



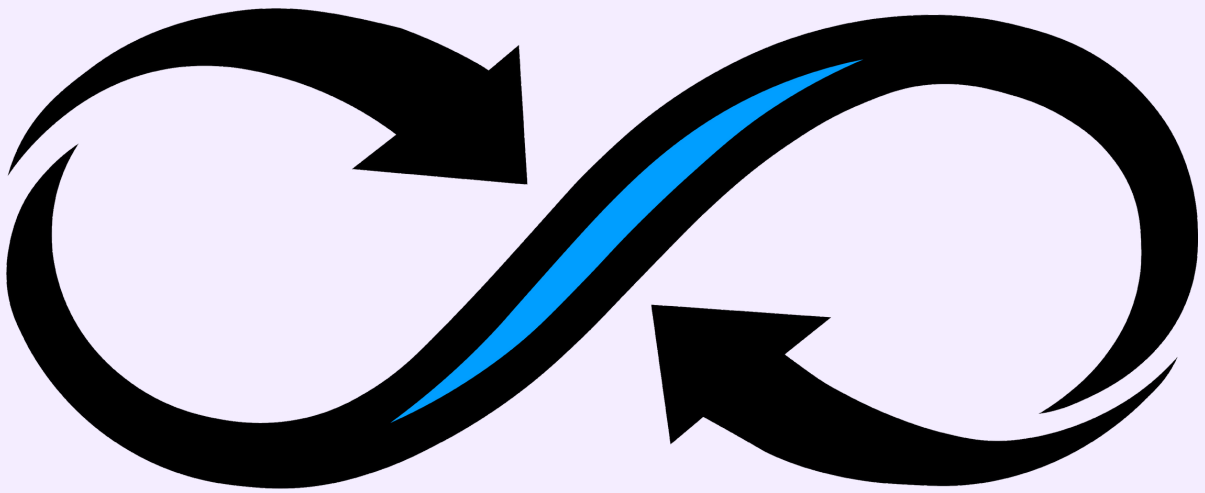
ABIT PRESENTS

ERUDITIO

Innovate . Connect . Inspire



2020



ABIT

TALENTED MINDS

DILIGENT HEARTS



Rajiv Gandhi Institute of Technology
Juhu Versova Link Rd, behind HDFC Bank, Gharkul
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DEPARTMENT OF INFORMATION TECHNOLOGY

HEAD OF
DEPARTMENT

Department of Information Technology
Dr. Sunil B. Wankhade
Professor & HOD

Department of Information Technology
Mr. Shubham
Mr. Abhishek
Mrs. Anjali

VISION
MISSION



Our Inspiration

DEPARTMENT OF INFORMATION TECHNOLOGY

VISION

To become a leading department committed to nurture student centric learning through outcome and skill based transformative IT education to create Technocrats and leaders for the service of society.

MISSION

1. To shape ourselves into a learning community to flourish leadership, team spirit, ethics, listen and respect each other.
2. To provide computer educational experience that transforms student through rigorous course work and by providing an understanding of the need of the society and industry.
3. To educate students to be professionally IT competent for industry and research programme by providing industry institute interaction.
4. To strive for excellence among students by infusing a sense of excitement in Computer innovation, invention, design, creation and entrepreneurship.
5. To contribute in the service of society by participation of faculty, staff and students in socio-economic and socio-cultural activities.

ABOUT ABIT

ABIT, (Association of Budding information Technocrats) is a departmental committee of Rajiv Gandhi Institute of Technology's Information Technology department. ABIT strives on producing "Talented minds, Diligent hearts", providing them a platform to develop and enhance various technical and soft skills, and excel in various fields.

VISION

To encourage innovation and research while instilling values and providing a vibrant environment for the holistic development of students into valuable global citizens.

MISSION

1. To nurture technical skills, creativity and innovation while encouraging multidisciplinary interaction.
2. Expanding student's technological and cerebral awareness by honing their creative spirit, refining them and helping them discover their abilities.
3. To ensure students to be capable of working effectively as an individual and in a team to complete various projects.
4. To inculcate ethical behaviour, responsibility, and commitment among students.
5. To provide the students a platform to enhance and develop various technical skills and soft skills.

PRINCIPAL'S DESK

Welcome!

We at MCT's RGIT Mumbai provide a transformative educational experience and believe that "Education is the manifestation of the perfection already in a man." Since inception, the institute is committed to provide quality learning environment and experience to the students and faculty. Over the years, our work ethics and policies have evolved from the vision of our inspiration Late Shree Vilasraoji Dagdojiraoji Deshmukh and various notable educational and social philosophies. Although I firmly believe Science and Technology as extraordinary resources of the world, yet I feel availability of good leadership is necessary in development of nation. We have outstanding record of taking specific efforts in developing academic excellence, Character and Personality of our students. The Academics, Co-curricular and Extra-Curricular activities of our institute are designed for enabling students to be versatile technocrats and leaders of enormous potential.

Our major strengths are our worldwide network of Alumni, our linkages with apex educational and research institutions, our human resource and our infrastructure. The worldwide research in studying role of technocrats in socio-economic development of the nation has proved that technological innovations are the base of economic development of a nation. Moreover, the economic growth of USA in the last fifty years is attributed to science and technology. As a technological institution, this motivates us to shoulder the huge responsibility of contributing to technological world for overall development of our nation. The institute has aligned its mission for developing the young minds into the human capital as an engineering workforce of the nation.



Dr. Sanjay U. Bokade

We aim to enhance linkages with apex educational and national research institution and develop systems for leading the institute towards academic autonomy and set foundation for institute to be a Centre of Excellence in next five years. I assure you that your stay as student at RGIT will be a memorable experience in the context of learning a value based education. Will enable you to be successful in career and life.

HOD'S DESK

Teaching in this institution for more than two decades has endowed me with many momentous memories throughout my term. The memory that shines the brightest out of all of them, belongs to the day the Association of Budding Information Technocrats came into existence.

The synchronization between the latest technology and the ones from the past play an important role in advancing throughout the years. The institution has always encouraged hard work and honesty, and our students have always upheld these values. The students, across the years, have worked relentlessly on various projects and events and have always come up with new ideas that result in great outcomes.

I strongly applaud the ABIT committee on their marvelous work on this magazine. Despite the ongoing pandemic, the students always deliver their best and never cease to impress the institute with their creativity and consistency. There is no substitute for hard work, this is something I have always believed in and I always encourage our students to always do the best they can in any situation that presents itself.

I commend the efforts taken by the "Association of Budding Information Technocrats", or putting together this edition of ERUDITO, and not to forget, the plausible team work that made it possible. As a technological institution, it is essential to keep our thoughts and actions in line with the rapid growth in the technological sector. We are dedicated to

positively enhancing the learning experience and will always work towards providing the support needed by our talented students to become successful leaders of tomorrow. I wish you a delightful reading experience.



Dr. Sunil B. Wankhade



CONVENOR'S DESK

Prof. Nilesh Rathod

Greetings to dear students, teachers, other staff members, and parents. The academic year 2020- 21 was a challenging year for all of us. However, I believe we have been able to overcome it together with the best of our efforts. I sincerely appreciate the hard work of our students who enthusiastically organized various online events while keeping in mind the objectives of the Association of Budding Information Technocrats. They did not let their spirits down and worked more than they would have done in the physical mode. The guidance and support of the teachers who were involved in the society work needs a special applause. Despite multiple challenges, I am proud to mention that the core team of the ABIT RGIT was able to deliver many webinars. I am sure that all the participants, especially the students of the department of Information Technology have benefited by participating in various events that were held under the banner of the ABIT and had an enriching experience.

ERUDITO 2020 is a matter of great pride to me, as a student convener of ABIT RGIT, I am proud to be part of this thriving committee which has been in the circuit for more than 9 years now at this college. This magazine is our way of getting the latest in technology and that of our work towards each student. Though the academic curriculum of the Mumbai University is fairly extensive, there is a lot more that is happening in the technical world we do not really have a clue of. Acknowledging this fact there is a need among the students to know all that is happening in the areas related to their field of study. Hence, ERUDITO was incepted going to be a magazine dedicated to the fields of popular science and technology. it will also help the students, to share with the student community, their knowledge of the recent trends in technologies. I wish all the students a very bright career ahead.

