom, WebEx, Hangouts, Skype and other video communications tools made the grand WFH experiment possible.

## IMPROVED CLIMATE



The research, published in *Nature Climate Change*, shows that emissions from surface transport, such as car journeys, accounted for 43% of the total decrease.

## MORE DIY's



People have the need and time to do things themselves, as customers realize cost savings and even find enjoyment in doing their own hairstyling, cooking, cleaning and gardening.



Pursuing MBA from a top-notch institute is a dream for many. Every year lakhs of aspirants apply to various national or international top-notch management courses, and less than 10% make it through. This craze is rightly justified as having a management degree adds to one's career significantly. Management graduates are some of the industry's highest-paid professionals who go on to become world leaders. However, the brand value associated with certain colleges brings some intangible benefits to its students, which separate them from the so-called 'rest'. This article is an effort to bridge the gap between the students from two opposite tiers of colleges. So, if you're one of the many management students who didn't make it into the IIMs, the Yale, the Harvard, the MITs of the world, then this article will provide you with some most important cheat codes to make use of your existing resources to ace your MBA program. These cheat codes will serve as a guiding point in your MBA journey, so whenever you feel lost, just come back to them and feel ready to conquer the world again.

The list is based on my personal experience and is not exhaustive but only indicative. But I am sure it will serve its purpose and provide you with enough dimensions to explore on your own.

## 1. Focus on your personality and not just on skills

If you really wish to end up as an

investment banker, consultant, advisor, etc., then your focus should not only be on your skills but on your personality too. Most of the MBA admits are engineering students with a lot of technical skills but poor personality. Please keep in mind that it is tough to crack managerial job interviews with a technical mindset. You may have gotten away with poor English-speaking skills or low confidence during your engineering placements, but it matters a lot more in managerial job interviews. You can begin by working on your speaking skills, your English language skills, and your personality in general. Don't be a bookworm; instead, explore new business ideas, business innovations, network with people through LinkedIn, talk to industry experts and HRs about their expectations from a new hire, participate in various events, get over with the fear of public speaking, etc. The two years that one gets during his/her MBA program fly past so quickly that by the time the importance of the points mentioned above is realized, it gets too late to make any tangible changes.

## 2. Get comfortable with using various problem-solving frameworks

MBA program equips the students with various frameworks to deal with real-life problems. These frameworks form an essential part of the MBA curriculum, which has real-world applications. Some frameworks are taught under mar-

keting, some under strategic management, or another subject for that matter over the course of two years. Focus on learning these frameworks not just theoretically but also learn about the situations where they were used by national or international companies. These frameworks are also useful for dealing with case study contests or interviews in general. So, make sure you always have an eye open for them whenever you come across one in your course. Some commonly used frameworks are net present value, CAPM, Porter Five forces, Four Ps, Five Cs, Value chain analysis, BCG matrix, STAR method for behavioral interviews, etc.

## 3. Use the internet extensively

This is one point where I want to focus more because students usually undermine the value of it. Most of the MBA books run for more than 800 pages, making it difficult to read and retain them. The solution to this problem is having a targeted approach. I will share what I followed to cover the entire syllabus of 2-year management program in half the time so that I can get extra time to devote to other tasks. Firstly, for a basic understanding of concepts, don't blindly follow the so-called reputed authors and titles. Those books are to be followed only for selective reading after having a basic understanding of the concepts. The best way is to use the IGNOU management material for MBA topics. It is short and crisp and covers 80-85% of the concepts

## CAREER MANTRA



given by reputed authors. Once you have mastered the basics, use the recommended books to solve the problems/case studies. MBA is more about applying your knowledge in the real world. The IGNOU texts are elementary to understand without the need of a teacher.

Secondly, make use of websites like Libgen to download reputed books and journals for MBA. It is an excellent repository for most of the MBA books. Thirdly, watch channels like Caspian report on YouTube to have an understanding about the happenings in the world. This general awareness will help you a great way in group discussion rounds and personal interviews later in your course. Also, start using websites like Glassdoor, LinkedIn, iimjobs, etc., instead of Facebook, Internshala, etc. For general awareness about the business world, you can download the digital fitness app by PWC or subscribe to the HBR newsletter to start with. You can also learn to use software like tableau, alteryx, etc.

**4. Participate in case study contests and learn the art of solving it**  
If you're an engineering student pursuing an MBA, you must be aware of the various Hackathons conducted everywhere around India and abroad. Well, what hackathon serves to the engineering students; case study contest serves to the MBA students. Solving case studies is an art that requires constant practice and effort. There is no right or wrong solution to a case study, but there can be multiple ways to achieve the optimal one.

Case study contests are organized by various B-schools in India and abroad. Even companies like PWC, Deloitte, SmartCube, etc., conduct case study contests every year to hire new talent. You will be required to solve a case study in your interviews or course projects, and participating in case study contests can help you bridge the gap between the two. Some basic material which you must refer to are (available on Libgen)

- a. Guesstimation 2.0 Solving Today's Problem on the back of a napkin – Patricia Edwards and Lawrence Weinstein, Princeton University press
- b. Case in point (10th edition) – Marc P. Cosentino, Burgee press
- c. Case Interviews Cracked – Sankalp Kelshikar, Saransh Garg, IIT Bombay

The above-mentioned books must be read if you wish to ace your interview for a consultant role, analyst role, strategist role, etc., wherever case studies form an integral part of the interview process. You can also choose any one between (b) or (c) if you have a paucity of time.

#### 5. Start your stock market journey

It may sound weird, but it's the most necessary cheat code for any MBA student. Starting your stock market journey earlier on will not only help you in acing the financial subjects of your course but will also develop your skills and acumen for investment banking and equity researcher roles. If interested, you can also take up your final year project on a

similar topic. You can start by going through videos on YouTube by CA Rachana Ranade, Pranjal Kamra, Pravin Khetan, and Power of Stocks' YouTube channel. For basics, you must watch the videos freely available on CA Rachana Ranade's channel (English) or Pranjal Kamra's channel (Hindi). I followed both and found both to be equally informative. Once you have covered the basics, start reading the business news through business news channels or mobile apps like money control or tickertape. Develop an understanding about the various financial ratios like P/E, ROE, ROI, etc., and learn about their significance in Indian markets. Research through the websites of NSE/BSE for authentic datasets and information. Once you are done with the basic understanding, only then move onto the technical analysis part, which can be easily understood by going through the videos by Pravin Khetan and the Power of Stocks YouTube channel. Use the tradingview website to practice a simulator's strategies using fake money but real data for at least 6 months before finally entering the market. The stock market is a long-term affair that requires patience and consistency. So, don't be in a hurry to conquer the world. Sharpen your axe before you chop the tree.

I hope all the FIVE cheat codes will help you get an edge over your peers and tackle the cutthroat competition. Cheers! 🎉

## CAREER MANTRA



## SCIENCE FICTION AND TECHNOLOGY: AN INFINITE LOOP

Star Trek - who knew this show would not only be a cult classic, inspiring generations but also predict future inventions. My father recalls that he wouldn't believe it when he saw images and information displayed on a screen that could be interacted with one's fingertips as a kid. Fast forwarding to today; he's using a smartphone, and the touchscreen is everywhere.

The Star Wars and Star Trek franchises deserve an article in their own right. But it's not just them. Works in science fiction have been predicting all sorts of innovations, some of which have become an integral part of our lives, be it atomic power, phones, and earphones. I even remember the cartoon show 'The Jetsons' showing something very similar to the present day smartwatch.

This makes it evident; the 200-year-old sci-fi genre inspires technology to be what it is today and tomorrow.

But what inspires science fiction? The sky's the limit when it comes to imagination. Unless you're in a sci-fi world, in which case, it could be space, an alternate world, or simply multiverses. The limit does not exist. And this is precisely what makes the genre so fascinating, attracting creators and consumers alike. The fact that there are endless possibilities and absolutely no bounds to whatever you can think. Take Jules Verne, for example. He's considered the father of science fic-

tion (a title he shares with H.G. Wells and Hugo Gernsback). When he tried to live his teenage dreams by (secretly) embarking on a ship and experiencing his life to the fullest, his father caught up with him (cue Give me some sunshine, give me some rain). He made Jules promise. Promise that he was to travel 'only in his imagination.' Of course, this could be an exaggerated account devised by his niece, yet it captures the genre's essence so well. As for Jules Verne, that man travelled all around the world (that too in 80 days) in his imagination. If that wasn't enough, he wrote about going under the sea, into the centre of the Earth.

How did he, a man on his way to becoming a lawyer, not just write about travel far and beyond but also make accurate predictions along the way?

Jules Verne was merely human. For it is human to be curious, to contemplate, and of course to complain. And what really catalyzed this curiosity is science and technology itself.

Works in science truly flourished during the industrial revolution—a time where simple machinery made a massive impact. People started thinking about what could be, about what could go wrong, and sometimes both.

The genre further developed after World War II. Stories of scientific feats, space travel, future energy, and dystopian worlds were now

Taneshqa Singh  
BCS-2019



seen and more widespread thanks to the introduction of paperback books.

Now, the science fiction genre is present in all forms of media: books, television, movies, and even games and music.

Today, although the classic sub-genres like time travel, space travel, dystopias, and zombies remain, new themes are seen, such as robots, artificial intelligence, and life on planets beyond Earth. From the vast generation of waste witnessed in Wall-E, or how the Earth slowly becomes inhabitable in Interstellar, or merely the loneliness experienced in the world of 'Her', one can notice how science fiction discusses issues that we might be or already are facing.

So clearly, science fiction is the product of the existing state of the world and science itself. Even while reading up for this article, I came across several people in the physics field, captivated by the universe of Star Trek. Then there are people who, after watching Netflix's Dark, obsessively read up on time travel. We've all come across at least one piece of work from this genre that has forced us to think, taught us to wonder, and inspired us to learn.

As long as the innate thirst for knowledge exists, science fiction and science in real life will continue to inspire, influence, and imitate each other, just like they always have. 

## LIFESTYLE



Shubham Bhattacharyya  
IPG-2016

## DARTING INTO DEVELOPMENT!

20

I started getting involved in Android App development's intricate details at the end of my 2nd year, i.e., about two years ago, after attending a small workshop conducted by our seniors Sahil sir and Ritik sir. A few of the concepts I knew were built when working on a project relating to App Development from Coursera. It was a new exposure for me in this development field, but I had a good idea about phones. My Apps didn't have an architecture because all I knew was how to 'make an App' but not 'build an App'. At the same time, I felt the apps that I had already developed were extraordinarily impressive, but I was wrong!

My real journey as an Android Developer started way earlier. Being in the 9th standard, the idea of customization of OS intrigued me, so with a little bit of digging, I learned about the concept of ROMs and Cyanogen Mod. The tiny Galaxy Y I had, had seen the worst of that phase. From paging, caching, flashing, rooting, etc. I knew it all. This spark for digging into Android was fueled further by attending that workshop.

Having made only two apps, I felt so accomplished that I thought I'm already a professional at it. Reality struck when I was told to develop an app for my senior. I started with understanding the project, diving into the framework, and coursing through the firmware. Suddenly I felt afraid. I felt like what I knew was barely a scratch. While devel-

oping Android Apps, I felt strange, and suddenly the knowledge about Android development that I had before went missing. I went blank. The second time I started again from scratch—the very basics, but this time formally and adequately. Thanks to my seniors, friends, and Google, I kept learning, developing components and modules one after another, jumping from framework to framework. Ionic, Flutter, React-Native, Java, and finally Kotlin, I had explored it all. Starting from tutorials to clones to interns and eventually my own projects. As time went on, I started developing confidence, and visits to StackOverflow reduced; this marked the proficiency I was asked to seek. The tasks that I handled became more complicated and more extensive; thus, the expansion of my skills and versatility were noted. All in all, a good set of seniors and friends were the primary motivation and guidance I had. Let me share a few ideas which might be helpful to the new ones here!

### 1. Learn to develop Apps with architecture

Developing an App will be easier if you have a framework and a clear architecture in mind. MVP, MVVM, MVC, and so forth, pick any and stick to it. This will help you in the development process, including how to make functions, test them, look for bugs and errors, and make it easier for a neophyte to get a flow of development. All of

the code that you develop must be put in its appropriate place. My suggestion? Go for MVVM, as Google also recommends it.

### 2. Learn to pour a design into code

This action was difficult for me because I never liked to pour the design into the code particularly, i.e., make the XML version out of it. I loved to see the designs, but I often felt inadequate and lazy to do it. But as a mobile developer, we have to translate each of the existing designs into a form with appropriate and efficient code. How the sizes, layouts, colours must match. Even though we're not UI/UX designers, we should understand and follow the development of Material Design in mobile Apps to understand how to properly build the design into code to build a good App.

### 3. Learn about the new concepts and technologies

The more technologies and concepts you grasp, the better your development becomes. One example I always gave was about dependency injection. For the first time I found out about Dagger2, I felt strange and confused about its main function. But the more I learned and applied it, the more I understood. The same case was when I had to migrate our App to use retrofit2 combined with RxJava. This was given to me as a challenge by my mentor to completely work on one module and understand how each technology was used. Even to



this day, I have to keep researching and learning about it.

#### 4. Learn to follow the development of the mobile OS

Because of a lot of Android device types with different screens, settings, sizes, and performances as well as OS types, keeping track of their development processes is a must. From notches, punch holes, different hardware, the vividness is vast. This causes tons of differences in how we develop our App and how it performs on different systems. Besides, bugs and errors occur, sometimes specific to some devices or OS flavours, so you need to know how to solve these prob-

lems.

#### 5. Learn to develop Apps with different languages or frameworks

Developing Apps is no longer just limited to using Android Studio with Java. There are so many new technologies currently being used like Kotlin, React Native, and others. However, Apps that are most popular and stable are still using Java. Due to the emergence of new trends, this can be ascertained to change in the coming few years. Therefore, it's good to learn to develop Apps with a variety of new frameworks. Also, to improve our skills and experience, we can find

comparisons among them to get an idea of which is better for developing Apps. It's also a good idea to learn to develop mobile Apps of other types, such as iOS Apps, because an App developer is needed where a Mobile is, not just Android, but others as well.

