



# Department of Computer Engineering

Government Polytechnic for Girls, Surat

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## TechTrends

E-Newsletter

**TOP  
TECHNOLOGY  
TRENDS FOR  
2020**



### Vision:

To empower girls of diploma computer engineering to excel in IT Industries and serve the society.

### Mission:

- To strive for academic excellence and professional competence among students and staff.
- To encourage innovative ideas among students to enhance their entrepreneurship skills.
- To provide high tech educational resources and supportive infrastructure.

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## Introduction

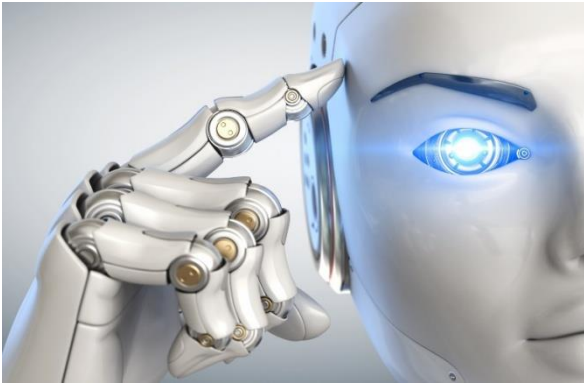
Technology is constantly updating at such a rapid pace that it seems it is might be faster than light! A technology or a programming language that is making the rounds this week may be obsolete by the next few days! As more and more funds are invested in research and development, computer scientists and professionals are constantly tweaking and improving existing technologies to get the most out of them. As a result, a new programming language, library, patch, or plug-in gets released almost every hour.

## Latest Technology Trends of 2020

Here are some of the latest trending technologies that are sure to dominate the IT industry in 2020 and the upcoming years –

### 1. Artificial Intelligence

Artificial intelligence (AI) is the technology used for equipping computer systems with the ability to make decisions like humans. Being one of the trending technologies, when AI programs are fed to systems, the aim is to mimic human intelligence for performing complex tasks such as pattern recognition, speech recognition, weather forecast and medical diagnosis.



AI is used in navigation based applications like Uber, voice assistants like Siri, video streaming services like Netflix, IoT devices and in search engines like Google and Bing. AI helps in automating tasks such as traffic, scheduling trains, making business predictions and designing driverless cars!

These are the features of AI that make it unique:

- Eliminate dull and boring tasks
- Data ingestion
- Imitates human cognition
- Futuristic
- Prevent natural disasters
- Facial Recognition and Chatbots

### 2. Data Science

Next up in the list of latest technology concepts is not surprisingly Data Science. Data Science is the technology



that helps to make sense of complicated data. You know that data is produced in a humungous amount every day by companies. This includes business data, sales data, customer profile information, server data, and financial figures.

Most of this data is in the form of huge data sets that are unstructured. The role of data scientists is to convert these



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unstructured data sets into structured datasets. Then, these data sets can be analyzed to identify patterns and trends.

## Applications of Data Science

### *Internet Search:*

Google search use Data science technology to search a specific result within a fraction of a second

### *Recommendation Systems:*

To create a recommendation system. Example, "suggested friends" on Facebook or suggested videos" on YouTube, everything is done with the help of Data Science.

### *Image & Speech Recognition:*

Speech recognizes system like Siri, Google assistant, Alexa runs on the technique of Data science. Moreover, Facebook recognizes your friend when you upload a photo with them, with the help of Data Science.

### *Gaming world:*

EA Sports, Sony, Nintendo, are using Data science technology. This enhances your gaming experience. Games are now developed using Machine Learning technique. It can update itself when you move to higher levels.

### *Online Price Comparison:*

Price Runner, Jungle, Shopzilla work on the Data science mechanism. Here, data is fetched from the relevant websites using APIs.

## 3. Internet of Things

The IoT (Internet of Things) is a network of devices that are connected to each other. Their devices can interact and share data with each other. These devices may be connected via WiFi, and they share data about their environments and how they are being used. These devices have a computer chip that facilitates this exchange.



It is predicted that more than **41 billion devices powered by IoT will be used by 2025.**

IoT not only enables the connection between different devices but also their remote access. For example, you lock doors of your car remotely; preheat your ovens and geysers. The FitBit that you use for tracking the number of calories you burn also runs on IoT technology. IoT chips embedded on machines help businesses to assess the performance of those machines and assist in their maintenance.