EDITOR'S NOTE

Aaina Jain
Editorial Secretary
ABIT-RGIT

A little over a year ago, we didn't know much about living a life with lockdowns, social distancing and self-isolation or that we would live through them for the rest of the following years. Nobody had envisioned the storm and thunder that was going to pour in torrents at us. Who'd have thought that 2020 would be the year when we'd have to knock elbows instead of shaking hands, stand two meters apart from one another at all times, or abandon going to college and have the time of our lives altogether?

The fact is, things have changed or I'd rather say that COVID-19 has acted as a catalyst in bringing out the best in technology. Advances in fields such as artificial intelligence, e-commerce and the Internet of Things were already well established on the tech trends radar. Of course, we've understood the importance of digital connectivity for decades. But we never predicted it would become the center point for our everyday lives almost overnight.

Hence, as the editor of our magazine, it is my responsibility to expose the bright side of the global pandemic and present to you the HI-tech era that we live in today. Our magazine ERUDITO 2021 is an amalgamation of technical as well as a few non-technical pieces of information that will keep you absorbed.

I extend my whole hearted gratitude to the honorable principal Dr. Sanjay U Bokade, to our worthy HOD, Dr. Sunil B. Wankhade, and also to the convenor of our ABIT committee Prof. Nilesh T. Rathod for their dynamic, inspirational, enthusiastic contribution and motivation towards our department. Nonetheless, boosting our confidence for publishing the first issue of the magazine ERUDITO. Grateful to the whole editorial team who invested their time and intellect towards this articulation without whom this venture wouldn't have been possible.

I hope the magazine keeps you grasped into reading till the end and you enjoy it just as much as we enjoyed putting it together.

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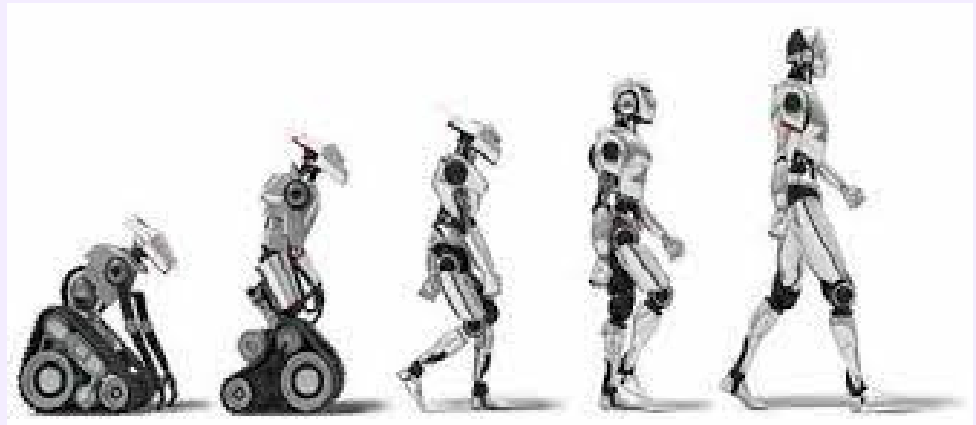
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Rise of the Robots--The Future of Artificial Intelligence

- Atish Kasar

In recent years the mushrooming power, functionality and ubiquity of computers and the Internet have outstripped early forecasts about technology's rate of advancement and usefulness in everyday life. Alert pundits now foresee a world saturated with powerful computer chips, which will increasingly insinuate themselves into our gadgets, dwellings, apparel and even our bodies.

Yet a closely related goal has remained stubbornly elusive. In stark contrast to the largely unanticipated explosion of computers into the mainstream, the entire endeavor of



robotics has failed rather completely to live up to the predictions of the 1950s. In those days experts who were dazzled by the seemingly miraculous calculational ability of computers thought that if only the right software were written, computers could become the artificial brains of sophisticated autonomous robots. Within a decade or two, they believed, such robots would be cleaning our doors, mowing our lawns and, in general, eliminating drudgery from our lives.

Obviously, it hasn't turned out that way. It is true that industrial robots have transformed the manufacture of automobiles, among other products. But that kind of automation is a far cry from the versatile, mobile, autonomous creations that so many scientists and engineers have hoped for. In pursuit of such robots, waves of researchers have grown disheartened and scores of start-up companies have gone out of business.

It is not the mechanical “body” that is unattainable; articulated arms and other moving mechanisms adequate for manual work already exist, as the industrial robots attest. Rather it is the computer-based artificial brain that is still well below the level of sophistication needed to build a humanlike robot.

Nevertheless, I am convinced that the decades-old dream of a useful, general-purpose autonomous robot will be realized in the not too distant future. By 2010 we will see mobile robots as big as people but with cognitive abilities similar in many respects to those of a lizard. The machines will be capable of carrying out simple chores, such as vacuuming, dusting, delivering packages and taking out the garbage. By 2040, I believe, we will finally achieve the original goal of robotics and a thematic mainstay of science action: a freely moving machine with the intellectual capabilities of a human being.



Reasons for Optimism:

In light of what I have just described as a history of largely unfulfilled goals in robotics, why do I believe that rapid progress and stunning accomplishments are in the offing? My confidence is based on recent developments in electronics and software, as well as on my own observations of robots, computers and even insects, reptiles and other living things over the past 30 years.

The single best reason for optimism is the soaring performance in recent years of mass-produced computers. Through the 1970s and 1980s, the computers readily available to robotics researchers were capable of executing about one million instructions per second (MIPS). Each of these instructions represented a very basic task, like adding two 10-digit numbers or storing the result in a specified location in memory.

In the 1990s computer power suitable for controlling a research robot shot through 10 MIPS, 100 MIPS and has lately reached 50,000 MIPS in a few high-end desktop computers with multiple processors. Apple's MacBook laptop computer, with a retail price at the time of this writing of \$1,099, achieves about 10,000 MIPS. Thus, functions far beyond the capabilities of robots in the 1970s and 1980s are now coming close to commercial viability.

For example, in October 1995 an experimental vehicle called Navlab V crossed the U.S. from Washington, D.C., to San Diego, driving itself more than 95 percent of the time. The vehicle's self-driving and navigational system was built around a 25-MIPS laptop based on a microprocessor by Sun Microsystems. The Navlab V was built by the Robotics Institute at Carnegie Mellon University, of which I am a member. Similar robotic vehicles, built by researchers elsewhere in the U.S. and in Germany, have logged thousands of highway kilometers under all kinds of weather and driving conditions. Dramatic progress in this field became evident in the DARPA Grand Challenge contests held in California. In October 2005 several fully autonomous cars successfully traversed a hazard-studded 132-mile desert course, and in 2007 several successfully drove for half a day in urban traffic conditions.

In other experiments within the past few years, mobile robots mapped and navigated unfamiliar office suites, and computer vision systems located textured objects and tracked and analyzed faces in real time. Meanwhile personal computers became much more adept at recognizing text and speech.

Still, computers are no match today for humans in such functions as recognition and navigation. This puzzled experts for many years, because computers are far superior to us in calculation. The explanation of this apparent paradox follows from the fact that the human brain, in its entirety, is not a true programmable, general-purpose computer (what computer scientists refer to as a universal machine; almost all computers nowadays are examples of such machines).

E-commerce

- Gaurav Singh

E-commerce, in full electronic commerce, maintaining relationships and conducting business transactions that include selling information, services, and goods by means of computer telecommunications networks.

Although in the vernacular e-commerce usually refers only to the trading of goods and services over the Internet, broader economic activity is included. E-commerce consists of business-to-consumer and business-to-business commerce as well as internal organizational transactions that support those activities.

E-commerce originated in a standard for the exchange of business documents, such as orders or invoices, between suppliers and their business customers. Those origins date to the 1948-49 Berlin blockade and airlift with a system of ordering goods primarily via telex. Various industries elaborated upon that system in the ensuing decades before the first general standard was published in 1975. The resulting computer-to-computer electronic data interchange (EDI) standard is flexible enough to handle most simple electronic business transactions.





Mass customization of goods sold online, such as garments and vehicles, became common. Electronic currencies (or cryptocurrencies) such as Bitcoin entered into play as the means of settlement. Semipermanent supply chains enable a hub company (such as Dell) to surround itself with suppliers that perform most production tasks and deliver other goods and services to the central firm. Social network sites, such as Facebook, undergird a great variety of individual relationships and are the site of so-called social commerce, driven by the opinions and reviews shared by the participants as the electronic word-of-mouth. Online communities bind together participants who wish to share their knowledge, forge lasting relationships, or present themselves on a broad forum. Those communities became a potent source of cocreation of value by individuals who together and over long stretches of time, for example, produce open-source software or continually replenish an online encyclopedia.