These were some experiences from my journey as an App Developer for over four years. I hope this article gives you new energy to learn more and more. There is no limit for learning, but the time is what is limited. **Happy Learning, Hakuna Matata.**



Avanish Pandey  
BCS-2018

अगोचर



ओ जाने वाले,  
तुम जो चले गए हो,  
फिर आने को कहकर।  
वो दरवाजे पर बैठे, बुढ़े चाचा,  
तुम्हारी राह देख रहे हैं,  
अधीरता में,  
चहचहाती भोर से, ढलते साँझ तक।

तुम आना कभी लौटकर,  
फिर वही,  
जीवंत करने उन्हीं स्मृतियों को,  
जो ओझल सी हो गयी हैं।

उन दीवारों को ढांडस देने जो,  
बहुत रोये थे तुम्हारे जाने के बाद,  
बारिश में। क्या अब मन नहीं करता तुम्हारा,  
नीलगिरी से गंगोत्री की सैर लगाने को,  
उन्हीं कक्षाओं में पुनः बैठे जाने को,  
या विस्मृत हो गयी हैं वो,  
शहर के कोलाहल में।

वो कमरा, जिसमें तुम ठहरे थे,  
दूढ़ता है तुमको, बेबस आँखों से,  
निराशा के असीम पारावार में,  
उसे अब पता नहीं, तुम लौटोगे या नहीं  
फिर घबरा जाता है,  
क्या कहेगा तुमसे, गर तुम लौट भी गए,  
इसी भय के असहजता में।

वो वातायन, पूछना चाहता है,  
तुम्हारा हाल, आने वाली हवाओं से,  
किंतु उसके शब्द चरमरा जाते हैं,  
जैसे कोई वृक्ष तूफां के बाद।

वो द्वार स्मरण करता है,  
उस अंतिम संवाद को,  
जब उसने पूछा था तुमसे,  
तुम्हारे लौटने की प्रायिकता,  
तुम असहाय हो, तुमने बोला था,  
और कितने? उसने पूछा था,  
तुम चले गए, जैसे किसी चुप्पी के बाद  
बेजुबां हो जाना बोलकर ॥





Nanda Kumar Ambati  
IPG-2010

## WORK FROM OFFICE

22

The headline might be too mainstream, but yet I ask for a couple of minutes. Quarantine has made everyone in this world change the way they actually do things, right from the toddler who used to just see her mom to so-called retired grannies who are born not to sit idle. And, that is seeing all the family members in the same breathing space all day all night.

Now that you're reading, the mainstream problem is that the younger generation has a feeling in the corner of their hearts that they're the biggest sufferers, and the answer is yes because young soldiers are the ones who hit the dust before others feel the air. Events repeat in due course of taking us through a ride of a full cycle of life. Older generations have seen slave trade, colonisation, forced labour, industrialisation, world wars, stock markets' crash, de-colonisation, political unrest, emergency and now we are in this pandemic.

Professionals across various fields are taking the burns to control the pandemic with a few in the lime-light and the rest being forced to feel that it is just their duty. Yet a majority of people who are working from homes are completely dissatisfied whilst working from home. They couldn't manage clear segregation of multiple duties at hand as they're working under their own roofs like the ones they sleep under. This is because of an imbalance that has been created in terms of the dependent services who have

lost their jobs, and the WFH professionals are, of course, dependent on these so-called services on a daily basis. We are scared to order in our favourite one-course meals & attend weekend getaways. The domino effect impacts fresh recruits as the induction and absorption get delayed. Frankly speaking, the majority of the companies are still investing considerable time and money on these new recruits as our education system is not able to produce fully developed individuals required by the industry. The total business cycle of purchasing food products is taking a toll because of the closure of educational institutions and workplaces. Restaurants had a neat way of procuring huge quantities by Thursdays to cater their weekend orders whilst drastically reducing the in-supply based on the Monday morning leftovers. This is sounding weird and might affect your gut before ordering the next Monday brunch maybe.

The changes that are to be implemented for the continuation of this so-called remote working are huge and most of them impossible viz., change of pay scales, raising minimum selling prices to the farmers so that they get their due share. Social distancing has impacted small-time businesses across the globe, their volumes have come down drastically, impacting their basic lifestyle, thus forcing the FMCGs and manufacturing companies to rethink on their daily production numbers. Goods have

already piled up in warehouses, ports, high seas due to lockdown. Just name one industry or group of professionals who are not impacted by this pandemic. I am afraid we cannot.

We, as the young generation can learn a lot from the school kids who are adjusting so beautifully even after months away from their friends. We cannot consider phone & internet communication as a medium for them as most of them are not able to either access them or are perpetually denied from using the same. Yet, we can see many funny videos of kids on the SM platforms attending classes with all zeal and providing in-house entertainment. It is every time turning out to be true that we have let the kid inside us live forever so that we can be calm, composed and energetic. This version can be easily countered by stating that kids are getting tough to manage during the lockdown, I shall say no as they are completely in acceptance that they are not allowed to go out of their homes. Thanks to the mother & teachers.

Lockdown effects are tolerated in a better way by many by learning the most important craft of mankind, i.e., cooking. But, please don't mix the right food with the wrong breaking news or the wrong food with the right breaking news. Both are equally catastrophic. News is becoming a new hobby in this pandemic which is scary for me as a person who is a newspaper reader

**LIFESTYLE**

ABHISHAR v10.0 | LIFESTYLE

since teens. We have to know what's happening, but we shouldn't be digesting our food or sloth on our couch on them. The reason is pretty simple; the ones who are responsible for the clean-up or improvement are already on the job and if not others are on the job to make the former do their job. We have to raise our voice, and that is just not possible by watching; instead, we have to discuss and see

what can be done. I hope everyone knows the fine difference between healthy discussions and just watching trauma. We have this responsibility vested on us to see that our older generation doesn't fall into this trap. And, now that we are working from home, I think we can definitely do that by introducing them to new ways of entertainment and thus making our living rooms more loving to live-in.

So, finally to conclude, professionals who are doing WFH are equally important and are doing their best to support their families whilst protecting them from the pandemic. And, can this go on for the years to come, maybe no one has the answer, including search engines. 🚗

**Nanda Kumar Ambati is currently working at Export Credit Guarantee Corporation of India.**



Shubham Shukla  
IPG-2014

माँ



तेरे आँचल के अनंत आकाश में,  
मै गुत्फतुगू करती पैदाइश हूँ।  
तू उम्मीद जगाने वाला टूटता तारा,  
मैं उस तारे से मांगी हुई ख्वाहिश हूँ।

तू है निपुण कला कुम्हार की,  
मै सूखी मिट्टी से जुड़ी गुंजाइश हूँ,  
ममता के रस से आकार दिया तूने,  
आज मै सिर्फ तेरी कला की नुमाइश हूँ।

तेरी करुणा जैसे अमृत का एक सागर है,  
मै उप्र भर उस सागर में रहने की ख्वाहिश हूँ।  
गुरुर बनु, ताकत बनु, घमंड बनु मै तेरा,  
तू मेरा सामर्थ्य, मै तेरी ज़ोर आजमाइश हूँ।

# MEMORIES

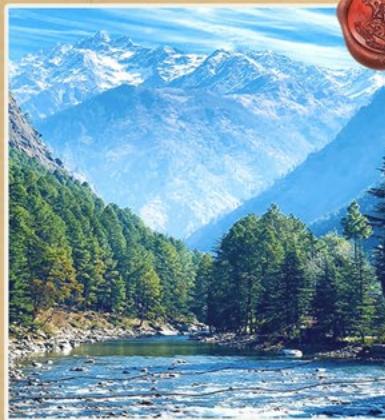
We meet a lot of people  
in our lives,  
but only some  
manage to remain in our  
memories forever.  
*Late ABHINAV SAXENA  
and  
Late TUSHAR SHARMA  
were among the most  
diligent members of  
AASF.*



Their friendly demeanor with their dedication and hardwork made them SPECIAL.  
It has been 10 years since their unfortunate demise but they are still alive in our MEMORIES.



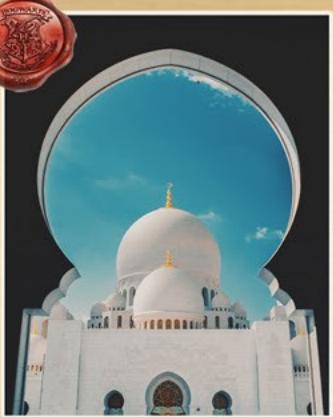
# LIFESCAPE



Tanishq Dixit

*We should all learn from hot air balloons  
by following the highest path and drifting  
serenely through the clouds of ignorance.*

Piyush Chetwani  
Heaven could be anywhere.  
Why not here?



Athul Jood

*mystical morning masterpiece.*



Siddharth Tiwari  
कर्म जिसे पुकारे, वो पहुंचे गंगा किनारे



Mischief  
Managed!



# Expecto Patronum!

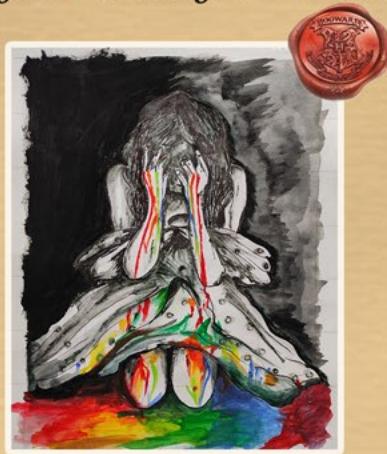


**Sakshi Dhamija**  
*"Do you want to take a leap of faith?  
Or become an old man. Filled with  
regrets. Waiting, to die alone."*

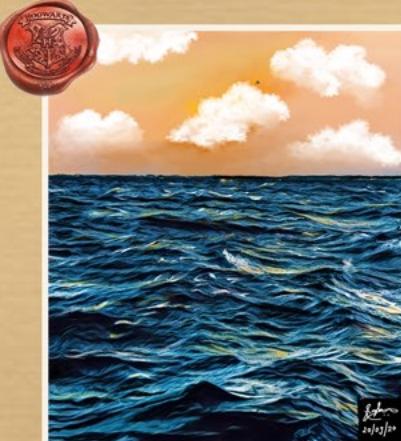


**Rahul Mittal**

*Shiva - The Mahadev. The God of  
Gods. Destroyer of Evil. Passionate  
Lover. Fierce Warrior. Consummate  
Dancer. Charismatic Leader.*



**Kaushal Waghela**  
*Colorful depression*

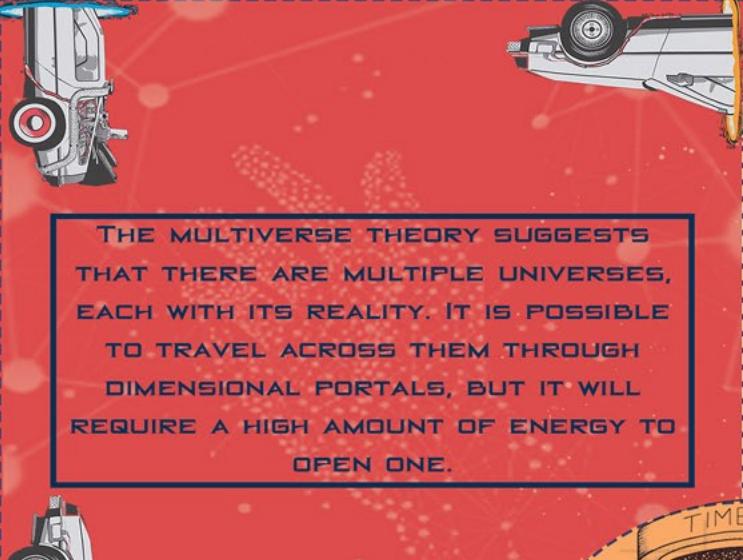


**Sahil Jitesh Gangurde**  
*Happiness comes in waves!*

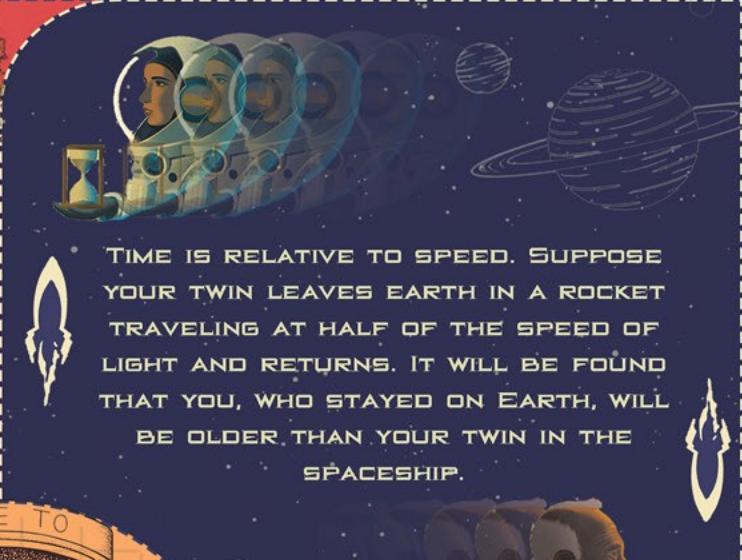


*Wingardium leviosa*

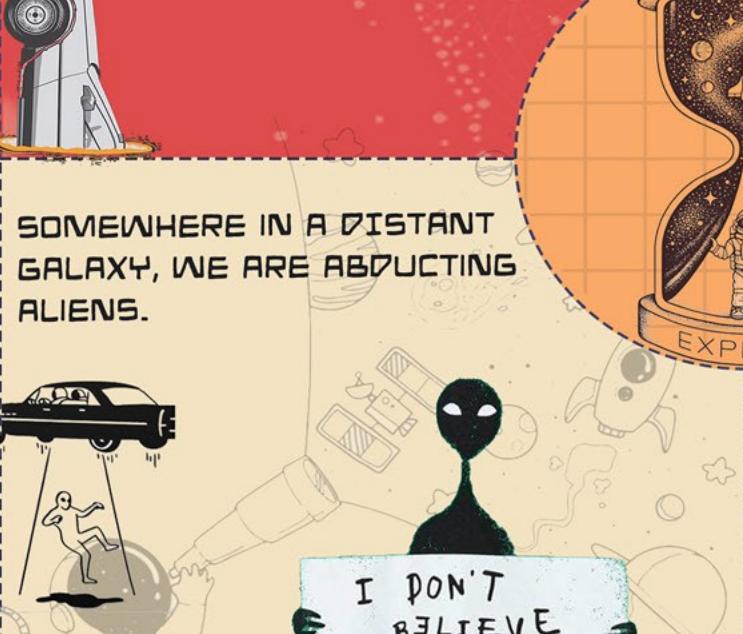




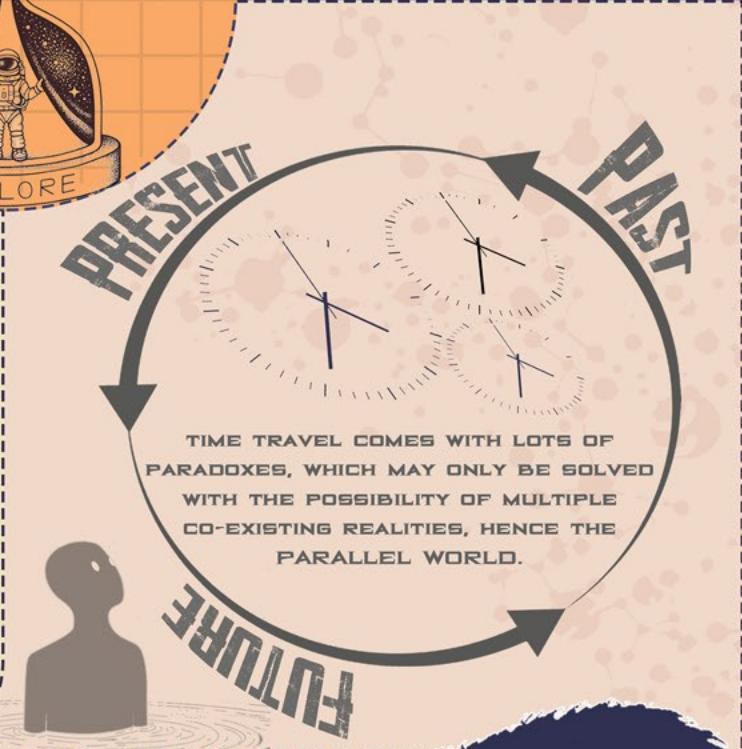
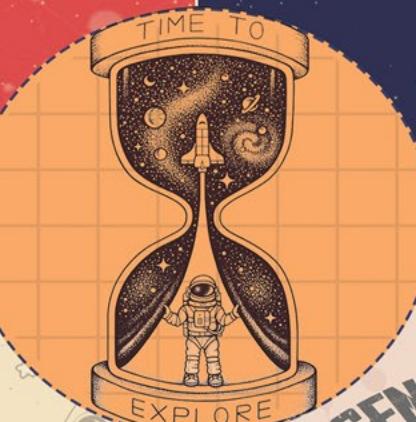
THE MULTIVERSE THEORY SUGGESTS THAT THERE ARE MULTIPLE UNIVERSES, EACH WITH ITS REALITY. IT IS POSSIBLE TO TRAVEL ACROSS THEM THROUGH DIMENSIONAL PORTALS, BUT IT WILL REQUIRE A HIGH AMOUNT OF ENERGY TO OPEN ONE.