The Web is also an interactive medium of human communication that supplements, and often replaces, traditional media. The hypermedia nature of the Web, with the interlinking of multimedia content available on globally distributed sites, enables creation of new types of media products, often offered free of charge. Those new media include blogs, video aggregators (such as

YouTube), social media (built with wiki technology, for example), and customized electronic newspapers. As with all media, this aspect of the Web leads to its use in marketing.

Web advertising ranges from the display ads on Web sites to keyword ads shown to information seekers using search engines, such as Google. Mobile advertising is expanding apace because of the extensive use of smartphones. Deep knowledge of individuals is available to marketers because of the electronic collection of multifaceted profiles as people navigate the Web. In particular, location-based promotion of goods and services may be enabled in mobile commerce. The ability to derive revenue from ads drives various business models (for example, search engines) and produces incremental revenue for other businesses, as their customers access their Web sites or use mobile apps and can be exposed to the advertising messages. Among innovations that have contributed to the growth of e-commerce are electronic directories and search engines for finding information on the Web; software agents, or bots, that act autonomously to locate goods and services; systems that recommend products to users based on their profile; and digital authentication services that vouch for identities over the Internet. Those intermediary services facilitate the sale of goods (actually delivering the goods in the case of information), the provision of services such as banking, ticket reservations, and stock market transactions, and the delivery of remote education and entertainment.

Businesses often deploy private Internet-type networks (intranets) for sharing information and collaborating within the company, usually insulated from the surrounding general Internet by computer-security systems known as firewalls. Collaborating businesses also frequently rely on extranets that allow encrypted communication over the Internet. Security is a central concern in e-commerce. It includes authentication of the parties, authorization to access the given resources, confidentiality of the communication, and the assurance of message integrity. Many of those goals are accomplished with public key infrastructure, a system of specialized organizations and computerized means for providing electronic certificates that authenticate firms and, if desired, individuals; provide the encryption and decryption keys for communication; and furnish the protocols (algorithms) for secure communication. However, absolute security is not an attainable goal. Many spectacular data breaches are testimony to this, as well as to the neglect of this vital aspect of e-commerce.

Security underlies another important aspect of e-commerce, that of privacy. The massive assembly and use of individual profiles that reflect activity over many years and in many personal pursuits raises concerns. Such concerns are so far only partially addressed via legislation, self-regulation, and public pressure that can find instantaneous social amplification on the Internet.



Several important phenomena are associated with e-commerce. The role of geographic distance in forming business relationships is reduced. Barriers to entry into many types of businesses are lower, as it is relatively inexpensive to start a retail Web site or a community of producers. Some traditional business intermediaries are being replaced by their electronic equivalents or are being made entirely dispensable. (For instance, as airlines have published fare information and enabled ticketing directly over the Internet, storefront travel agencies have declined.) Prices of goods are generally lower on the Web—a reflection not merely of the lower costs of doing electronic business but also of the ease of comparison shopping in cyberspace. Consumers benefit greatly from the availability of products that are bought only rarely and would not be stocked by physical stores (the so-called longtail effect). Ever-new business models emerge and are pivoted (modified) as the marketplace reaction can be gauged rapidly. Since the incremental cost of producing a unit of content good (such as a software product) is close to zero, freemium business models are often employed in the content domain: the basic product is free, the premium versions are charged for. A new form of corporate cooperation known as a virtual company—which is actually a network of firms whose information systems are integrated over the Internet, each firm performing some of the processes needed to manufacture a product or deliver a service—has flourished. Broad publics are drawn in to contribute their labour, ideas, or funds in crowdsourcing initiatives.

E-commerce originated in a standard for the exchange of business documents, such as orders or invoices, between suppliers and their business customers. Those origins date to the 1948–49 Berlin blockade and airlift with a system of ordering goods primarily via telex. Various industries elaborated upon that system in the ensuing decades before the first general standard was published in 1975. The resulting computer-to-computer electronic data interchange (EDI) standard is flexible enough to handle most simple electronic business transactions.

With the wide adoption of the Internet and the introduction of the World Wide Web in 1991 and of the first browser for accessing it in 1993, most e-commerce shifted to the Internet.

More recently, with the global spread of smartphones and the accessibility of fast broadband connections to the Internet, much e-commerce moved to mobile devices, which also included tablets, laptops, and wearable products such as watches.



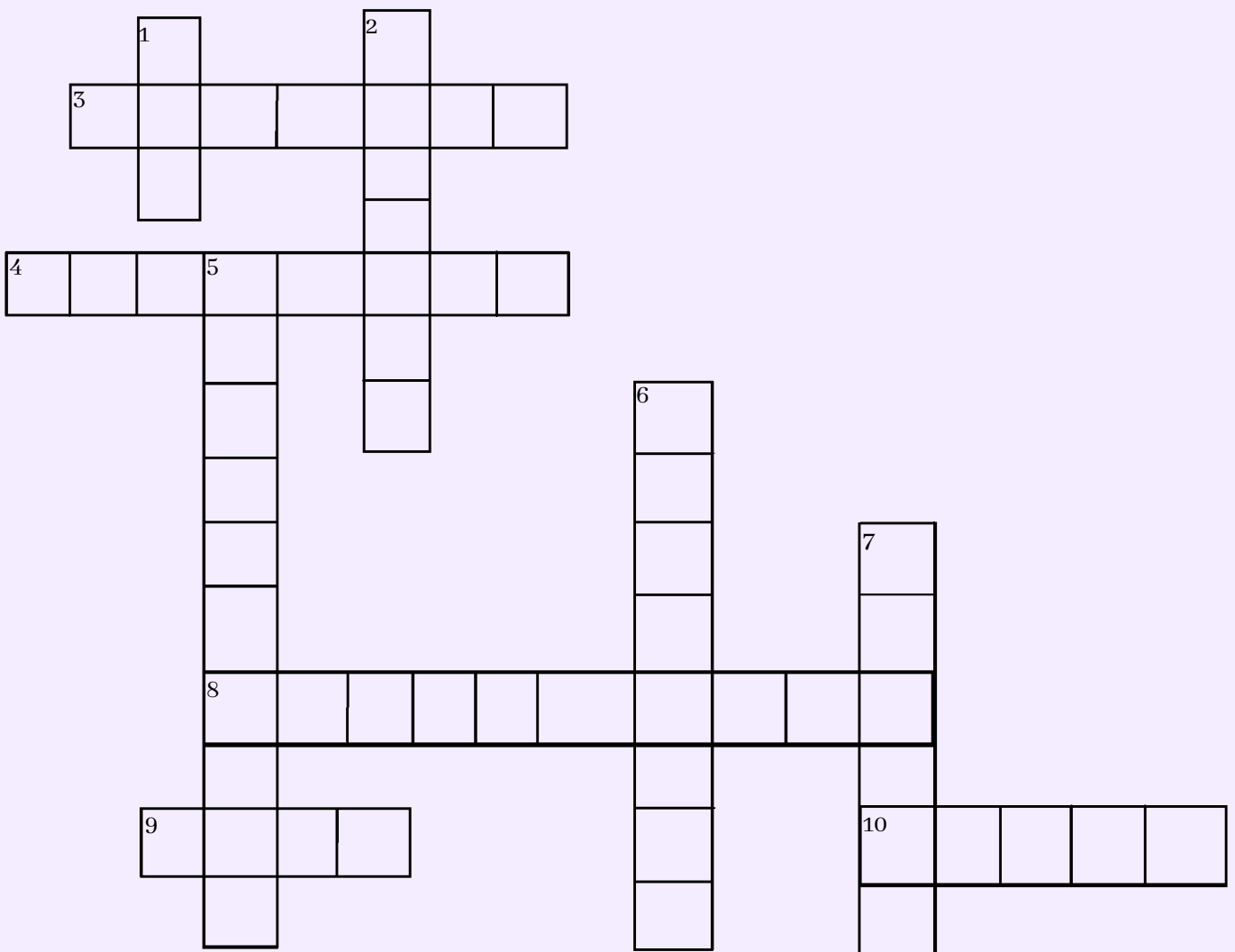
E-commerce has deeply affected everyday life and how business and governments operate.