TIME IS RELATIVE TO SPEED. SUPPOSE YOUR TWIN LEAVES EARTH IN A ROCKET TRAVELING AT HALF OF THE SPEED OF LIGHT AND RETURNS. IT WILL BE FOUND THAT YOU, WHO STAYED ON EARTH, WILL BE OLDER THAN YOUR TWIN IN THE SPACESHIP.



SOMEWHERE IN A DISTANT GALAXY, WE ARE ABDUCTING ALIENS.



PRESENT

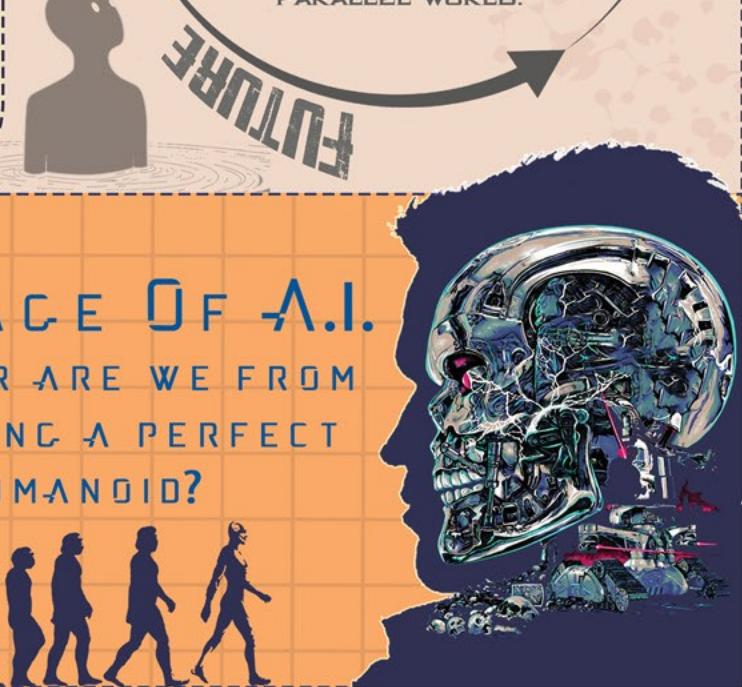
PAST

FUTURE

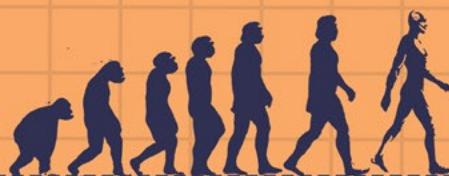
TIME TRAVEL COMES WITH LOTS OF PARADOXES, WHICH MAY ONLY BE SOLVED WITH THE POSSIBILITY OF MULTIPLE CO-EXISTING REALITIES, HENCE THE PARALLEL WORLD.



UNFOLDING THE SCI-FI CHRONICLES



THE AGE OF A.I.  
HOW FAR ARE WE FROM  
ACHIEVING A PERFECT  
HUMANOID?





Akshay Saini  
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## IN CONVERSATION WITH AKSHAY SAINI

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"An engineer will read dozens of books in his lifetime but still believe that he has a lot more to learn."

For neophytes in technology, making career choices becomes overwhelming because of the tremendous number of options available. Akshay Saini, paving his way to greater heights, is effectively laying impressions on the newbies stepping into the tech world by providing his esteemed guidance. He is a renowned web developer at Uber and also mentors students through mediums such as Youtube and LinkedIn. The article here presents an interactive conversation with him. Hope you find this insightful and enjoy reading!

**While in college, especially in the CSE and IT branch, students get intimidated by the plethora of fields, whether to go for competitive coding, web development, android development, and many more available and sometimes end up pursuing none. How to deal with the competition around us and not get intimidated by "so much information".**

There is a massive gap between the things you learn at the institute and the stuff you practically implement at the industry level. But your institute is the first place where you get the opportunity to explore and learn something new every day. Relating to my personal experience, I was very much into web stuff, but I also explored IoT, where I worked on

some projects; I kept myself abreast of Machine Learning as well. I did competitive programming with a group of my friends. So the point is, don't constantly focus on one thing. Try to traverse across different technical fields. Unless you explore, you won't be able to know your interest.

We all can relate the times of midnight chats with our friends and the conversations turning into "aur bhai tu kya kar raha hai aaj kal?" Some say coding, some say "development chalu kiya hai yaar" and explicitly not to forget those who are still enjoying their college days and haven't taken up anything new yet. But the bottom line is, "We All Are Engineers", and in the end, we'll definitely make something good out of our lives. So, it's not about getting intimidated by so many fields and have doubts about whether to go for web or android development or take up Machine Learning or IoT; it's always about "Start kab kar rahe ho kuch karna?" So the moment you decide to start learning something new from today, then there is no turning back, and you will open gates to your success.

**When was the first time you gave a kickstart to yourself in the field of web development? And how did you proceed with it?**

My first experience goes back to when I was in the 8th standard. At that time, there was no excellent internet facility. At that time, we used to get pirated software and

games from our friends using Pendrive. Just out of curiosity, to keep all the software in one place in an organized fashion, I created a website where I uploaded all the software, and we can download it from there sitting at our homes. I had no whereabouts of tags, script, or anything else. I took the boilerplate template from the available online sources, learned from YouTube and other web-related blogs to make necessary changes, and finally made the end product. That was my first experience with web development. Since then, my inclination towards that field has increased more with time.

Later, I started thinking about how I can make money out of it. I took some free-lancing projects, and yes, that was the kickstart for me in pursuing web development.

**Looking back at the application process for jobs, what would you say was your greatest challenge? How would you advise other applicants who may be experiencing similar challenges?**

When you are in college, you are competing with 200-400 students. But the moment you step out, there are millions of engineers out there every year passing by and stepping into the job market. To stand out in the competition away from mob mentality, you should focus on the following points before applying for any openings. First of all, have a "Unique Resume". If your resume does not make an impression, that's

## CAREER MANTRA



a big miss. You might get filtered out in the beginning itself without even making it to the application process. Secondly, the world is going digital now. We no longer live in a time where resumes are being sent over emails. There are recruiters who are coming up to platforms like LinkedIn to know more about the applicant than his/her resume. So making your "Digital Presence Over Professional Platforms" will help you in your job process. Third, in your initial stage of career, don't hesitate to apply rigorously for job openings. Because of the competition out there, you might get fewer responses since so many people like you are applying for similar openings. Do not get demotivated. So, for freshers, "Apply A Lot", and by this, I mean go insane until you have one offer. Look out for 30-40 openings each day. Apply for startups, MNCs no matter what. Grasp as much experience as you can with different interviewing processes.

**Competitive exams and tests for different institutes are almost done, and there will be tons of "Simrans" joining college now. If you had to give one advice to all of them, what would it be?**

Nowadays, what I perceive is the

students coming out of schools have drastically affected their mental health. Not being able to crack JEE or other competitive exams demotivates them and lowers their enthusiasm, thereby making them dull. Personally, even I could not make it to a premium institute (Chemistry laughing in the background :P), but at the same time, I did not keep my expectations high. What affects the students most is when they aspire relatively high, but cannot reach the limit of achieving it. But I would like to say that you don't need a premium college tag to get your dream job. The college tag won't be sufficient enough to justify your skills. Whichever college you make it to, develop your skills, use available online sources, make good connections, and dedicate time for your career ahead.

**Would you like to quote a one-liner for the tech students embarking on their corporate world journey?**

"**THINK OF YOUR CAREER AS A MARATHON, NOT A SPRINT.**" Why I quoted this; let me back it up with some points. 99% of the engineers who get a job are not landing into their dream jobs. Only a small fraction of them can achieve it.

Even if they make a handsome salary, they are not satisfied. They look forward to being a part of FAANG, and once not able to achieve it, they get demotivated just because they consider their career to be very short. So for your career, have a broader vision like a marathon. Make a 5-year plan to become a part of great tech giants, work accordingly on a directed path, go slow, learn things, enjoy the journey, achieve milestones and tell me if it's not achievable then. All you need is a dedication to move forward.

The only constant thing in the world we live in today is the "change itself". Our future success is directly proportional to our ability to understand, adopt, and integrate new technology into our work.

Lastly, a toast for all the engineers out there; *Four years, Forty subjects, Four hundred experiments, Four thousand assignments, Forty thousand hours! Sounds exaggerated? But that's what we engineers do.*

*Cheers to all the engineers!* 🚗

**Akshay Saini is currently working as an engineer at Uber.**

**"The ideal engineer is a composite ... He is not a scientist, he is not a mathematician, he is not a sociologist or a writer; but he may use the knowledge and techniques of any or all of these disciplines in solving engineering problems."**

—Nathan W. Dougherty

## CAREER MANTRA





Himanshi Kalra  
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## GSOC: A CONCLUSION TO 3 YEAR B.TECH. LIFE

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Like every other JEE aspirant who doesn't make it into an IIT, you hold a grudge against yourself. Either that turns into depression, anger or motivation but slowly and slowly although, the guilt of not working hard enough fades away. Something stays. You make yourself promises, that one day, I will do justice to it. For me, GSOC was that outlet.

### Coming to College.

All pumped up about losing all the past regrets behind, I wanted to learn and dive deeper, so I had my curiosity overflowing with the thought of "Apun ko kuch bada karna ka hai". First-year passed by telling friends about GSOC, "Let's do it!" and statements like "Come and let's taste the vastness of open source". Some seniors were sending their proposals, and we heard they got selected as well, which was a good moment. It was bitter-sweet because I knew I wasn't prepared.

### Year 2 (Part-1)

After trying to convince a lot of groups of a lot of friends, I gave up, because I could motivate them only for so long. They had their different interests, and some got into competitive coding, some into Stock Market, some just lost touch. So it was just a friend of mine and me. So throughout summers, I was watching Detective Conan and trying different stuff with animations, using Flash (from Macromedia, not Adobe) and Synfig. Even made a YouTube channel to pro-

mote some "Do it Yourself" hacks. But this is the year where I stumbled upon a software called Blender.

It was already August by the time I came back and heard that other people were applying for GSOC, and I felt, "this is not it, this is not how it ends, not on my watch" all in self-anger and tears, of course. I told my friend, "I would rather apply and would have the honour of getting a rejection email, than not apply at all". But I knew I wasn't prepared. So I started preparing.

### Year 2 (Part-2)

I was still working on Blender, making models, animations, movies, VFX, sculpting and what-not, that's why I fell in love with the software and fell hard for it. It had infinite possibilities in my eyes, and I wanted to taste this world of creating. I even had a plan for creating a cartoon-web-series. But on the side, I started learning "git", the version control system. It's hard to grasp at first, even if you fully understand "what" it is for. It can still be time-taking to get the hang of it—Theory vs Practical. I used the website "learngitbranching.js.org" to teach myself on the sandbox, and it was pretty good.

Next, I started looking at the organizations to which I can contribute, or searching "beginner-friendly open source organizations GSOC" and scrolled at the past organizations which took part. None matched my skill set, or to say I didn't have any skills. This is what I

knew; C++ to solve basic or medium coding questions on Hackerrank and Codeforces Ladder, some basic HTML and CSS, and a bit of Matlab from college courses. But on the hunt for finding an organization, I stumbled upon the fact that Blender was taking part consecutively in GSOC since 2005. You can imagine my surprise and happiness. After all this time, it was right there in front of me. We were here in October, and it was the Hacktoberfest season, we were ready to get some free swags, another friend of mine is following the same track to get free swags, making pull requests on various organizations. And I started giving some serious time to Blender, as I like to put it "on the developer side of the things".

In summary, I tried compiling and building it (had to download it using my own data pack, I think git port was blocked on the institute server), reading about various projects, finally working on a patch on an addon I used while modelling, making minor corrections, getting the hang of using "basic git". Still, after some easy tasks were over, I couldn't work on anything for more than two months or so, let's call it coder's block. It was tough, seeing the rest of the community working on something, and I couldn't contribute much. But I finally found something which was "contributable". I bought a Udemy course to expand my knowledge base, I thought after paying money for it, I



will complete it. But to no avail, it's still incomplete till date. I talked to a few developers about the work, bugged them a bit, as I was too new and was taking my time to adjust. I didn't even know how to submit a patch using "git diff". Google is

your friend.

### Year 3 - The Conclusion

After working on a patch for some time and submitting it for review, I submitted my draft proposal publicly up for review, and it was very vague, I knew I wanted to accom-

plish some tasks, I didn't know how and when (how much time) they would be completed. I asked one of the developers to give some good feedback and improved accordingly and sent the final proposal. I think the rest is history. 🚀



**Harsh Sharma**  
BCS-2019



**BLACK  
IS WHITE**

They are the custodians of every colour,  
Yet they themselves are neutral, of no colour.

They lie in stark contrast,

And still coexist till time shall last.

If one is a chasm, the other is a peak;

Only together are they fully complete.

While one is fickle and ever transient,

The other is steady, never spent.

If one is shady and unearthly,

The other is bright and heavenly.

They are both shady and virtuous,

They are more than just colours, they are conscious;

Have we not understood? That when combined,

There can be no way that we can't find

Yin and Yang, or black and white,

Of the cosmic truth are just two sides.

Then are we not sinners, when we differentiate,

As we embrace one and to the other give hate?

Why do we disrupt this cosmic wholeness?

Since just shunning the other leaves us in coldness.

But now we must expiate for our blindness,

For the centuries we saw only white and brightness.

Paradoxically, now we must look for the darkness

That can balance this blinding starkness.

Oh, men! It is time to comprehend:

Black and white teach us a lesson with no end.

Only when we accept that black is white wholly,

Will we be able to strike a balance, albeit slowly.

We are a manifestation of this incongruous paradox;

And the very universe this truth stalks.





Let's take a trip down the memory lane. Not really that deep though, not till the beginning of the universe or the big bang, just a bit deep. Back to the good old rose-colored school days (ahem, actually, I am still a student, so it's not much of a trip for me :P). It was super fun, right? Each day is a new adventure, without any worry in the world. Also, for most of the students, the school wasn't a place to study; instead, it was more of a hangout place, an extravagant cafe to say. Imagine a library-themed cafe, where the books surrounded you. Everyone had to socialize in hushed voices due to the metaphorical librarian, i.e., the teachers, and pay a hefty price for the experience like you know, the cafes (why the hell are they so overpriced?).

But even then, there was always that one guy, that poor soul, who took things way too seriously. His entire world revolved around books and grades and assignments, and the only thing he dreaded more than death was getting a fail grade (and well maybe public speaking?). However embarrassing that might be to accept, I was one of the guys, and some would argue that I still am.

But wait! This piece is not about me. Well, it's partially based on my own experience, but that's just a way to represent people like me who are immensely studious. Take it as an estimation of the entire class of meticulous people by one point sample viz-a-viz me. However,

since it's a single sample estimate, it'll be a bit biased (I kind of love probability and statistics, so, apologies for the lame jargons and analogies).

On the other side of the coin, being studious has its perks. But now, in my sophomore-junior-ish year at college (it's kind of in an indeterminate position currently, due to COVID), a few years out of school, looking back, I kind of regret being studious. It leads to me thinking about the ways it has affected my life (and other things in general), and while it has led to many, many good things, mostly in my professional career, it did have a lot of side effects (There is no free lunch, is there?). This led to me writing this article, reflecting on what I think are the side effects of being studious. Let's begin a voyage:

### You tend to become a perfectionist :

When you spend your entire childhood getting "perfect A's", you can't help but develop into a perfectionist. It's just never enough for you. You always try to find out loopholes in your current work, be it your preparation for the next exam or a piece of blog you are working upon :P. While perfectionism is not necessarily a bad thing, it can lead to a very subtle kind of procrastination where you keep on delaying things on the prospect of being "not yet just right". It becomes challenging for people like me to realize it, let alone fix such procrastination since it gives a false sense of super-

riority.

### You tend to leave school with very few memories :

This is probably the single biggest regret of my school life. After four years, I barely have any good memories of my school life. It's almost like I never even went there, which, apart from being a bit spooky, is sad. I should get my memory checked up. Maybe it's an artificially induced amnesia to delete some memories of some super-secret alien species I discovered in the school (I always suspected some of my teachers were aliens :P). People like me tend to be so focused on their academics that we forget to enjoy the simple things in life. I can probably give an almost accurate description of how my daily day at school went, and that would describe each day of my school life, owing to the monotonicity. We also make few friends due to being framed as the "nerds", which reduces the chances to develop meaningful memories with friends even further.

### People tend to ignore other parts of your personality :

Most of my conversations with old schoolmates start with them making direct/indirect references about how studious I was. It's like the only image people remember is that we were studious. And well, that hurts a bit. It gets even more embarrassing being called nerdy in college. Peer pressure in colleges often makes us ridicule our past-studious habits, though, I now

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feel that we should continue enjoying our studies if we love doing so. Heck, even boring studious guys like us have some other interests, and we would like you to remember them and talk about them for once. But alas! they all tend to be overshadowed by the single trait of being an academic nerd. Maybe we are at fault too; we tend to be so overindulged in our academics at school that we forget to talk to other people about stuff that interests us other than books.

#### **You tend to be weird at social events :**

Studious people tend to lack apt social skills. Maybe it has something to do with most of us likely being introverts. This article is a result of my boredom at a wedding and an escape from the bands and ruckus. Still, it's not that we are not interested; we just find it hard to do the small talk, maybe because we have so much to remember from our studies that we like to cut short to the chase and talk/remember only the important stuff. But it's a bit weird, being well-read in a variety of topics, we tend to be more informed about many things than most people and should be able to carry out exciting conversations.

But well, I guess social dynamics are something that one just can't be taught.

#### **You tend to be weird around the opposite sex :**

Have you seen the meme that many girls have a crush on the school topper? Let me tell you that it's just a meme, a thing to be laughed at, cause the reality is just the opposite. A side effect of being studious is a lack of interaction with the opposite gender, with the deficit compounding over your school life, leaving you incapable of even the most superficial interaction in the end. The only business we usually have with the opposite sex in school is in the form of solving the study related doubts (and well, if you are a no-freaks-given jerk like me, even that probability rules out, leading you unaware of the unsaid norms of talking with the opposite gender).

#### **You tend to like music :**

Attribute it to some weird scientific correlation between liking classical music and IQ, or just to the need to cut off the noise while studying, I have personally observed that academic people tend to love music. The type of music doesn't have to be classical though; I love rock, pop, rap, and a bit of classical.

Maybe the reason behind it is that it helps us focus and think clearly and gather our thoughts. I also feel that I can remember things better while listening to music, although listening to too much music can sometimes be detrimental also, causing an inability to think correctly in its absence (it also becomes the reason for a constant scolding from your parents due to listening to super loud music in your headphones :P). Whether I like it or not, being studious has been a dominant part of my personality and has had a significant impact on my life, and I guess many other people like me. And although I am becoming increasingly less studious (mostly to avoid being ridiculed as the "nerdy geek"), I often thought that I should be true to myself and enjoy studying, since I love doing that and gathering knowledge about new things. Maybe someday I'll acknowledge this "studious" part of myself as something to be proud of, instead of trying to hide it. Then perhaps I'll recognize the above-listed facts as a part of my personality and come to peace with them. Until then: enjoy reading. 🎉

**"Be studious in your profession, and you will be learned. Be industrious and frugal, and you will be rich. Be sober and temperate, and you will be healthy. Be in general virtuous, and you will be happy. At least you will, by such conduct, stand the be."**

—Benjamin Franklin





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## RESEARCH PROJECTS: AN OPPORTUNITY TO IMAGINE, CREATE, INNOVATE AND SERVE

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At the outset, it is good to remember that the prime aim of your admission at IIITM Gwalior is to gain education and uncover ways to explore the real world. And to that end, in my opinion, nothing provides a better platform than the two research projects you shall be doing as part of your education. In this article, I want to gently bring your attention to the wonderful opportunity to indulge in authentic learning and scientific investigation that all of you have here, at IIITM.

As part of your five-year post-graduation or four-year graduation course, you shall be required to do two research projects. Most students look at these as a superfluous burden, and that could be due to two reasons: (a) nonchalant professors who fall short of inspiring students to do great work, or (b) you, the student, perceive these projects as mere credit requirements and approach them in a heartless manner. The second reason is the one I'd focus on more, because, as we all know, you're graduate students (thus, not in kindergarten!); education, therefore, is very much a personal responsibility. Clearly then, your personal interest becomes a key determinant of your learning trajectory and sense of fulfilment in your research projects.

So, I want you to look at these projects as not just limited to Informa-

tion Technology or Computer Science, but IT/CS as tools to explore the wider problems around yourselves, in your society, villages, schools or communities. I encourage you to develop your own research proposals because your ideas are worth exploring. Very often, we think of some problem and unable to find its connection with technology become disappointed. But deeper investigation does reveal that connection!

Know this: that one area of interest or that one problem that ignites your passion can become your potential research area. You can do preliminary exploration on it in your first research project and then perhaps, more advanced investigation on the same topic in your second research project. Or devote your entire life to explore it from a multi-dimensional and inter-disciplinary perspective.

My emphasis on developing your own research proposals is to encourage you to think critically. Critical thinking is, sadly, one area which we often do not pay enough attention to. Rather we train ourselves in solving problems that are handed over to us. The latter is vital but not at the cost of former - a balanced attention is significantly important. So, think of your research projects as explorations wherein you push yourself to think

and design a solution.

When I was in college, my focus was on the use of NN, AI/ML to solve some kind of soft computing problems. They were fulfilling intellectually of course, but now I feel I could have done much better projects - hindsight wisdom. It is exactly this, which compels me to write this article to and for you and initiate meaningful collaborative research. Your ability to stick with a problem will depend entirely on how much you love it - hence choose problems which excite you, in which you can develop and hone your critical thinking abilities, and design scalable and sustainable solutions.

Lastly, remember that college time is a precious opportunity to make mistakes, experiment widely and get hands dirty in multiple domains, among other things. So make sure that you remain active and consistently strive towards shaping your valuable ideas - they are precious. You are investing your time in research projects, make choices that mean something to you! As Gandhiji said, "In a gentle way, you can shake the world". I believe and I trust you can! 🚀

Yesoda Bhargava is currently working as a Public Health Statistical Officer at SEARCH.

"Research is formalized curiosity. It is poking and prying with a purpose."

—Zora Neale Hurston





*"You no longer have any Ideas.  
Ideas have devoured you."*

Ideological possession isn't something that catches our heads very often, even though it is very much in front of our eyes and is manifesting itself into reality all across the world at this very moment. It is a scenario when people no longer have ideas. Ideas have people. People get possessed so profoundly that sometimes it's almost indistinguishable from willful blindness. People who suffer from ideological possession usually have a Utopian vision. Sometimes it may be difficult to fathom, but Soviets and Nazis indeed had a Utopian vision. Soviets were possessed with a pathological yet seemingly altruistic idea of equality of outcome. The Nazis thought the 4th Reich would be some bastion of Aryan civilization, a Utopian impossibility.

#### A distinction to Draw

There is one thing that we all need to consider. We mistakenly believe that a dictatorship is the same as a totalitarian regime. I would like to draw the difference. In a dictatorship, once the rebellion is crushed, things get back to normal. There is no longer an epidemic of state inflicted terror. It's comparatively peaceful. Think of modern-day nations like Qatar, Saudi Arabia, and Malaysia. The purpose of authoritarian control is only to ensure that the respect, or rather a rational fear of the government, is maintained. Totalitarian regimes

are different since the acquisition of power is by relatively peaceful means, usually on top of populist rhetoric in times of a crisis or rather unusual times perceived as a crisis. They identify a particular group responsible for the turmoil and create an "Us v/s Them" rhetoric. State Terror begins when things have picked their pace, and the situation seems relatively stable. For instance, the persecution of Jews in Nazi Germany began after the economy had recovered. Soviet Gulags came into existence after a successful overthrow of the Tsarist regime.

#### Rise of Postmodernist Populism and Neo-Marxism

Postmodernism is a school of philosophy based around the subject of moral relativism and infinite interpretations of different social and naturally occurring phenomena. The problem isn't with postmodernism itself as long as it is aimed only at literary criticism. But unfortunately, it has paved its way into politics and popular culture. The concept of moral relativism and alternative "facts" seem to be the most useful tool for Donald Trump, arguably the first post-modernist politician in the world. Populist figures in Europe like Viktor Orban in Hungary and Matteo Salvini in Italy have also built their political careers off conspiracy theories disguised as the so-called hidden "truth".

Neo-Marxists dictate that all the differences in outcome are a

consequence of discrimination. The post-modernist Neo-Marxist world-view ascertains that the world is a battleground between the bourgeoisie, the so-called oppressors, and the proletariat, the oppressed. And that's the appropriate way to fathom the historical evidence. That's not true by any stretch of the imagination. This doctrine, which thrives on an "Us v/s Them" rhetoric is the quintessence of pathological absurdity and results in the division even though the proponents claim that they are uniting these "groups". Post-modernist Neo-Marxists also believe that logic is a social construct, and the entire point of logic is to suppress people, so rejection of logic is one of the fundamental tenets of this philosophy. While it is undoubtedly a great thing to question everything, some fundamental truths like the shape of the Earth and the existence of biological sex are incontrovertible. Malice may attack them. Ignorance may deride them, but there they are.

#### Fall of the Soviet Union and Collectivist Paradox

The fall of the Soviet Union and the emergence of the United States as the sole superpower on the brink of the 20th century doesn't necessarily prove the superiority of one nation over the other. It was instead a consequence of a superior philosophy. We cannot form a strong union without healthy and fulfilled individuals. A nation that prioritizes the group over the individual often fails at addressing the issues concerning



both. The American bill of rights distinctively mentions that the individual is sovereign. It was based on Lockean principles of inalienable natural rights and asserts that the government has been created to protect the individuals from one another. Courtesy of Soviet propaganda, people forgot their natural human rights and submitted to a tyrannical government that meant them no useful. That's what happens when we collectively trade freedom for a little bit of security.

### The Antidote to Collectivist Chaos

So how on Earth can we stop our-

selves from falling into the abyss of ideological possession. Rational thinking may seem to be the right answer, but it doesn't always work. Here is a catch. Once you are blinded by ideology, rational thinking seems irrational. I would say treating yourself and everyone else as an individual would be a good start. ideological possession almost always manifests itself into reality as a collectivist doctrine. So, the antidote to collectivist tyranny is individual sovereignty. In his epic work, "Beyond Good and Evil", the 19th-century German philosopher Frederick Nietzsche likens the col-

lectivist mentality to "degeneration and diminution of man into a perfect herd animal".

Isn't it selfish? No. All individual problems are relevant to society because there is always a chance that the issue you are facing is shared by someone else. Before you try to fix things on a large scale, it is still better to solve it individually. That's almost always a good start.

*"The Ultimate minority is the individual. Those who deny individual rights cannot claim to be defenders of minorities." - Ayn Rand.*



Aman Kumar Mishra  
BCS-2018

कलि – कलिक संवाद

#### — कलि —

क्रोध है भीतर,  
मैं रहता एकांत।  
मोक्ष का प्यासा,  
इंसानों से शांत।  
कलि जो जन्मा,  
तो दया देहांत।  
मृत्यु है फैला,  
अब होगा वेदांत।

#### — कलिक —

आँखें हैं बंद,  
तराजू हाथों में।  
बजा जो शंख,  
हलक सुखा ढूँ मैं।  
बहेगा रक्त,  
अंत दिखाऊँ मैं।  
काला कर्म,  
तुझे गंगा नहा ढूँ मैं।

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Resiliency in simple terms is the ability to self-heal in case of a tragedy or adverse situation. Let's talk about a very incredible system we all are most familiar with, the "human body". The system tells you and rather stops you from eating too much. Got hurt? - it will notify your brain in the form of pain, Touched something too hot? - the reflexes come into play to rescue you from that immediately, Got an infection? - the immune system immediately commands its army to attack the intruders. The living organisms have survived so far only because they have evolved in nature to react to their surroundings, hence making them resilient.