Commerce is conducted in electronic marketplaces (or marketspaces) and in the supply chains working on the Internet-Web. Consumer-oriented marketplaces

include large e-malls (such as Amazon), consumer-to-consumer auction platforms (eBay, for example), multichannel retailers (such as L.L. Bean), and many millions of e-retailers. Massive business-to-business marketplaces have been created by Alibaba and other companies. The so-called sharing economy enables more efficient use of resources, as Airbnb does with online rentals of private residences. Almost instantaneous access to services is made available by on-demand platforms offering, for example, transportation (e.g., Uber), computation and storage resources furnished by cloud service providers, and medical and legal advice.

CYBERSECURITY

Cyber Security is a very important discipline in today's day and age. With increasing data breaches and cyber-attacks every day, the need for cyber security is ever-growing. If you want to test your knowledge in cyber security or just learn more about it, this quiz is for you. Go ahead and give yourself a pat on your back if you get all correct!



ACROSS :

3. A software that covertly monitors your online behavior
4. A software or hardware device designed to protect your private data
8. A piece of malware that often allows a hacker to gain remote access to a computer through a back door
9. A piece of malicious code that can replicate itself in order to spread the infection to other connected computers
10. A technology that enables us to access our files through the internet remotely

DOWN :

1. A tool that helps mask to location of the user to guarantee anonymity
2. The short form of malicious software
5. The process of encoding data to prevent theft by ensuring the data can only be accessed with a key
6. The practice of sending fraudulent communications that appear to come from a reputable source
7. An incident where a hacker gains unauthorized access to a computer or device

Java

- Neha Nanche

Introduction:-

Java is related to C++, which is a direct descendent of C. Much of the character of Java is inherited from these two languages. From 'C' Java derives its syntax. Many of Java's object-oriented features were influenced by C++.

The creation of Java:-

Java was conceived by James Gosling, Patrick Naughton, Chris Warth, Ed Frank and Mike Sheridan at Sun Microsystems, Inc. in 1991. It took 18 months to develop the first working version. This language was initially called "oak" but renamed "Java" in 1995. Many more people contributed to the design from which Bill Joy, Arthur Van Hoff, Jonathan Payne, Frank Yellin and Tim Lindholm were key contributors to the maturing of the original Prototype.

The trouble with C & C++ were that compilers are expensive and time consuming to create. In an attempt to find an easier and more cost-effective solution, Gosling and others worked on a portable, platform-independent language that could be used to produce code that would run on a variety of CPU's. Under differing environments. This effort ultimately led to the creation of Java.

Key Features of Java:-

1.Simple: Java is designed to be easy for every programmer, as it inherits the C/C++ syntax and many of the object-oriented features of C++ makes it easy to learn and use effectively.

2.Secure: Because Java compiles as bytecode which then runs inside a Virtual machine, it cannot access the computer it runs on like a natively compiled program can.

3.Portable: Java is considered a portable programming language, mainly because a generic Java Application can be run from most machines.

4.Object- Oriented: In Java “everything is an object”. The object model in java is simple and easy to extend, while primitive types, such as integers, are kept as high-performance non-objects.

5.Robust: In designing of Java, the ability to create robust programs was given the highest priority. As java is strictly typed language, it checks your code at compile time and frees you from errors.

6.Multithreaded: Java is designed to meet the real world requirement of creating interactive, networked programs, as it supports multithreaded programming, which allows you to write programs that do many things simultaneously.

7.Architecture-Neutral: One of the main problems facing programmers is that no guarantee exists that if you write a program today, it will run tomorrow-even on the same machine. The Java Virtual Machine is a solution to it as it accomplishes the goal “write once; run anywhere, any time, forever.”

8.Interpreted and High Performance: The performance of Java is impressive for an interpreted language because of its intermediate bytecode. Java provides high performance with the use of “JIT – Just In Time compiler”, in which the compiler compiles the code on- demand basis, that is, it compiles only that method which is being called.

Object-Oriented Programming:-

OOP is at the core of Java. OOP organizes a program can be characterized as data controlling access to code. An essential element of OOP is abstraction.

Applications Of Java Programming:

- **Financial services:** It is used in server side applications.
- **Big Data:** Hadoop MapReduce framework is written using Java.
- **Banking:** To deal with transaction management.
- **Stock market:** To write algorithms as to which company they should invest in.
- **Retail:** Billing applications that you see in a store/restaurant are completely written in Java.
- **Android:** Applications are either written in Java or use Java API.
- **Scientific and Research Community:** To deal with huge amount of data

Future Scope of Java Programming language:

With time, Java has evolved and established its place as an essential ingredient for making successful software and applications. There is no denial to the fact that Java is the most important thing happened to IT industry across the globe after C++. It has an illustrious journey since its inception and has been the backbone of many new products and services that have surprised the world. The best part about Java is, its eco-system is self-sustaining, from mobility (Android) to middleware (Hadoop), it impacts everything and will continue to make a big impact in future too.



Impact of Covid on Technology

- Sakshi Rathod

IMPACT OF COVID ON TECHNOLOGY

The COVID-19 pandemic altered our world in many ways including the acceleration of digital transformation. Here we discuss the five technology megatrends of our times and how their adoption was accelerated by the reality of trying to sustain business as well as live and cope in a COVID-19-impacted world.

While many were juggling at-home schooling of children and professional responsibilities amid stay-at-home orders because of COVID-19, the digital transformation accelerated. Here are five of the biggest technology trends of our times and how the coronavirus pandemic accelerated their adoption. This acceleration will change how businesses operate and compete as they emerge out of the pandemic.

1. Artificial Intelligence (AI)

Even before COVID, artificial intelligence helped organizations engage with customers and automate and enhance business processes. We have more data than ever before and AI allows us to make sense of the data faster. During the COVID pandemic, when time was of the essence, AI helped public health officials predict infection rates as well as ICU demand and capacity.

As we start to emerge from lockdown, AI is helping companies understand economic trends, as well as their competitors and customers. One of my clients is a construction company and they are using AI and satellite image data to better understand and analyze progress against their competitors.

2. Robotics, Drones and Vehicle Automation

The next mega trend that accelerated during COVID-19 is the use of robotics, drones and vehicle automation. Of course, AI is a massive enabler to these technologies.

To ensure compliance with social distancing, China used drones to monitor its population, Amazon put machine learning to use in its warehouses to confirm social distancing and in Singapore, a Boston Dynamics robot in the shape of a dog and aptly named Spot patrolled parks. If a violator was spotted, Spot would approach and play a recorded message to remind them of the mandates for social distancing and large groups.

Another way robots, drones and vehicle automation are put to use is to ensure resiliency of the supply chain. During COVID, many companies experienced disruptions to their supply chains. In order to avoid that situation in the future in the event of future pandemics, they are beginning to explore how to minimize human involvement in the supply chain where possible. As a result, the use of robots for deliveries and automating trucks and ships throughout supply chains is being tested.

3. The As-a-Service and Cloud Revolution

One of the ways that makes companies adaptable to market conditions is the ability to dial up or down their services through as-a-service platforms and through the cloud. We now have as-a-service solutions for artificial intelligence, robotics, machine learning and other technologies. This makes it possible for companies to partner with IBM, Microsoft, Amazon and other as-a-service and cloud providers to use their AI platform and pay for what they need when they need it.

For example, during COVID, Zoom saw very high demand for its service as people were working remotely but still needed to conduct business. Zoom was able to accommodate this huge spike in demand because they scaled up with their cloud provider. Cloud gives you the ability to scale up and down as necessary.

Today it's possible to lease robotic devices for a number of different uses including for security, warehouse picking and assembly lines through robotics-as-a-service providers such as Google, Amazon and Honda.

4. Faster Networks and 5G

While we were forced to work from home during the pandemic, many companies realized positive outcomes and even after COVID-19 is behind us we'll still need stable wireless networking. The number of devices needing to be connected wirelessly will continue to grow as will the varied streams of data. The fifth generation of the internet, 5G will transform things and it will be so much faster than 4G.