Now, let's jump from the system we are to the system that we design and build. As software engineers, we develop multiple systems that become the backbone of big tech companies or apps that are a part of day-to-day routines for many people. Some of us might even work on the software on which many lives may depend, like in the fields such as aircraft or defense. As a software engineer, our job is not just to build these systems but also to build them to be self-resilient. In this article, I want to focus on a few things that we need to take care of while building software to make them resilient against common software issues.

#### Separation of Concern and Segregation

Just imagine a big software system

such as the google search engine. What if all the logic that a search page does was a responsibility of a single system, i.e., a single system is responsible for finding out the search results, rank them, autocompletes what you are typing, responsible for the google-doodle to be shown on the main page, the same system is responsible for searching the maps, getting the route, etc. Now the autocomplete feature introduces a bug, which results in a lot of data being written to the system disk. Since a single system was responsible for handling google search, it goes down as the system running it has no disk space. Scenarios like this can easily be avoided by segregating the system into multiple Services/Systems that are responsible for doing a particular work and nothing else. All these systems work together to form an ecosystem that runs a giant search engine. These should be modular such that each system is sufficient to do the job that it is designed for, and a fault in one system results in just one feature not working properly rather than making the whole software down. Remember, the heart doesn't digest food; the digestive system does. The complete human body is just multiple systems working together that are doing their own jobs separate from each other, so should the systems we build.

#### Failure Handling

This is the most fundamental thing each system should take into

account. Failures or Exception for a system can mean just two things: Your issue or my issue, i.e., the fault is either at the user's end or at the system's end. The software should always let the one using it (human or another system) know what kind of issue has caused the failure so that an action can be taken appropriately. If your system calls another system and uses its output on failure scenarios, your software should be able to recognize whose fault it is. If it is the other system's fault, then you can retry the calls accordingly so that your software users don't even get a clue that a system went down. For them, it just took a little longer than usual to complete the request (as you got output from the other system in multiple attempts), but the job is accomplished.

#### Monitoring

The software should always have proper monitors configured and metrics recorded. This is done by logging each and every output your system makes, whether it is a success or a failure. If your system is returning many failures, they should be recorded, and you should be notified. Example: notify me (in the form of email/call/text) when 90% of calls made to my system were errored. Other metrics can be like to notify me when my system takes more than 10 seconds to respond or notify me when my disk or memory is at 90% of total capacity etc. This notification is sent so that you can take action on that. The



notification need not always be sent to a human. It could be sent to other systems as well so that they can take an automated action rather than relying on a manual one.

### Throttling

What if someone calls your system again and again. In common terms, attempts a DDOS[Distributed Denial of Service] attack, or what if your system is giving errors due to high memory usage and the calls to your system are being retried again and again. The best way to save your system from such issues is by having a throttling mechanism. These can act as a gate to your system and discard the requests made to your systems. The requests can be discarded based on "I can only handle x requests per sec". All

requests after x requests are discarded, or my memory is already 95% full. To avoid any problems, I would discard further requests.

### Circuit Breakers

Circuit Breakers, like in electrical circuits, turn off the flow of current (in this case data/process) when there is any fault. The best example of this is banks. Those who have used Google Pay might have seen an error in their GPay app that your Bank is experiencing issues, and your request might not get completed even before actually initiating payments. In this scenario, the servers at Google Pay have experienced many requests being errored out from a single bank. They have employed circuit breakers to avoid multiple calls to the bank

when bank servers are having issues.

### Further Reading

You need to be careful about the health of the software you build, but you need not do that all by yourself. There are multiple open-source libraries to do this job for you. Libraries such as resilience4j and Hystrix (developed by Netflix) are widely used for this purpose. Guava (from google) also has some functionality to make your systems resilient. Netflix also started Chaos Monkey/Chaos engineering to test the resiliency of its systems. 

**Surbhi Arora is currently working as Software Developer Engineer at Amazon.**



Prashant Dwivedi  
IMG-2018

जीना सीख  
लिया...



हर मुश्किल से लड़ लड़ कर, जिसने है जीना सीख लिया।  
कुछ भी नहीं नामुमकिन, उसने है सब कुछ जीत लिया॥

कुछ भी नहीं कर सकती उसका, जीवन की ये बाधाएं।  
बाधाओं से जिसने ही हर पल दो-दो हाथ किया॥

सब कुछ हासिल है उसको, कुछ भी नहीं है असंभव।  
दुर्गम अगम कठिन रास्तों को, जिसने ही है पार किया॥

हर मुश्किल बाधा से, जो हसकर हाथ मिलाए।  
उसने ही हर बाधाओं से पार पाना सीख लिया॥

ऐसे जीवट इंसान का क्या कर लेंगी ये बाधाएं।  
हर बाधा को जिसने है निर्बाध बनाना सीख लिया॥

हर मुश्किल कठिनाई उसको लगती है आसान।  
जिसने हर कठिनाई को है, गले लगाना सीख लिया॥

GEEKS'  
CORNER

## SRE AND DEVOPS AS A CAREER

Gaurav Yadav  
IPG-2011



During our college days, I was not aware of the field of SRE and DevOps as a career option. Most of the fields that we were aware of were Android, iOS, Data Science and Analysis, and generalized Software Engineering. Nowadays, things are changing, and students are starting to recognize this field as a career option. If not, you should. Why? This is one of the highest-paid jobs in the industry right now, and the level of engineers that we have in these fields is not as great.

### Why don't we have great DevOps or SRE engineers?

Well, this field needs extensive knowledge of Linux basics, networking and system design. People should realize that learning a few tools does not make you a great DevOps Engineer or SRE developer, but there are several such in the industry. But, as a matter of fact, companies do need people to manage and run the tools they're working on. It is the DevOps Engineers and SRE who manage and run those tools and do on-calls. On-call is the time when you get calls because there is an issue in the production system. Every SRE and DevOps Engineer has to do it and usually for a week in a couple of months.

### DevOps and SRE

It would be best if you learned the following things to work in this domain. Firstly, as most of the companies run most of their systems in Linux, knowing about it is a

must. Then, you have to understand the complexities of networking. Networking can be very tricky; for example, try to answer this question. Is IP a reliable protocol? If your answer is yes, you are wrong, IP follows best-effort delivery, whereas TCP adds reliability to it. I tend to ask this question in each interview and trust me, most of the candidates don't know the answer. Then comes the cloud. This is the era of the cloud, and you will have to work on the cloud. Now, many cloud options are present. Do you need to learn all of them? Nope, all the clouds have similar core features with different names and different sets of APIs. You can read the documentation to understand it easily. Next, you should be able to design large scale systems. This is very important and is asked in most interviews. You can read the system design primer on Github for this.

### Who should pursue this?

Anyone who wishes to have a deep understanding of low-level systems or networking should choose this as a career option as this field will help you learn all of this.

### How is it for entry-level engineers?

It can be tough sometimes, and people tend to move to SRE and DevOps in the later stage of their careers, but it's not that you cannot apply for or interview as an entry-level engineer. Companies like LinkedIn, Atlassian, Google, Amazon give you the option to

choose teams, and you can choose one of these teams.

### Companies which are very good for this field

Google, Facebook, LinkedIn, Atlassian, Netflix, Intuit, Amazon, Thoughtworks or any other big company has these dedicated teams.

### Startups:

This is where it will be tough as startups tend to hire fewer entry-level engineers in this field. But companies like CRED, Endurance, Media.net, Inmobi do hire in this domain.

### What should you read if you are interested?

Linux Bible, Operating System, Networking, Programming (Python and GoLang are preferred, but any language will work), and a bit of competitive programming are a few things you should focus on.

### How much programming do you need?

Competitive Programming not being necessary is a misconception in this industry as most people tend to avoid programming. You should know programming in any field in computer science. Programming will take your career to the next level.

### Conclusion:

In my experience, this is the most interesting field I have worked on, among frontend, backend, android development, and native app development. 🚗

**Gaurav Yadav is currently working as Technical lead at Ola.**

## CAREER MANTRA



Tune in as I take you through a flashback, relating human understanding with machine learnt-biases. Weird to say that **You read this, but You don't**. It's your conscience reading this without budging your mouth. How and when did you learn this incredible ability? And what exactly did you **learn**?

This brings me to a fundamental concept of "learning". How do we incorporate knowledge, and more importantly, how can we make machines incapacitate that knowledge?

**Quick flashback:** You go to school, probably 1st or 2nd class; you have an English period, the teacher starts with writing strange characters on the blackboard; starts saying "A for Apple", "B for Ball". The teacher relates those characters with an object, which is concrete, i.e., universal. <more on this later>

An Apple will always be an Apple, right? You start relating random combinations of letters together and learn about 'words', which somehow make a lot of sense. But how? What goes on within our brain? Instead of this, there's a more interesting question - How can a machine understand the same way we do? For this, we need a proper structure to represent a word to a machine; after all, it just understands 0 and 1.

What's the closest thing to binary? Whole numbers. They are discrete but have no limits. They can be extended as much as there are words in a language. So imagine

you represent a word with a number, let's say, 'Apple' can be represented by 1. 'Ball' by 2, and so on.

So what would a machine do? It'd try to remember these words by their numbers; whenever asked, it'd go and refer to that memory. But, using this representation has some flaws:

- Talking just about the English language, it adds a new word **every 98 minutes**. Does memory overflow some day or other?
- "I like reddish apples and yellowish \_." - Fill in the blank. You know the answer, *bananas*. Easy peasy. Right? But for a machine? Not really.

These words would come under a single context umbrella, say 'types of fruits'. Assigning random numbers to every word, their context information is lost.

Clearly, we need a better representation. Instead of assigning just a single number, how about if we assign arrays of numbers to words? Imagine an array of 2 dimensions: X-axis - 'type of fruit'; Y-axis - 'type of color', the quadrants wherein:

- Q1 - (apple-like fruit, reddish colour)
- Q2 - (banana-like fruit, reddish colour)
- Q3 - (banana-like fruit, yellowish colour)
- Q4 - (apple-like fruit, yellowish colour)

Things are getting simpler now (we now know how to place an Apple, and a Banana in this coordinate

space). Now the machine replies correctly; it has the context information that Apple is reddish and more apple-like, and Banana is yellowish and more banana-like. "*Well that's really obvious and stupid.*" - no reader ever :3

Yet again, there are some assumptions/limitations:

- In this example, the properties used in the context were just '*type of color*' and '*type of fruit*'. We need **a lot of properties** to define a word semantic.
- More context ↔ More dimensions. Every dimension would yield information about one of the properties of that word. (Array right now is of fixed length)

But do we really need to know which dimension relates to which property? Can we not just abstract it as *just* some property? It turns out, people do that. Imagine 100 dimensions to represent a single word! This solves a bit of *addition-of-new-words* problem too. If '*grapes*' were a new word, we could take some semantic properties from already-learnt words like '*apple*' as they both come under '*type of fruit*'. This idea is inspired a lot from human understanding. Remember the English class? Teacher related letters/words to real-life objects. In a nutshell, we were learning what a machine would learn - the actual numbers which would fit in the n-dimensional representation. It has a cool name too, **Word Embeddings!**

We've established that Word



Embeddings are an excellent way to represent a word in a machine (at least for now, at least for us), so that it may understand its semantic properties. But, how can we impute the actual values in n-dimensional arrays for words? This is where Machine Learning comes into the picture. To learn these embeddings, there are several techniques, several architectures. But rather than the methods, we'll look at something which is typical for all the techniques, all the approaches—**The Data**.

For most machine learning algorithms, we need training data. In this context, it's *textual*: any/all historical documentation, manuscripts, literature. Any textual data can be used in training/imputing values to those n-dimensional arrays. But here's the catch: Data is imperfect. How did we come to this conclusion? Let's say we learnt the embeddings for every word there is; we can confirm this inferring the captured semantic information like: *King — Man + Woman = Queen* which gives us a green signal that we successfully captured the context. Right? **But here's where things go wrong:**

*Programmer — Man + Woman = HomeMaker*

Theoretically, machine learning algorithms did their job remarkably by learning the properties and context of words from existing textual data. The term "homemaker" appeared more frequently with the pronoun "she" than with "he" or "others", so it was more closely associated with *female-ness* than

*male-ness. Even if the learning process was fair, the end outcome, however, was not.*

Revisit to the class: Remember when the teacher-related those characters/words with objects, *which are universal?* What if the 'objects' are not universal? What if they're abstract, and have a different meaning for every conscience? That is where data imperfection roots in. Let's see another example: "*There are \_ sections in Abhishar.*" - 5, as simple as that. But here's when it gets tricky:

"*There are \_ genders.*" - ? What would an ML algorithm fill in the blank? This highly depends on the type of data the algorithm was trained on; if it was trained on just historical data, there's a high probability that it'll fill an invalid number in the blank. To back up my assumption, take a look at this sentence from the 4th-century literature:

"*You shall not lie with a male as with a woman; it is an abomination.*"

— Torah / Bible, Book of Leviticus, Chapter 18, Verses 22

Doesn't sound so good in the 21st century, which has a content-aware environment, does it? Now imagine a machine, learning from this (not so perfect) literature.

Clearly, there's an induced **Bias in Machine**, where it learnt to *discriminate based on race, colour, sex, language, religion, political or other opinions, national or social origin, property, birth or other statuses such as disability, age, marital and family status, sexual orienta-*

*tion and gender identity, health status, place of residence, economic and social situation* - Without us intending it to.

Put something like this in a realtime utility, things can go horribly wrong (Read about Amazon's secret AI recruiting tool that showed bias against women). And this is just one type of bias, which can result in discrimination based on prohibited legal terms. These problems are severe, *especially now that there's been a revolution around a lot of conceptual facts, which were previously anticipated to be ground truths.*

*How do we solve this?* Do we come up with a *teacher-student setup*, wherein the teacher model makes sure the student model doesn't induce a bias? Or do we come up with a *better representation* of words for machines altogether?

It's an open question to the audience since I don't intend to jot it down here. You can go ahead and research, build upon these ideas and provide solutions.

Artificial Intelligence/Machine Learning has gained a lot of attention these last few years, and so has a general understanding of normalization in society. We talk and boast about no discrimination based on any grounds, but actually putting words into actions - by originating new ideas, by framing new approaches, all the while by taking this discussion under consideration; is probably one of the best approaches we developers/engineers/thinkers can take! :) 🤖



# AASF

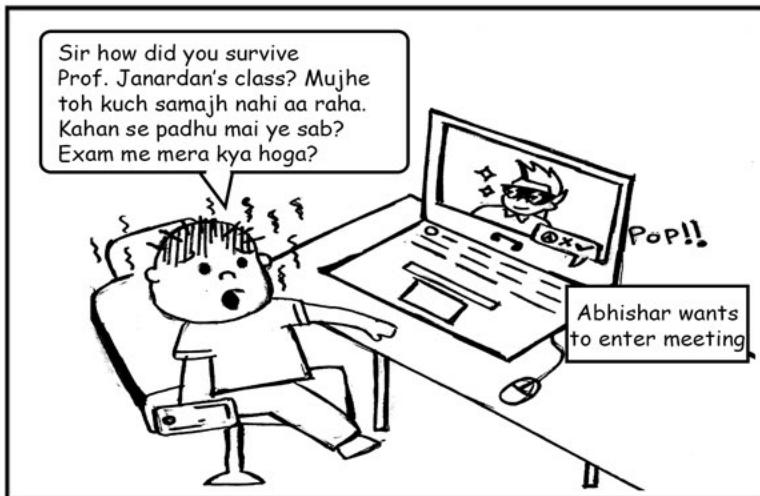
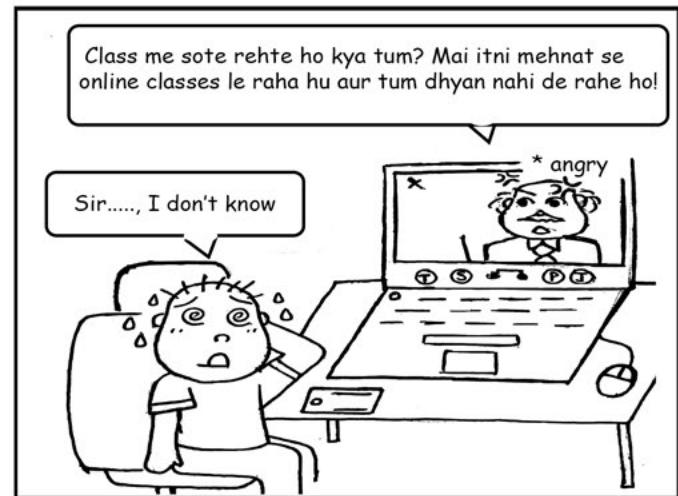
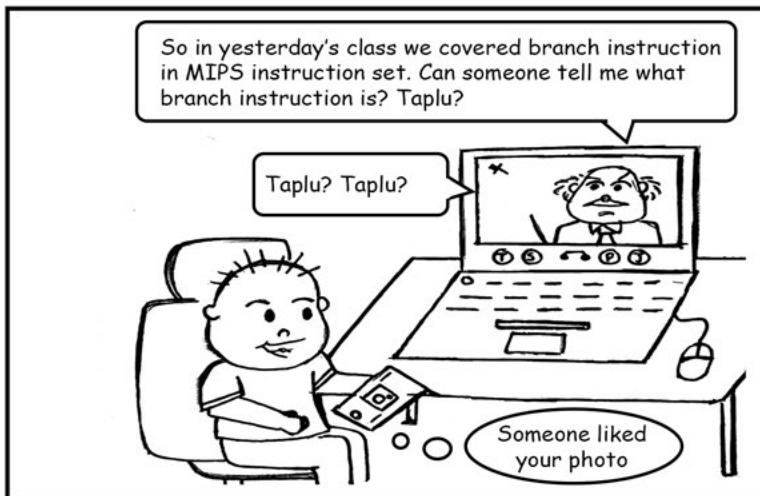
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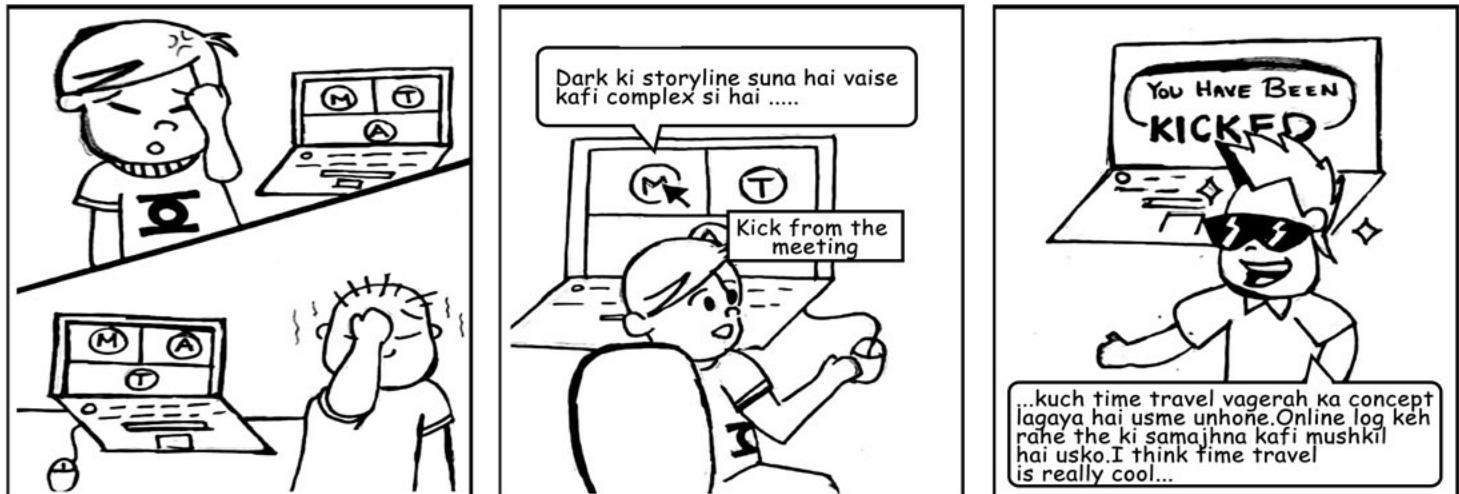


# Friends Fun & Dreams

Abhisar is a good friend of students. He listens to their thoughts and experiences. Abhisar tries to chalk out easy solutions for students' problems. They feel motivated to showcase their hidden talents after talking to him. Personally, we feel he carries with him a very positive air and is capable of spreading happiness around. And we will try and make all the possible efforts to help him with this splendid companionship with you.

We would like to express my gratitude to Ms. Sriya Chettebhaktula, BCS-2019, for her valuable efforts in realising Abhisar and his friends in "Friends, Fun & Dreams". We couldn't have done it without her.





## Professor Janaardan

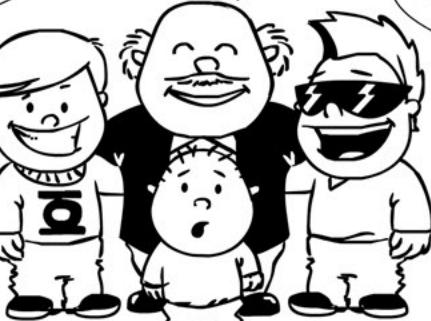
Hey  
Guys! I'm Abhisar.  
Well, of course you might  
be familiar with me by now. Con-  
sider me as one of your pals.

**Abhisar**

Hello  
students! I am a profes-  
sor. I am like a typical faculty. I  
teach. I am a patient person. But like  
all, not open to criticism.

Hello  
hai ji!! I'm Abhisar's  
senior and I am the King. The stu-  
dents and the faculty, all are under  
me, hai ji.

**Money Singh**



**Taplu**

Hello.  
Umm, Amm, I am  
Abhisar's Junior. I am a shy guy.  
I fear trying things. Dealing with se-  
niors and faculty is like a nightmare for  
me. I dream to be a successful man.

# THE PHILOSOPHY OF MINIMALIST DESIGN

Tathagata Paul  
BCS-2019



The term "minimalism" can be used for a wide range of topics. Although no all-encompassing description of minimalism can be found on the internet, one can say that it is "removing the distraction of excess and focusing more on things that matter the most". The aspect of "minimalism" that I am going to talk about is "Minimalist Design". (If you google a little, you will understand that minimalism is not limited to design per se.)

The first question that comes to mind when developing an application or product is whether it works. While it may seem obvious to do so, many people fail to pay attention to the end product design, which is a disaster in itself. You need to have a captivating look to your product that will draw and hold people's attention.

This is where "minimalist design" comes into play. Imagine staring at a blue sky on a beautiful day. Clean, uncluttered, and simple - the feeling of peaceful satisfaction. Hence, "Less is more" ideology possesses a particular attraction that helps to showcase a product's true form.

One of the best comparisons between abstract expressionism and minimalism that I have come across is: "Abstract expressionism is an approach to design that combines self-denial and emotional intensity, which produces designs

that some see as chaotic, rebellious, or even nihilistic. Unsurprisingly, spontaneity (or at least the impression thereof) is the main feature of abstract expressionism. Minimalism, in stark contrast, takes form, colour, and space and reduces them to such simplicity that they only retain their essential nature. At this point, the philosophy goes, one can't remove anything else from the design to improve it further in any way, shape, or form. That's when you know that true minimalism has been reached. Call it a form of design nirvana, where bliss in design is attained by removing all of the excesses!"

Steve Jobs, one of the founders of Apple Inc., felt that design simplicity should be linked with making products easy to use. However, these goals may not always go together. A design might be so sleek and simple that the end-user finds it intimidating or unfriendly to navigate.

"The main thing in our design is that we have to make things intuitively obvious", Jobs told a crowd of design mavens. For example, he extolled the desktop metaphor he was creating for the Macintosh: "People know how to deal with a desktop intuitively. If you walk into an office, there are papers on the desk. The one on top is the most important. People know how to

switch priorities. Part of the reason we model our computers on metaphors like the desktop is that we can leverage this experience that we already have."

Jobs was such a staunch believer in prioritizing the clean design of products. He decided to have all of Apple's manufacturing factories have white interior walls, even though it was more expensive.

To get started with minimalist design ideas on our own, we need to observe how others have worked on them. Once again, googling is the best place to begin. Sites such as Dribbble, Behance, DeviantArt, and Pinterest can get your creative juices flowing. For those who are interested in web development, Awwwards is a great place to get inspired. Fair warning: the websites featured over there can be difficult for beginners to implement.

Moreover, choosing the right fonts and spacing plays a massive role in creating a good design. I would suggest using CSS/SCSS for all design purposes because they give you absolute control over your design.

That's all I can say about what you should do. You have limitless possibilities when you explore beyond the frameworks of your work. Just remember, "Simplicity is the ultimate form of sophistication".

**"Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away."**

—Antoine de Saint-Exupery



The hype around mental health now seems to be settling down, as the Sushant Singh case went beyond the landscape of Mental health. Whatever the reason behind SSR's death mystery, the topic of mental health for you is much more important, and it's getting more critical day by day.

Thanks to the internet, you probably heard about depression, anxiety, bipolar disorder, and other realms in the mental health world. Yet I assure you that most likely (and hopefully too), you can't imagine what each of it would feel and mean. If it hits you in an unfortunate scenario, it would be hard to recognize what you are dealing with.

Imagine there's a linear scale of people's happiness. On the right, it's sort of bliss, and on the left it's misery. People stand on it at different points on this scale at different times of their lives. Iterating again, it's a scale, I would like you to not think of mental health as a binary term. It's not about whether you have it or not; it's about where do you stand on the scale.

Some happy events can take you to the right of the scale, and any stressful or worrisome situation moves you to the left for a temporary amount of time. Fluctuations happen; we go back and forth on the scale throughout our lives, but in the end, it is all about at which point of the scale you are comfortable living most of your time.

We, humans, are ruling the world,

you know why? Mind. We don't run as fast as a Cheetah, nor are we as strong as a Tiger, nor as giant as an Elephant. What sets us apart is our mind and how we use it. If the mind makes us feel hopeful, driven, and happy, the same sense can make us feel miserable, lazy, and sad. With the changing state of our mind, our perception of the world changes. Those perceptions, in turn, have a direct impact on your beliefs, actions, and choices, thereby impacting your life's trajectory. Your concerns or worries might be affecting a large part of your lives without you being not aware of it. Our bodies are deeply ingrained with our minds. You observe how your heart beats faster just before the exam results getting announced or how fast you may run when a dog is after you, or how tired you can become after a series of boring lectures. These are just a few of the interferences your mind does to your body.

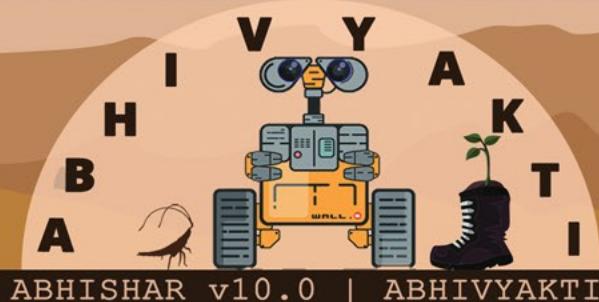
Mind not only prepares your body for such situations, but it can also cast a dark shadow on physical health. Physical pain, fatigue, sleep disturbances, and digestion problems are some of the common problems caused by your mind. I am not suggesting that for every pain or fatigue, there's a psychological problem. Still, the other way round, every psychological issue can cause you pain or other disturbing physical symptoms. Next time when you are anxious about something, observe the physical energy of your

body; is it the same? I doubt so! According to the WHO report, roughly 7.5% of India's population suffers from mental health disorders, oversimplifying here; that means approximately 7.5% of your batch mates struggle from it in some form or another at any given point of time.

Is it all scary? No. There's hope. The first thing and the most important thing I would like to advise is to be aware of your position on the happiness scale. Is it moving for the good or going down the drains. Develop awareness about how your days are going; are you feeling empowered, energetic, or in a good mood? Or are you frequently worried about something or insecure about your grades, appearance, relationships, etc.?

You can build awareness by using meditation or journalling. It's easy to take meditation or journalling as a cure. It's a tool for you to be aware of yourself and your well-being; do whatever you think is right to develop awareness.

There are few things that are proven to alleviate mental health issues or increase happiness for that matter, which should be easy to incorporate too. A healthy lifestyle may help your movement towards the right of the scale. Physical exercise, sleep, and nutrition are some that strike my mind for a healthy lifestyle. Note that such a lifestyle can help you only to a certain extent, but being aware and fixing your mindset is what takes you much longer.



With awareness and understanding about yourself, figuring out what work is needed to be happy is not hard and will come naturally. On a final note, for anyone who is struggling with it, it's not the end of

the world. It does get much better to a point where you may not even recognize your old self. Keep on moving, seek help if you need, and, most importantly, DON'T GIVE UP! 🚗

**Akashdeep Saluja is currently working as Software Developer at Careem.**



Medhavi Srivastava  
IMT-2018

**THE HELP -  
BASED ON THE  
PRIYANKA REDDY  
CASE**



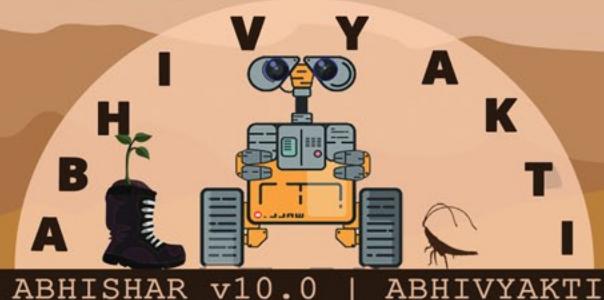
Do her screams echo at night?  
Do her scared eyes scare you all the time?  
Does her helpless struggle suffocate you in your sleep?  
Does her scarred face send a shiver down your spine?