The speed and reliability of 5G will enable even more technologies to be adopted by a wider variety of organizations and industries. In fact, there's now facial recognition for salmon farms deployed at fish farming giant Cermaq. The system uses cameras capable of 3D scanning and can tell fish apart by the pattern of spots around their eyes, gills and mouth. This technology can help monitor the health of the fish population and contribute to increases in production. However, for this type of technology to be used seamlessly it requires a mobile network capable of handling large amounts of data. 5G allows for the connection that is needed on the mobile internet. The as-a-service trend will also be able to expand with the capabilities of 5G and can open the door to different use cases such as in entertainment and gaming and enables all the other technologies discussed here.

5. Extended Reality (Augmented, Virtual and Mixed Reality)

When shops weren't open due to COVID-19, those that had virtual reality were able to sustain better during the pandemic than those who didn't. There are many ways extended reality including augmented, virtual and mixed reality help enhance the customer experience.

There is now a way to have an eye exam through a VR headset and once you get a prescription you can try out different styles of frames through an augmented reality platform.

This try-before-you-buy capability through extended reality is offered when shopping for hats at Tenth Street, the IKEA Place app where you can see how a piece of furniture will look in your home as well as through Dulux Visualizer to help you make the right paint color choice for your room. The same technology helps you see how new cosmetics or haircuts will look on you.

In education, extended reality can make a powerful impact and make lessons more engaging. As an example, students can feel immersed in a history lesson or feel like they are walking down the streets of Ancient Rome or in another person's shoes.

This technology has plenty of marketing applications as well. Fast-food chain Burger King created a "burn that ad" campaign that used augmented reality to "burn" up competitors' ads. After a customer burns an ad, they are rewarded with a free Whopper.



Drones For Delivery

- Muazzam Shaikh



Drones are a hot topic lately, especially in the world of business. Drones are unmanned aerial vehicles that use technology to fly. Some of them are used for civilian purposes while others can be used by the military or law enforcement activities. They have recently been introduced into the United States market because they offer cheaper alternatives to airplanes due to their size and abilities. Today, drones aren't just for hunters and hobbyists. In fact, the commercial drone industry is booming. In 2017 alone, 855 companies have been granted "drone exemptions" to fly drones commercially under the FAA's Section 333 Exemption program.

Delivery drones are pilotless aircraft carrying packages such as healthcare supplies, food, etc to a designated area. The delivery drones are remotely controlled through a controlled station where its operators can monitor multiple drones at once keeping track of every package delivered.



There are over 23,000 companies that have started drone deliveries in 2017 alone with estimates being that this number will increase exponentially in 2018 and beyond due to increased demand for drone-based delivery services rather than using aircrafts within their respective networks. However, drones do present an alternative for delivery services allowing them to have cheaper prices that can offer more flexibility for their clients.



A recent study conducted by the U.S. Department of Transportation showed that 285 operators were issued with certificates over the period of one year, 2016 to 2017 which further supports this popular notion. This is an increase from 2015 when 137 operators had been issued certificates over the same time period.

The fact that there are currently 285 companies shows how much potential this industry has which allows it to grow exponentially within the next few years. This also shows how much money is invested into drones as a multicultural method of delivering goods rather than other methods such as airplanes or helicopters, both providing quicker delivery times but costing companies more money overall.

The future of deliveries might be flying through the sky. A number of companies are testing drones for delivery, and if they catch on, it could change the way we get our packages delivered.

If you've paid attention to any tech-related news in recent years, you've no doubt seen a story about Amazon experimenting with using drones to deliver packages at home. While only a small number of select customers have actually received their package this way (and many people aren't even aware that Amazon is doing this), we can expect these drone experiments to ramp up over the next few years — and maybe change how we get our orders delivered.

Nearly all of the technology used in these drone delivery programs is still in development, so it's hard to know how long it will be before we can expect to see them in our skies. But if they're successful, they could help speed up deliveries (and save money), and it could also change the way people get their packages.



For starters, drones could give you an app that sends out an alert when your package arrives, rather than waiting for the postman to ring your doorbell. This means no more waiting around for UPS or FedEx to deliver your package (or even worse, never knowing if it showed up).

Drones would also make it easier to deliver things quickly. A drone could drop off your package at your door or your office faster than you could get out the door yourself, cutting down on the time it takes to get what you're getting. That would also mean fewer deliveries overall, which could be a big savings for big companies that have pricey fleets of delivery vans.



Proponents of drone delivery services do not believe in these concerns mainly due to their own opinions on how beneficial drone delivery services can be for stores especially in less populated areas such as rural locations, desolate regions and even smaller towns.

How do drones work?

Drone technology is based on the miniaturization of helicopter drone technology. Helicopters are essentially big propeller-driven planes, but they can also hover in one spot, making them easier to control and maneuver. In fact, the propellers on a helicopter make up about 70% of its weight! If you took all the propellers off a helicopter, it would essentially be a plane.

Today, drone technology simplifies the process of flying that big helicopter into a smaller, lighter device that is more flexible and can easily be controlled by an onboard computer. The main parts of a modern drone are described in the diagram below:

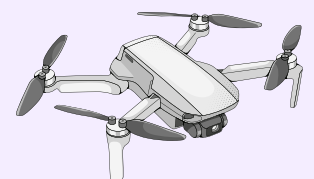
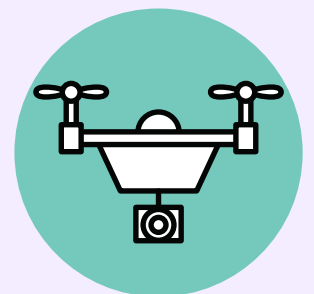
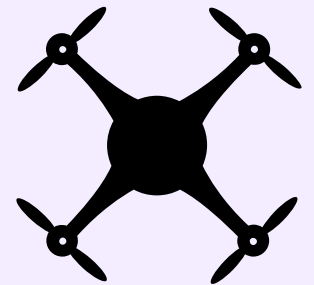
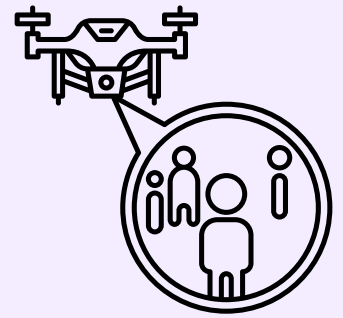
The "brain" of the drone (which is battery powered) is called the Flight Controller. It schedules how much power it will allow to be drawn from the battery depending on what manoeuvres you want it to perform. This ensures your drone's props don't stop spinning mid-flight! It also controls where your drone really is in space by coordinating data from its GPS unit to determine its exact position. The Flight Controller is connected to the motors on the bottom of your drone, called Propellers. The propellers rotate opposite directions so they can spin in opposite directions. There are two sets of propellers on your drone: The "Main Propellers" or "Forward Propeller" that is closest to the main control unit, and the "Rear Propeller" that is furthest away from this control unit.

It could also save space, since smaller packages can often be delivered by drone without taking up more room in a van or on another human's back. This means stores could sell more small items, like vitamins or even candy bars, without having to pack so many of them in each delivery. And some of those bigger packages could also be cut down thanks to drones, since it would be faster and more efficient to deliver smaller packages using a drone rather than driving them all the way to someone's house or office.

However, there is an increasing concerns about drones within delivery networks with many concerns on how they might be potentially dangerous if not regulated properly.

Even though drones can present cheaper alternatives to airplanes and helicopters, there are still concerns surrounding the drone industry. One of the concerns is how drones will be regulated by Federal Aviation Administration (FAA). Specifically, what types of certifications will they need in order to fly certain types of drones while also adhering to rules and regulations that have yet to be formed?

Companies are worried that they cannot fly their drone within certain areas that have not yet been defined or even identified by the FAA due to privacy issues that have not been tackled by the United States government so far. Furthermore, there are companies worried about other companies using their technology without permission. Is this bad or good? First of all, it is important to note that businesses must obtain a license from the FAA in order to fly drones over certain areas. This is to ensure that the business owns the technology and right to fly their drones. However, it has been noted by many companies that there are instances when other companies have flown their drone without permission in order to take pictures or capture videos of certain areas. This can lead to legal issues where the business receives fines for violating FAA regulations during commercial use.



Software Engineering

- Shimirika Nikam

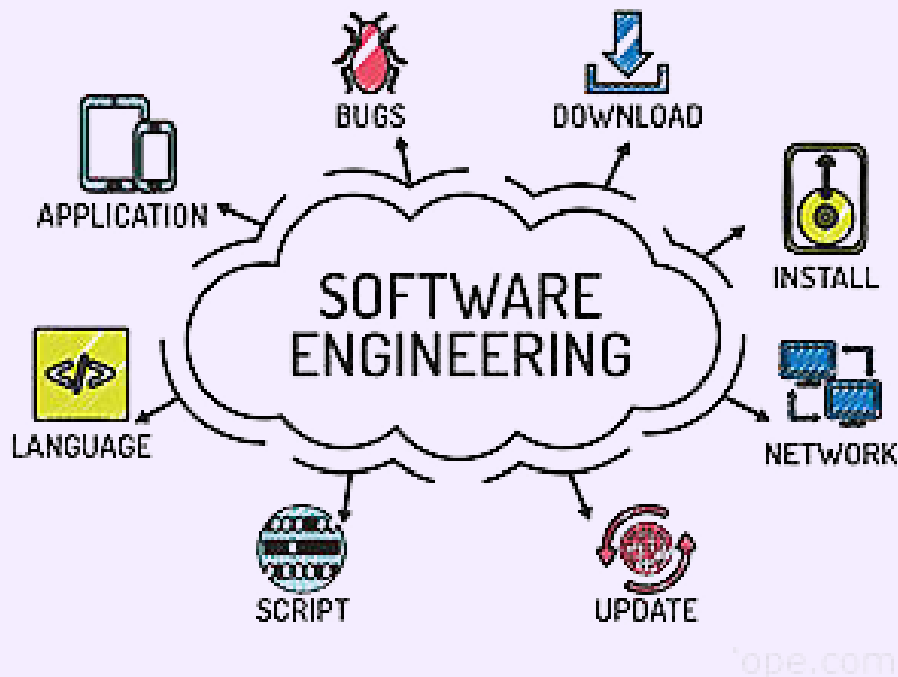
The engineering field has taken on many new disciplines as our scientific knowledge has grown. The latest discipline is software engineering.

You might have a question bouncing around in your head, what is Software engineering?

Software engineering is a field of Computer science, that focuses on planning and composing projects for computers or other electronic gadgets. A software engineer designs a software utilizing techniques that bring about a noticeable improvement quality. Better quality programming is user-friendly, makes code easier to understand and maintain, makes it simple to add new versions, is dependable, effective, and meets all of the requirements that clients have specified. It is significant due to effect of large expensive software systems and the role of software in safety-critical applications. Software engineering differs from other branches of engineering in that professionals are building an intangible structure and not a tangible one. Since software is embedded in the machines used in various industries, though, malfunctioning software can actually have tangible effects. With software used in everything from medical equipment to airplanes, the end result of faulty software can indeed be loss of life.

Even non-embedded software has a significant impact on our lives. We routinely trust software with our financial information and passwords. We use it to run our businesses and conduct our work activities. There may be hackers or system overloads. Then there are the times that the software works from a technical standpoint, but fail to give a good user experience. Too often, routine software is designed from a "code and fix" model when sounder principles at the front end would alleviate problems. Here, too, it's important to have a thorough grasp of the purpose of the structure and of the many things that structure may be called upon to withstand.

Software engineering often does involve writing code, but this is only one stage in the process. True software engineering has a well-articulated life cycle.



“Software is a great combination between artistry and engineering.” – Bill Gates

The Software Engineering Process

When software projects require engineering, the process begins long before the product is designed and it continues long afterward. It begins with a thorough study of the software requirements. Some requirements involve the functions the program needs to carry out. For example, the program may need to verify that a user is authorized to access it. Other requirements involve constraints, for example, systems already in place.

The next stage is software design. This involves creating algorithms, or instructions for the computer. The actual coding process can be completed by software engineers, who have comprehensive training, or by programmers who are versed only in coding. Later comes validation and maintenance. Stages don't necessarily proceed in a linear manner; they may be organized in a variety of ways, including spiralling.

What types of software require engineering?

A systematic and disciplined approach is not necessary for every endeavour. We don't need any technical training to develop a simple game or program to teach our child to read. However, it is needed in the development of high-stakes software for the Department of Defence.

Businesses also employ software engineers to create customized software and address vulnerabilities before they happen. This makes sense when we think of the complexity of the tasks that the average professional carries out, tasks like holding meetings in real time with collaborators oceans away. Even when engineering principles aren't necessary for safety, sound design can increase efficiency and decrease costs.

You'll find a diverse group of employers advertising for true software engineers. Disney Interactive Media is among the companies looking for software developers who are familiar with the software development life cycle.

Education and Career Opportunities for Software Engineers

There are two main branches of software engineering. Applications software engineers create and maintain computer applications. Systems software engineers analyse technical needs and create or maintain appropriate systems. Setting up and maintaining intranet systems would fall under their scope.

Software engineers typically hold at least a baccalaureate degree. A master's degree is necessary for some positions. The focus is on acquiring a core of software development knowledge that will remain relatively stable across a span of years, even as new languages are developed and others fall out of favour.

Software engineering is a growing field, even in difficult economic times. The Bureau of Labor Statistics reports that while employers may outsource some positions, outsourcing is less likely to occur in highly specialized computer and software engineering positions than in lower level programming positions. There are exciting opportunities for those with an educational background in software engineering, computer science, software development, computer engineering and similar disciplines.

Startups in India

- Vibha Shinde

What is a startup?

A startup is a company or project undertaken by an entrepreneur to seek, develop, and validate a scalable business model which supports innovation and growth.

Startups in India did not start overnight but slowly over a period of time. It was in the year 2008, after a global recession hit the world, that the first startup revolution began to take shape. Post the 2008 crisis, as India's growth and exports fell sharply, our policymakers stepped in to support growth. The Great Recession caused businesses to reallocate their resources and lay off employees in large numbers. So it became a challenging task for the IT professionals to get back on track.

India's startup ecosystem

India's startup ecosystem has been prevalent for over four decades. It has given rise to several industries and expanded the Indian economy. As the story of Indian startups has began over four decades ago, companies such as TCS, Infosys and Wipro have places India firmly on the global economic map. Followed by the 90's which witnessed the launch of Airtel the largest telecommunications company, ICICI, HDFC and Axis banks.

In today's ecosystem, founders are trying to build startups that solve problems. Startup teams in India are much younger than elsewhere globally. As a result, founding team members typically lack the experience of having worked in a mature organization, and believe in learning by doing.

Building and scaling a startup.

Startups face several challenges such as hiring and managing a team, setting up a marketing team, dealing with customer needs. In particular, many Indian founders have a technical background and lack business knowledge. Many startups at an early stage are self-funded i.e. through the founder's own savings. Some startups have enough paying customers, so that they are or become self-sustaining through the revenue and profits they generate. Many startups look for investors.

List of Indian startups that have done really well.

- Unacademy

Unacademy is an Indian educational technology company, based in Bangalore.



Originally created as a YouTube channel in 2010 by Gaurav Munjal, the company was founded in 2015 by Gaurav Munjal along with Roman Saini, and Hemesh Singh. The company has a network of over 5,00,000 registered educators, and offers preparation material for several professional and educational entrance exams. Indian edtech Unacademy valued at \$3.44 billion in \$440 million fundraising as of 2021.

- CRED

Cred is an Indian fintech company, based in Bangalore, founded in 2018 by Kunal Shah. CRED app's main feature is reward-based credit card payments.



The company had onboarded over 5.9 million users and processed about 20% of all credit card bill payments in India. As of April 2021, CRED offered five distinct products - CRED RentPay, CRED Cash, CRED Pay, CRED Store and CRED Travel Store. However from August 20, 2021 Cred also launched a Peer to Peer (P2P) lending feature known as Cred Mint that aims to monetise through its 7.5 million users.

- Udaan

Former top Flipkart executives and friends Amod Malviya, Sujeet Kumar, and Vaibhav Gupta started business-to-business e-commerce start-up Udaan.



Udaan is a B2B trade platform that brings manufacturers, traders, retailers, and wholesalers into a single platform. The platform is about making business easy in India, about making B2B commerce convenient and efficient. They believe B2B is the new B2C in India.