Do her tears make your mouth dry,  
So you wake up in the middle of your dreams.  
I can't imagine how sick and masochistic you are.  
To feed your demons,  
you sucked out life from an angel.

Does her charred body,  
Let you live peacefully?  
Does regret ever overpower your will to live?  
I can't imagine what you exactly did with her,  
I can't imagine the horror in her mind,  
When she knew that all your were was the devil  
In guise' of an angel.

I can't imagine her fright,  
When she knew, her world was gonna come spiraling down.  
I didn't see her helplessness,  
But I feel it,  
Everytime, I find myself alone in a dark alley.

We struggled hard for freedom,  
But are we really free?  
We can go on to blabber  
About how far ahead we have come,  
But who are we shadowing the reality from?





Juhi Tiwari  
IPG-2016

## THE GREAT INDIAN RAT RACE

48

**Disclaimer:** The next couple of pages are the five-year collections of my mistakes, learnings, and self-realization moments. They are not admonishments or a guide but things to ponder upon at the end of the day, and you need not agree with all of them. The only purpose is to have a real conversation with yourself.

During these five years in college, I have seen the wonderful evolution of our student community. We have more GSoCers, people grabbing internships in the prestigious FAANG companies, scholars, and whatnot. It is indeed a proud thing for all of us, right? And before you say yes, just ask yourself what you feel, is it really pride? Or is what you feel a complex emotion of anxiety, envy, the need to rush to achieve similar or greater success, the thought of what you were doing in all those years, in short, a feeling of self-despair? Be brutally honest with yourself.

And thus begins the rat race that you thought had ended with your coaching days. We start running aimlessly in the direction in which everyone runs. Suddenly you see an entire batch running for GSoC, even if they hate open source. Suddenly everyone becomes a data science enthusiast when all they care about is `model.fit()`. Suddenly everyone starts commenting “interested” on a post where there are already thousands of interested.

Well, I am guilty of a couple of such winner devoid races.

The result of the rat race is that you don't know whether you are pursuing something because you are really passionate about it or because you want to write that fancy LinkedIn post in response to that fancier post made by that guy in the other lobby. Just to be clear, there's nothing wrong with such social media presence, but ask yourself, are you doing it for yourself, or to show others that you can do it too?

Our spoon-feeding nature from school doesn't stop even after entering college. We start admiring those “influencers” as they spoon feed us again, this time with their expensive “100 must-do interview questions course”, their perfect routines to crack every company in the world and those motivational quotes that make your adrenaline rush... for 10 minutes, only to be again scrolling for another quote. Kung Fu Panda is my all-time favorite movie and the one thing that Mr. Ping taught me was, “There's no secret ingredient. It's just you”. Whether it's noodles or your dream job, no influencer or even your achiever friend can give you any tips. If you want it, you will work hard for it, motivated not by the result but by the process. Sure, you will find yourself in a rut, some days will be hard, but your friends, seniors and your family will be there to guide you in a true sense and not to increase their follower count.

I found myself in a similar situation a year ago when my batch mates

were getting amazing internships, cracking GSoC while I decided to give my time to Infotsav. I was clueless, whether my decisions were correct, whether the upcoming placement season will be a disaster for me. Yes, I was guilty of being anxious when I saw people achieving amazing things and overlooked my own achievements as they weren't similar to theirs. One of our seniors, Saloni ma'am then told us this thing that made me realize my mistake: “Everyone's definition of success is different. Don't let someone else's life determine yours.” I was so busy being affected by others' success that I forgot what I really liked to do. For your friend success means getting placed at Google which is perfectly fine, for you it might mean getting a decent job near your home so that you can stay with your family, which is perfectly fine too. For your junior success means cracking GSoC, for you it may mean excelling at the stock market - both of which are amazing. Your definition of success should be something that makes you feel good as well as exhausted - exhausted from the hours of hard work you put into it and good as you did something that gave your heart content. My friend Abhishoy shared a thought-provoking thing - we make people a benchmark instead of an inspiration. You don't need to crack 5 companies because your friend did. You don't need to get that 20 LPA job because your senior did. You can be inspired by

## CAREER MANTRA



them, but their life isn't yours and that's your beauty.

Someone getting a stipend more than you doesn't make them more successful or you miserable, because guess what - you both suck at adulting, given the lack of financial education in the country. Moreover, no matter how hefty your package is, there's always another who will be earning more than you and another person earning more than them. How many of them will you defeat and at what cost? Just like money isn't constant, so isn't time. Everyone's timeline is different. Someone might crack multiple offers before the even semester starts while others in spite of all the

hard work they put, in some cases more than the former, have to wait a bit longer. Does that mean they failed? If you think so, maybe you have failed in your thinking. One thing is for sure - those who put in all the hard work, will find their success, maybe not now, but very soon. And when it comes, it will be grand.

I am still not perfect, no one can ever be. I find myself torn apart between these feelings, time, and again. But it's better than being oblivious and taking part in a rat race where our decisions are controlled by what the other person is earning, what "tag" they have got, and how the world will perceive me

if I don't follow the conventional success path.

For all you amazing juniors, when the placement season comes, it will be difficult. Some people including your friends will become hyper-competitive. Comparison of tags, offers, and success will become a norm and if you aren't an ignorant racer you will fight with these thoughts. But remember what Master Oogway said, "You are too concerned with what was and what will be". Just know that you are the secret ingredient, your time will come, it will be grand in whatever way YOU will like it to be, and you will be okay. Embrace your awesomeness! 🎉



Shivam Yadav  
IMT-2019

## खलिश



मुझे सवाल की तलाश है, है कुछ खलिश मगर,  
रोग का मालूम नहीं, मर्ज़ की दूँदूँ डगर।  
नज़ारों से नाराज़ हूँ लाचार हूँ मैं इस कदर,  
के शायराने महकमों के लब्ज़ ताके मेरी नज़र।

यही सप्त-स्वर मेरे पक्षधर, मेरे अनुरक्त यही अक्षर,  
युहीं अक्सर इन्हीं गलियारों में डगमगाते हैं अश्क स्तर।  
हमसफर की पढ़ खबर, वो आशना भी कर गुज़र,  
मुख्तसर मुलाकात की याद में फिर भटक रहा दर बदर।

घुट घुट जी रहा था, घुट घुट जी रहा है,  
रकीब ही करीब था, था हक जताने का असर।  
तिश्नगी का फितूर सिर चढ़ अब यूँ ही है शब्द पिरोता,  
मयस्सर होता दोसाख भी, गफ़लत न की होती अगर।

## CAREER MANTRA





Divya Singh  
IPG-2015

## TEN THINGS YOU SHOULD DO BEFORE YOU SIGN OFF FROM COLLEGE

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The days you will be spending in college are going to be over before you know it. Suddenly, you will be cloning and setting up numerous repositories and realising that the guidelines in Readme files don't always work. Getting placed is cool, but nothing compares with the fun we have in our college lives. We graduated without meeting our friends but hopefully, you won't. Here is a list of ten things you should do before you sign off from college.

**1. Join a campus club :** Explore your interests, dance, music, photography, literally anything. Being in a club will introduce you to new people and give you new experiences. Not to mention the parties you would be going to.

**2. Pull an all-nighter :** See the dawn from dusk at one stretch. It can either be while studying for exams and realising "thoda pehle shuru kar lena tha" or chatting, dancing and snacking the night away with your closest friends. I was a morning person, unlike my friends. Once, they stayed awake all night, went jogging in the morning, had breakfast and slept. So, make sure to do this at least once (just don't make it a habit) because "yahi din toh yaad aayenge".

**3. Hit the road :** Not in Salman Khan's way. Travel with your friends. Don't spend too much time in planning as that never works out. Just plan a doable, safe trip and make memories for a lifetime.

**4. Use that student discount :**

Leverage your student IDs. Many restaurants give discounts to students. So do airlines, not discounts but more baggage capacity. Use it. Paying 400 bucks for every extra kg is a pain. There are a few softwares too, which offer free educational licenses for students, for instance, JetBrains All Products Pack.

**5. Capture the moments :** I was lucky to have a few friends who took pictures now and then. Having spent months in lockdown, I realised how important it is to capture moments. Photographs are an easy way to record little moments that are precious but easily forgotten.

**6. Try out the local food :** Wake up on one fine Sunday, get an auto to Kampoo, try out kachori, bedai, samosa and jalebi (basically everything) at S.S. Kachoriwala. Just a few steps further from this shop is Bahadura, which is famous for Laddoo and Gulabjamun.

**7. Attend the college fests :** If you are one of those people who see fests as an opportunity to catch up on academics or go home, you are missing out on an essential experience of college life. Try participating in and attending as many events as possible. Bug your seniors for treats, they find it difficult to deny during fests ;). You will also get a refreshing break from your routine.

**8. Try and find your passion :** A lot of students in India end up in courses they don't want to be in. It's okay if that's the case with you. You will have ample time to give your passion a serious shot. It could be

dance, music, photography or starting up your own company. You may fail and fall in the process, but it will be a good experience. If you succeed at it, great! If not, you will have your college degree to fall back upon, and also a great story to tell your friends.

**9. Learn the art of ignorance! :** This is something which I feel is really important. Everything that you do will be judged upon by people. If you study too much, you will be labelled a nerd. If you talk too much, you will be called obnoxious. Learn to be comfortable in your skin and accept yourself for who you are.

**10. Friends, not competition :** Last but the most important of all, be free from unhealthy competition. When there is unhealthy competition, many negative emotions arise. Learn and grow with your friends. It always feels good to reach the top together. Start seeing people as your friends and not your rivals. This was just a small gist of what college was for me. I have mentioned only ten, but there are hundreds of such things that make college worthwhile. I am sure you people have felt the void in these months of lockdown. The batch of 2020 didn't get the chance to bid their farewells, but I hope you all will. So, when you finally return, grab every opportunity to make a memory. 🎉

**Divya Singh is currently working as a Software Developer at MindTickle.**



# ADIEU



Shot on Quik Pix

College life is the most exciting and memorable period in the life of an individual. My life has been no different. The last five years in my college have gone so swiftly, filled with entertainment, parties, academics, night outs, and many more, which once seemed to be endless. Each of us came from different backgrounds and cultures but now celebrating as a family made me learn a lot about life. Signing off from ABV-IIITM will not be easy at all. To all the juniors, it is your life. Go ahead and do all you can do with it. Don't lock yourself in your room. Explore new possibilities because you'll remember this period for the rest of your life.

- Vudit Gupta (IPG-2016)

"How lucky am I to have something that makes saying goodbye so hard?" quote hits me when I write this. I will miss all the late-night study sessions, frantic completion of assignments peppered with gossips, and uncontrollable laughs. We came in as wide-eyed freshers and are going out as people who can take whatever the world throws at them. These five years taught us many things. We forged unbreakable bonds with people who have been there every step of the way in every situation, from stumbling around half crazed during last-minute studying to having a blast in the fests. I will miss and savor each of these moments.

- Ritika Agarwal (IPG-2016)



One thing I'll miss the most is all the fun and the amazing moments that I had with my friends. All the parties, movies, fests, counter strike nights, the sudden trips we had, calling each other with their weird nickname, and insulting them, I'll remember all. Small advice to juniors, always remember that you are never too late to start with anything. You just need the right guidance and some awesome seniors to seek guidance. All the best in your life, adios.

- Mehul Bhutalia (IPG-2016)

Being part of the first 4-year course has been amazing and unforgettable. From being part of several administrations' experiments to getting constant support from seniors, we all are standing near the end of our college life. I can't imagine this without my best friends and batchmates. The long-lasting gossips in the canteen and gully cricket over all these years will be missed. The lesson that I learned is: "If you are with your buddies, then whatever the situation is, you will definitely find a way to overcome it easily." I don't find a better closing than saying, "Muskuraaiye, kyuki aap ABV-IIITM, Gwalior mein hai."

- Chirag Jindal (BCS-2017)



These years have transformed each one of us into a different person. Whenever I think about college life, I can't forget those late-night hostel cricket matches, studying a day before minors, late-night cooking, binge-watching shows, and that particular IPL debate in the lobby (Kohli vs. Dhoni). I will cherish these moments forever. To friends, your valuable cooperation and critiques helped me learn and grow as a person. To juniors, do everything to the fullest, be it learning something, bunking classes, or binge-watching a new TV series. Don't ever leave anything to regret before completing your college life.

- Abhay Chaturvedi (BCS-2017)

# ADIEU



Isn't it funny how day by day nothing changes, but everything is different when you look back? Just like Gwalior's weather, I can't express the hot and cold stuff I did to explore this place and, more than that, myself. IIIT Gwalior had something for everyone. It taught us how to dream big, gave us the path to achieve them, and left a medley of learnings and emotions filled with memories that we will cherish for a lifetime. The way we rolled through these 5 years, the Magic Moments we shared, the way we danced in high spirits on music and celebrated recklessly. As they say, it's always the journey we miss, and it has been one hell of a journey!

- Nikita Sharma (IPG-2016)

It seems like yesterday; when I joined college. I used to think, "I'm going to miss my school days." I still do, but this college never made me feel short of those days. From proxies to solving problems, from 7.9 SGPA to 9.2, from being unable to solve a single problem in ICPC 2018 to getting selected in ICPC regionals 2019, these five years were like a roller-coaster ride. I will miss the whole robotics team and the way we celebrate birthdays! Thanks to Sanjit, Yatharth, Surendra, Shashank, Arjan, and Ashish. This journey wouldn't have been complete without them and their constant support. I will miss college life.

- Sahil Yadav (IPG-2016)



My college life can be summarized into four phases. "I'm super excited!" -> "I hate this place. I miss home." -> "I'm getting quite comfortable here." -> "I love this place. I don't want to leave it." These years were the most transformative years of my life. I'll cherish these bittersweet memories and lovely bonds all my life. To juniors, you have nothing to lose but to gain, so never be scared while experimenting as you will eventually end up learning. With a feeling of nostalgia in my heart and tears in my eyes, I will end this note with a quote "We'll meet again, don't know where, don't know when, But I know we'll meet again, some sunny day."

- Saurabh Gupta (IPG-2016)

We were just many young & startled students who have now turned into brave adults facing real-world challenges. This would not have been possible without our bond and support for each other. Teachers being our mentors at every step, guided us through and became our friends when we needed them to be. Hostel became our home, making us realize how small the world we live in is and how easy it is to care for people and live in as a family. Bidding goodbye is probably the hardest of all the things we had to do in this college. To juniors, go ahead, enjoy this beautiful journey gifted to you - Be heard, be you, dream big, take risks, don't wait!