Malviya, Kumar, and Gupta, who are all engineers from the country's top Indian Institute of Technology (IITs), hail from small towns in states of Uttar Pradesh and Bihar, where, growing up, they didn't have access to supermarkets, and had to travel to the nearest big city for large purchases. In just 5 years, under their leadership, Udaan has built the capacity for taking the small retailers in Bharat (tier-2 and tier-3 cities and rural India) into the digital ecosystem to benefit from the e-commerce scale. "This is a \$1 trillion market," said Sujeet Kumar, co-founder, Udaan, in an interview. "Our vision is that we would do transactions worth \$100 billion in the next 7-8 years."

- upGrad

upGrad, a Mumbai-based startup, is bringing the best out of the online education segment.



UpGrad is an online education startup that produces industry-relevant learning programs. UpGrad offers skills in digital marketing, data analytics, and product management.

Its free Entrepreneurship Program, begun in 2016 in partnership with the Indian government, has trained 500 people and helped launch 250 startups, which in turn created 400 jobs in fields like e-commerce, healthcare, event management, and professional services.

- **Razorpay**

Razorpay is an Indian startup that was founded in 2014 and is currently headquartered in Bangalore, India started by Mathur and Shashank Kumar.



Razorpay accepts, processes and disburses money online for small businesses and enterprises.

Some of Razorpay's clients include budget lodging decacorn Oyo, fintech firm Cred, social giant Facebook, e-commerce Flipkart, top food delivery startups Zomato and Swiggy, online learning platform Byju's, supply chain platform Zilingo, travel ticketing firms Yatra and Goibibo, and telecom giant Airtel. Razorpay's business model and product offering have been validated by the mammoth investment they have received. The company has received a total of \$366.6 Million from a group of 29 investors to further the growth of its startup. The company has also been active in the acquisitions market, having taken over Opfin and ThirdWatch in 2019. Razorpay has become one of the most exciting and rapidly growing example of the success of India startups.

- **Ola**

Ola was launched in December 2010 by two IIT Bombay graduates. The first Indian cab aggregator company, Ola has made availing cab services a smooth experience.



Owned by ANI Technologies Pvt. Ltd. and formerly known as OlaCabs. Instead of buying and renting out its own cars, Ola partners with a number of taxi drivers and owners and adds a touch of modern technology to the whole setup. This allows people to book cabs at a short notice through Ola's app.

In March 2015, Ola Cabs acquired Bengaluru-based taxi service TaxiForSure for approximately ₹12.37 billion (US\$160 million). June 2015 onwards, Ola users gained access to TFS cabs via the Ola mobile application. Later in the year in November, Ola further acquired Geotagg, a trip-planning applications company, for an undisclosed sum. In November 2014, Ola diversified to incorporate auto rickshaws on a trial basis in Bengaluru. After the trial phase, Ola Auto expanded to other cities like Delhi, Pune, Chennai and Hyderabad starting in December 2014. Ola spun off its electric vehicles business into a separate unit called Ola Electric Mobility with US\$56 million of funding capital in February 2019.

A BRIEF HISTORY OF DATA STORAGE DEVICES

- Siddhanth Das

Data has been stored on storage devices that have been of a large size since the invention of a computer. The first data storage device was made in the year 1947 at Manchester University .Core memory works by storing one bit of data on tiny magnetic rings, or cores. The more magnetic cores you pack into a core memory , the more data you can store on it. Core memory was the standard in computing from 1955 to 1975.

- 1947

Manchester Mark I Williams-Kilburn tube

At Manchester University, Freddie Williams and Tom Kilburn develop the Williams-Kilburn tube. The tube, tested in 1947, was the first high-speed, entirely electronic memory. It used a cathode ray tube (similar to an analog TV picture tube) to store bits as dots on the screen's surface. Each dot lasted a fraction of a second before fading so the information was constantly refreshed. Information was read by a metal pickup plate that would detect a change in electrical charge.



- 1949

EDSAC

Maurice Wilkes and his team at the University of Cambridge construct the Electronic Delay Storage Automatic Calculator (EDSAC). EDSAC, a stored program computer, used mercury delay line memory. Wilkes had attended the University of Pennsylvania's Moore School of Engineering summer sessions about the ENIAC in 1946 and shortly thereafter began work on the EDSAC.



- 1950

Magnetic drum memory



Eager to enhance America's codebreaking capabilities, the US Navy contracts with Engineering Research Associates (ERA) for a stored program computer. The result was Atlas, completed in 1950. Atlas used magnetic drum memory, which stored information on the outside of a rotating cylinder coated with ferromagnetic material and circled by read/write heads in fixed positions.

- 1951

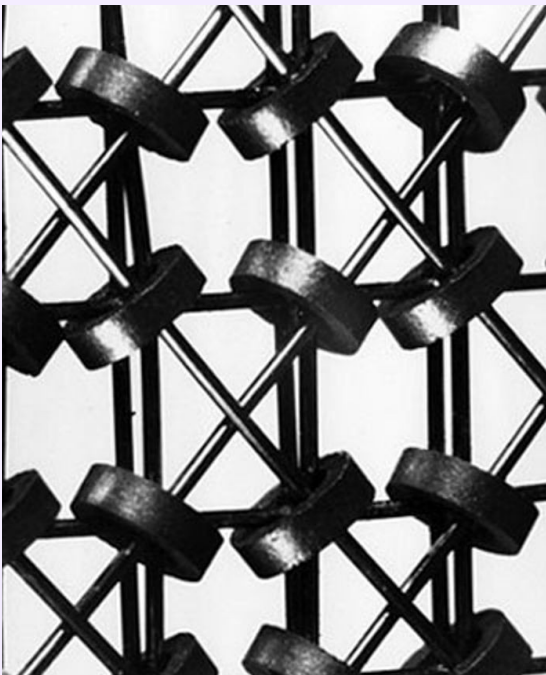
UNIVAC UNISERVO tape drive

UNIVAC introduces the "UNISERVO" tape drive for the UNIVAC I computer. It was the first tape storage device for a commercial computer, and the relative low cost, portability and unlimited offline capacity of magnetic tape made it very popular. UNIVAC tapes were ½" wide, 0.0015" thick, up to 1,500' long, and made of phosphor-bronze with a metallic coating. Weighing about three pounds, each reel could hold 1,440,000 decimal digits and could be read at 100 inches/sec.



- 1953

Whirlwind core memory



In 1953, MIT's Whirlwind becomes the first computer to use magnetic core memory. Core memory is made up of tiny "donuts" made of magnetic material strung on wires into a grid. Each core stored a bit, magnetized one way for a "zero," and the other way for a "one." The wires could both detect and change the state of a bit. Though several inventors were involved, it was MIT's Jay Forrester who perfected the technology. In 1971, the introduction of the Intel 1103 DRAM integrated circuit signaled the beginning of the end for magnetic core memory in computers.

- 1956

RAMAC

The era of magnetic disk storage dawns with IBM's shipment of a RAMAC 305 computer system to Zellerbach Paper in San Francisco. The computer was based on the new technology of the hard disk drive — the world's first. The RAMAC disk drive consisted of 50 magnetically coated metal platters capable of storing about 5 million characters of data. RAMAC allowed real-time random access to large amounts of data, unlike magnetic tape or punched cards. A working RAMAC hard disk assembly is demonstrated regularly at the Computer History Museum.



- 1959

Bryant Chucking Grinder Company magnetic disk drive

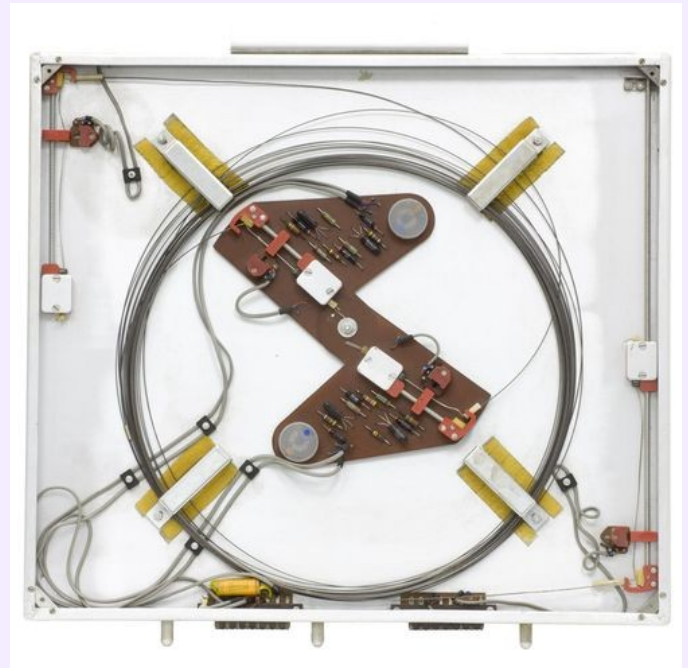


Bryant Chucking Grinder Company, a computer drum manufacturer, explores new storage ideas. They began developing a disk drive in 1959—made up of a horizontal shaft with eight or more 39-inch magnesium disks. Few sold.

- 1961

Magnetostrictive delay lines

The Ferranti Sirius is announced. The Sirius was a small, low-cost business computer using a simple programming language. Its main memory was a magnetostrictive delay line. The medium here was a thin strip of special metal rolled into a coil, with transducers at either end. Like all delay lines, bits were fed into one end, detected at the other, and continuously recirculated. Although this type of delay line was considered to be somewhat slow, its low cost made it attractive to computer designers.



- 1962

Atlas computer



The concept of virtual memory emerges from a team under the direction of Tom Kilburn at the University of Manchester on its Atlas computer. Virtual memory permitted a computer to use its storage capacity to switch rapidly among multiple programs or users and was a key requirement for timesharing.

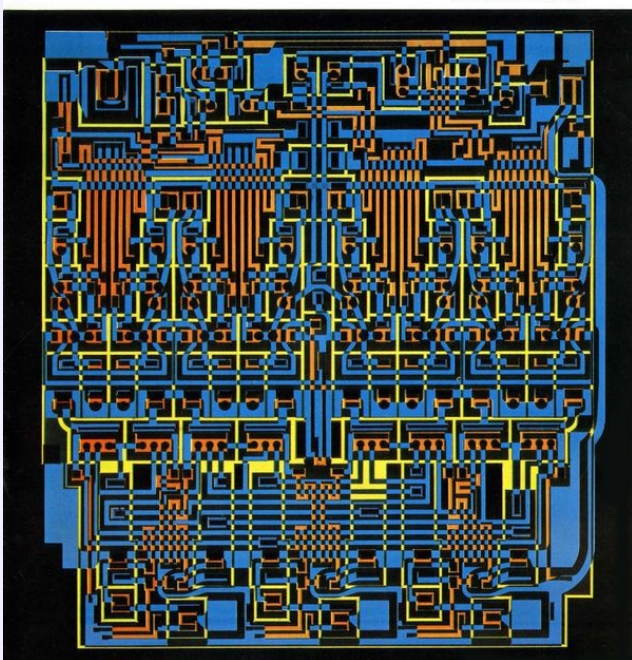
Card Random Access Memory (CRAM)

Card Random Access Memory (CRAM) is introduced. The NCR 315 and several later NCR mainframes used this mechanically complex magnetic CRAM for secondary storage. The mylar cards were suspended from rods that selected and dropped one at a time for processing. Each CRAM deck of 256 cards recorded about 5.5 MB.



- 1966

Signetics 8-bit RAM



The April 4, 1966 issue of Electronics magazine features an 8-bit RAM designed by Signetics for the SDS Sigma 7 mainframe computer. The article was titled, "Integrated scratch pads sire new generation of computers." This 8-bit RAM was one of the earliest uses of dedicated semiconductor memory devices in computer systems.

GREAT SCIENTISTS

Some superheroes don't wear capes. Scientists are one of them. Throughout history, they have contributed to our understanding of the world around us. In this puzzle, we have listed eight such great scientists whose inventions left an everlasting impact on our lives. The catch here is that you are provided with clues and it is your job to figure out who the scientist is. Try to find as many as you can!

CLUES FOR THE WORDS :

1. The first woman to win a Nobel Prize. She also discovered two elements.
2. Best known for his General and Special theory of relativity and the concept of mass-energy equivalence
3. The discovery of gravitational force
4. Discovery of Electromagnetic Induction and Discovery of Benzene
5. The discovery of electron
6. Developed the most effective treatment for leprosy during the early 20th century
7. The first woman to receive a Doctorate of Science from an Indian University
8. The first computer Programmer

N I E T S N I E T R E B L A Y
I O X K S J P X N M A C M S A
L Q T Y P M U O L D Q Y H I D
H L L W L M S V A B P N J M A
L P Z N E M B L U M T A N A R
Z J V U O N O V A K Q F I C A
J D F H R V C R T O S N F H F
Z O T N E J I A W I G T B A L
D J H L G E B A A N I U W T E
J F A C C N A M Z S G W K T A
P C X U Y Z S D F V I G Y E H
E E R A L I C E B A L L W R C
Z I C B G L A G V L J H S J I
E H X B C A N P S H Z H D E M
Y B Z Y C H R L L W I O B E Q

PAPER PUBLICATIONS

SR. NO	GUIDED BY	Project Title	Publication Name
1	Dr. S.B.Wankhade Prof. Nilesh Rathod	Improving Extreme Learning Machine Algorithm Through Optimization Techniques	Advanced Computing Technologies and Application Springer, Singapore, Feb 2020
2	Dr. Sunil B. Wankhade	Identification of Plant Diseases Using Machine Learning A Survey	Springer Nature Switzerland
3	Dr. Sunil B. Wankhade	A Study Of Electronics Health Record to unfold its Significance for modifying reforms	Nature Switzerland
4	Dr. Sunil B. Wankhade	Emotionally Intelligent Artificial Intelligent Virtual Companion	International Journal for Research in Engineering Application & Management
5	Dr. Sunil B. Wankhade Prof. Anushree Deshmukh	Deep Learning Technique for detecting Deepfake	International conference on Intelligence computing and networking
6	Prof. Shirish Sabnis Saurabh Patil Vivek Dwivedi Mehul Rawat	Currency Denomination and Detection using Image Processing	International Journal for Research and Analytical Review
7	Prof. Shirish Sabnis Prasad Gawas Mrunal Jamsandekar Prachi Meghani	Crop Recommendation System 2020	IJRAR March 2020

DEPARTMENTAL AND COMMITTEE ACTIVITIES

ABIT Valedictory Function
12 April 2019

ABIT Orientation for
Incoming SE students
23 July 2019

Talk on Resume Building
in association with IBS
29 July 2019

Overseas Education by Azent
Overseas for T.E students
31 July 2019

Know Your Department
for First Year Students
19 August 2019

Induction program for FE
Students by ABIT Committee
13, 14, 16 August 2019

Basics of OOP and Capabilities of the
Python Language Workshop
1, 2 August 2019

IOT Project Presentation Exhibition
in MCT's Sushiladevi Deshmukh
Vidyalaya, Airoli
30 November 2019

ABIT organized Industrial Visit
to RR Kabel and Parle Factory
in Silvassa
28, 29, 30 September 2019

Celebration of
Teacher's Day
5 September 2019

Ann. & Meeting of Super Junior
Core Members of ABIT & diss. of
Committee's plan for the AY.
2 September 2019

Webinar on IELTS/TOEFL/GRE
by Azent Overseas Education
Pvt. Ltd. 27 August 2019

Announcement and Meeting of
the Junior Core Members of ABIT
26 August 2019

Senior Core Committee for 2020- 21



Mr. Kuljot Singh
Treasurer



Mr. Harshad Barapatre
President



Mr. Siddhesh Salunke
General Secretary



Mr. Swapnil Jagtap
Vice-President



Mr. Vaishakh Shetty Mr. Manav Mishra
Marketing Secretary



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Ms. Ruchira Kadam Ms. Durga Ambekar
Event Management
Secretary



Mr. Devansh Nanani Mr. Ajay Padwal
Technical Secretary



Mr. Raheb Shaikh
Digital Creative
Secretary



Mr. Atif Hingwala



Ms. Durga
Ambekar

Sports Secretary

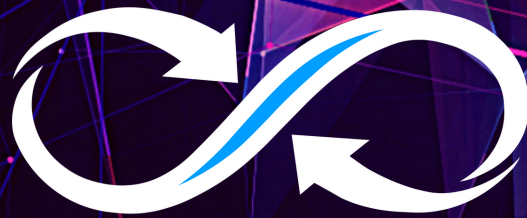


Mr. Suraj Gupta



Ms. Aaina Jain
Publicity & Editorial
Secretary

**THANK YOU
FOR READING**



ABIT

TALENTED MINDS
DILIGENT HEARTS

2020



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