- Vipul Barodiya (IPG-2016)



Still remember our kiddish vibes vs seniority vibes from seniors, only to realize after 5 years of an adventurous and memorable voyage of being an IIITian, that we're the same, with a slight dash of experience and maturity. These years seem so long yet short. A sense of satisfaction and craving balanced each other well, from fests, placements, interns, and visits to lining up in a room. Embark upon this journey filled with ups and downs, wherein you'll feel fear, anger and maybe some regret, but the happiness, fun, laughter and most of all the memories making the negatives like a grain of sand. Make friends, memories, learn without hesitation because that is what making the most of college life is.

- Shubham Bhattacharya (IPG-2016)

# WHY YOU WILL FAIL TO BE A "GREAT" DATA SCIENTIST

Rishabh Jain  
IPG-2015



It's pretty easy to be just a "good" data scientist. But being "great" is not a piece of cake. So, let me break the ice on the most lucrative job of the 21st century for you, being a data scientist.

The job that's going to automate everything, potentially destroying millions of jobs every day in the process. The job that's going to produce a super-powerful God-like ULTRON that will kill all the humans one day. Sounds cool, right?

Just leave the fantasy world of Hollywood fiction, and come down to mother earth. If you stick with me for a few minutes with this article, I am sure I can at least tell you how to be a "good" data scientist in the future, if not a "great" one. Just suggesting, I am not sure that I am even worthy enough to be called a "good" one myself. But as an alumnus, it is expected of me to be one, right? Anyway, easy to brag advice, than following them. So, let me start from the very beginning.

What is a data scientist? Why a scientist? I am doing engineering, not some B.Sc from Delhi University (*My 12th class result just sobs in the corner*). Anyway, to define data science in the most straightforward terms, it is the cross-section of three essential skills, Computer Science, Maths+Statistics, and Domain Knowledge. It is the ability to make data-driven decisions based on data or to develop algorithms that will just do it for you. In all, it is just a

lazy guy's asset to not look at every image in a bag of millions of images to tell whether it is of a cat or dog, and just automate this task by developing a model to do the same. Just to add some random coolness, this model is similar in structure to how the human brain works. However, it's a debatable topic, and we perhaps won't ever understand as we are not "*human-brain-biology*" major. STOP ALL YOUR COOLNESS AND DEBATES HERE, PERIOD. Perhaps, whatever websites you use these days predominantly, be it Instagram, Youtube, Google Search, Snapchat, etc. are highly dominated by data science in general, from developing feed to predicting suggestions, it's all the magic wand of data science. As future engineers and managers (*yes, the M in ABV-IIITM stands for management, and one should be proud of this*), you are not expected to be manually developing recommendations for a user in a company which has billions of users, even from the countries and languages you have never even heard the name of. It's crazy that you develop a Japanese to Korean translator with mind-boggling correctness and efficiency without knowing a word of either Japanese or Korean. Damn, you are better performing than a graduate who majored in Japanese to Korean translation. I feel sad for him/her. This is the power of data science. It's not that you understand the data; it teaches a machine to

understand it for you. MACHINES ARE OUR SLAVES, or *is it the other way round?*

Data Science is a doomsday machine, even in its infancy. For hundreds of years, people were slowly mastering statistics and mathematics in just a single domain to predict the future. And now, whatever they did hardly a decade back in months, is done by a student in a few hours. So, should I just jump into the data science wagon, as is it all bloomy here? Remember, your 3rd standard Moral Science lecture, ALL THAT GLITTERS IS NOT GOLD.

So, cutting short, Data Science or Artificial Intelligence, in general, can only be a golden opportunity to a few people. Among those, even the majority are just good data scientists. Only a handful of them are actually great at what they do. Sure, you must be thinking that it is all about the experience, and soon every good one will turn out into a great one as years progress. It's not that simple, buddy.

There are two common and contrasting thoughts behind data science, which most of you have already heard,

1. The correct way of learning data science is to perfect the mathematics behind it. Only when you can understand and do lots of linear algebra and calculus, can you call yourself an artificial intelligence enthusiast.
2. Who cares about mathematics? It's just Python anyway, with



libraries and Github repositories available for most of the tasks. It's more of a software job instead of being a mathematical one.

I disagree with both of them. Mathematics makes you understand the interactions between input and the parameters that the model is learning. It also makes going through those state of the art and daunting research papers a little easier. It helps you to make variations in the architecture without random changes and facing size-mismatch errors a gazillion times. But, the world of mathematics is too deep. Suppose you stick to the mathematical understanding of everything you apply. In that case, you will probably lag behind your batchmates and won't have many arrows in your arsenal at the time of job-seeking. Mathematics makes you go deep, while libraries and quick projects make you go wide. In the end, it's just a trade-off between breadth and depth (*BFS vs. DFS*). The hyperparameter tuning for this one belongs to you, the time you have for your goal, and your inclination towards mathematics in general. Sorry, NO GRID SEARCH AVAILABLE FOR LIFE. MAYBE IN SOME PARALLEL UNIVERSE.

For new data scientists, the culture is intimidating. With all these buzzwords, Computer Vision, Natural Language Processing, Reinforcement Learning, Markovian Chains, Boltzman Machines, etc., and rapid advancements in each of them, one simply does not have the time to know everything (*Also, where can we get so much computational*

*power from? :P*). The AI industry is continually evolving every second, the computation power is increasing even faster. The question is, how do you balance everything? In the end, you have to digest the fact that you cannot be good at everything simultaneously. Also, there is no point in binge-watching Siraj Raval's videos or reading up medium articles unless you develop real projects around them.

Speaking of application, there is no point in reading and learning about new research unless you can at least code it up. Leave the enormous computation power needed, do it for small parameters, at least make something working, even for a batch size of one.

Yann Lecun, Yoshua Bengio, and Geoffrey Hinton, the Turing award (*Nobel prize for computer science*) recipients in 2019, had worked decades before becoming somewhat significant at a sub-field in their field of interest. This is not what I am saying; this is what they say too. And yet, you believe you know everything about LSTMs, by reading a 10-minute blog of a guy working at a tech company.

There is a massive difference between just solving an AI problem and solving an AI problem to perfection. One makes you a good one, the other makes you great. And yeah, perfection doesn't mean just changing the model's architecture, but getting as much raw information from the inputs as well. No model or hyperparameter tuning can overcome data imperfections as much as correct data processing

can. To have an intuitive understanding of data, probably using visualizations is a must. Most of the breakthroughs are rather intuitive in nature and can only be thought of, if you can visualize the problem in the real world. TRY TO EXPLAIN YOUR SOLUTION TO A NON-DATA SCIENCE BATCHMATE, AND SEE HOW IT FARES.

To solve real social problems that you are interested in, the skill and the patience of data scraping are necessary. This is quite underappreciated by the data science folks who hate HTML syntaxes and are lazy in pulling up some data from the web. You want to do an analysis of Malaria outbreaks in various states of India, and how can they be solved? Try to scrape off data from some old-fashioned government websites; it will be quite a fun task and really valuable to the community. To get a data scientist job, for most of the tech firms, you just need to be good. Not great at all. Interviews are not that tough. They mostly focus on some mid-level depth understanding of concepts and projects in your CV. And a set of some dozen standard questions, just as in software development.

A combination of being passionate for your cause, solving real-world problems, improving people's lives, proper understanding and intuition behind what you are applying, efficiently training and testing your algorithms, and explainability to your model makes you a great one. With the necessary data requirements in some format, some



domain knowledge and, nonetheless, quite some computation power.

Artificial Intelligence is a big field; it has sub-fields depending on what and how much you want to pursue.

Speaking of practicality, here are some tips from my side based on me and my friends' journeys in the data science field. You can see them as tips to land a "good" data scientist job at most companies. If you slowly perform them earnestly and listen to other advice from much-intelligent people than me, I am sure you will one day gradually move forward to "greatness" as well.

1. Don't ignore competitive programming at all. Unless you can change your ideas to code, you can't be termed as someone who knows computer science, let alone a data scientist. The knowledge of data structures, algorithms, and time complexities are equally relevant to a data science role as a developer's role.

2. There are specific roles for each part of an artificial intelligence pipeline. Some common names include data analysts, data engineers, and data scientists. If you are thinking of going into any of the first two, knowledge of

databases and SQL is a must. Even with data scientists, it's always good to have some SQL skills so that you don't have to depend on someone else for your data needs.

3. Computation power can be a big headache while doing data science projects. To solve this, either use free resources like Kaggle and Colab notebooks or intern somewhere who can provide cloud processing power to you. Internships are very important to learn the gap between **WHAT YOU SUPPLY AND WHAT CONSUMERS WANT TO CONSUME**.

4. Do some courses on linear algebra and calculus. Also, implement whatever you are learning while doing lectures on computer vision, natural language processing, etc. Good implementation courses are often available on Udacity and other independent creators. Mathematical courses are available on YouTube (*Stanford, UC Berkeley, MIT anything you like*) and Coursera. SOLVING PROBLEM SETS AND HOMEWORK IS A BIG MUST.

5. It's equally important to read research papers as well as blogs of AI teams of Facebook, Google, Uber, etc. They give you

approaches to solve real-world problems and expand your mind. If you don't do any of the two, start doing them and **STRIKE A BALANCE**.

6. Diversify your projects in terms of the areas they cover. It gives you a more comprehensive understanding of things, and the CV also fares well for most companies.

Remember, the best time to plant a tree was a few years ago. The second best time is now. And yet, like me, you know everything, but you will not persevere to be a "great" data scientist because it's pretty easy to be just a "good" one. I have bragged a lot, I guess. The one last piece of advice which I got from a highly competent senior of mine, which applies no matter whether you pursue data science or not, and I would like to pass on to you is: **"Don't waste your college life. It's a golden opportunity to learn. Work together and sow the seeds of changing the world to a better place."**

**STAY HUMBLE, HUSTLE HARD.** 

Rishabh Jain is currently working as Data Science Engineer at ShareChat.

## Did you know?

There were 5 exabytes of information created between the dawn of civilization through 2003, but that much information is now created every 2 days.



GEEKS'  
CORNER



Rajesh Kumar  
IPG-2010

## 5 YEARS AND COUNTING

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After spending five years in the tech industry, I want to share my experience about the things that I learned in college and are still relevant. I remember the days during my final year, getting placed was the only thing in everyone's mind. Everyone was trying out different things like getting internships, doing lots of coding, working on side projects, practicing multiple languages. Here are my two cents on some of those topics -

### Programming Language –

People have an obsession with knowing multiple languages. And I myself worked on different languages in college, hoping that it will help in increasing my chances at placement. So, my advice to everyone will be that it's fine to know multiple languages, but it's important to be pretty good at one. It's tough to fixate on one language for a long term as I have seen these days that different companies are continuously adopting new languages like Golang, Nodejs, etc. My mantra is to read that language's online documentation and practice it as much as you can for learning a programming language.

### Data Structures & Algorithms (DSA) –

DS and algorithms are the most important skill of evaluation for the industry. You learn most of the stuff from your coursework and books. But I would recommend you to try and implement all the data structures like arrays, lists, dictionaries stacks, queues, and graphs a few

times to develop a great understanding of these concepts. You should have the ability to see and understand other people's code and implementation of these topics; this will allow you to improve further on how to write better code. I used to believe that a few years down the line, my current work will become more important for the interviews than the basic implementation of the DSA. But I can now tell you that to date, most prominent tech companies evaluate you on your knowledge of DSA.

### Projects & Internships –

I feel that projects and internships give you the feeling of how a language and DSA help in building out a real-world tool. There are so many tools and technologies floating around the web that were created by developers to help other developers. Building a project allows you to learn about those open source tools. I remember that I built a Twitter sentiment analyser as a pet project to learn about Django, Tweepy, etc. And with this process, I learned how to deploy a website and use git too. So, either you do your own projects, or you can do internships to learn new tools and techniques by practicing. I think it's of great advantage to have a good GitHub profile where you can show some of your pet projects.

### Machine Learning & AI love –

I think there is no denying the fact that everyone wants to go after ML & AI. It's something every company is heavily investing in as they

have lots of data to analyze and understand. What I specifically advise everyone is to not compromise on other expectations (DSA and coding) from you. I know many people are going for advanced ML, participating, and doing well in Kaggle competitions. That is great, and it helps a ton when you apply for ML roles, but I think that even for those roles, you are expected to have a strong understanding of DSA and coding. I believe that the competition in the ML field is enormous; I personally tried and failed to secure roles in the ML field. The reason being the breadth of topics that are expected from you is quite a lot. I have seen people focusing more on tools and advanced ML algorithms but fail on some concepts about statistics and probability. So, make sure you work on the theory as well for comprehending the AI/ML concepts.

### Networking –

Many people have acquired all the skills mentioned above. So, you need something to set you apart from them. Create the right online presence; start grooming your LinkedIn profile. Make it stand out more than others. Although recently, LinkedIn has become flooded with unnecessary content, it is still the best platform to connect to recruiters, people from different companies. Having a good network there would have helped lots of people during Covid layoffs. I would advise you not to be afraid when it comes to sending messages

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over these platforms. If you are interested in a profile at Google, find a person who you think can refer you. I can say that at least 1/10 people (From personal experience) will respond to you positively and consider your case. So, keep trying.

**Everything else –**

There are so many things that come to my mind now, which I think I could have done better when I was in college. But one thing that I believe I don't want to change was participating in online coding competitions (Codeforces, Codechef, Hackerrank, HackerEarth, SPOJ). I

think these contests helped me in developing confidence when it comes to implementing any logic. I am seeing a crazy obsession over FAANGs in recent years and how people measure your talent with the number of questions you solve on Leetcode. I feel bad to say that this is the reality. Companies have created a benchmark of asking from Leetcode, and I would suggest you at least check that site once to see if you are able to solve those problems. Also, keep in mind your mental health (nothing is more important than that). No need to

keep chasing something if it affects your mental health. I can say that interviews have a significant luck component, and things may go bad a few times. Well, I have failed at many interviews (contact me for those experiences), but I felt stronger with each failure as each time, it brings new learning to me.

Take care, and believe in yourself. Enjoy college days ☺. 🎉

Rajesh Kumar is currently working as Software Engineer at Palantir Technologies.

## SPECIAL THANKS TO...



**Sriya Chettebhaktula (BCS-2019)**

Comic sketch creator in realising Abhisar and his friends in “Friends, Fun and Dreams” in the current edition of Abhisar.



**Aaryak Shah (IMT-2019)**

Invaluable efforts in designing the cover of Abhisar volume 10.0.



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## CAREER MANTRA



# AASF

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# A A S F

Coalescence of Knowledge  
and Skills