## The 9 most important applications of the Internet of Things (IoT)

- Wearables. ...
- Health. ...
- Traffic monitoring. ...
- Fleet management. ...
- Agriculture. ...
- Hospitality. ...
- Smart grid and energy saving. ...
- Water supply.

### 4. Blockchain

Blockchain is the foundational technology that powers electronic currencies such as Cryptocurrencies. In simple terms, a Blockchain is an electronic ledger that can be shared among different users. This helps in creating a record of transactions that cannot be altered. Each of these records is time-stamped and linked to the previous one.



So every time a new transaction is added to the ledger, it is stored as another block in the chain of transactions –hence the name. Blockchain is updated after the different parties contributing to the ledger agree.

After new data is fed into a block, it cannot be erased. This makes technology verifiable and secure.

This validation of transactions helps companies reduce their costs as no third party has to be paid. The system is very secure and there is no need for paying for centralized entities, as the technology is decentralized. Transactions are easier to track using Blockchain.

### 12 Prominent Blockchain Applications to Know

- Secure sharing of medical data.
- Music royalties tracking.
- Cross-border payments.
- Real-time IoT operating systems.
- Personal identity security.
- Anti-money laundering tracking system.
- Supply chain and logistics monitoring.
- Voting mechanism.

### 5. Robotic Process Automation (RPA)

Robotic Process Automation (RPA) is a technology used for automating daily tasks, similar to artificial intelligence. Here, the software is used for automating repetitive tasks such as handling and replying to emails, processing transactions, and handling business data. This technology is used for automating tasks for low-level employees to higher-ranking officials. RPA can automate more than 40% of daily tasks. According to McKinsey, more than 60% of all repetitive tasks can be partially automated using RPA. So, this technology is going to threaten a lot of jobs.

Here we list 5 important industry applications.

- 1) Retail. The retail industry involves lots of processes that are prime for automation with RPA.
- 2) Banking
- 3) Insurance
- 4) Councils and local authorities
- 5) Human resources

## 6. Virtual Reality

VR is the technology by which you can immerse yourself in an environment that seems astonishingly realistic. It is the use of computer technology for creating a simulated environment. It is very popular for playing computer games. Unlike traditional games where you experience the gaming environment by viewing it on the screen, you are directly placed in the environment!



Senses such as touch, hearing, smell, and vision are simulated in these environments. Using VR gear such as headsets, you can walk around and play the game in that 3D world. Augmented Reality (AR) is the technology used for improving this virtual environment.

The major players in this field are Facebook's Oculus Rift, Sony's PlayStation VR (PSVR), and the HTC Vive.

The VR technology is not only used for entertainment, but it is also used by the U.S. Navy and Coast Guard for training staff. They use a VR game called Virtual Ship. AR and VR are used by doctors while performing surgery. Visitors in an amusement park or a museum can also use the technology to enhance their experience.

### Exciting Uses for Virtual Reality

- VR in Military
- VR in Sport. ...
- VR in Mental Health. ...
- VR in Medical Training. ...
- VR in Education. ...
- VR in Fashion.

## 7. Edge Computing

Edge computing is the latest technology trend that is getting famous by the day. The technology is based on the philosophy of bringing computing power as close to the data source. This helps in reducing bandwidth and latency.

The technology aims to run fewer processes in the cloud and shifting those processes to locations such as the user's system or an edge server. Bridging this gap between the data and the computation reduces the long-distance communication between the server and the client, which in turn enhances the speed of the process. This is why

edge computing is used for handling time-sensitive data stored in remote locations that have limited connectivity to the central location. The technology will make cloud computing and IoT devices faster.

## Innovative Applications of Edge Computing

- Smart Cities
- Manufacturing
- Healthcare
- Augmented Reality Devices
- AI Virtual Assistant

## 8. Intelligent apps

Intelligent apps are software applications that make use of AI components such as machine learning, deep learning, data analytics, robotics, and natural language processing. They help you in making decisions based on real-time data or historical data. Examples of Intelligent apps are voice assistants such as Siri, Google Assistant, and Alexa. As companies such as Google, Apple, and Oracle continue investing in these applications.

### Prominent Sectors where Intelligent Apps can be Used

1. Healthcare Sector
2. Education Sector
3. Finance Sector

4. Food Businesses
5. Hospitality Sector

## Conclusion

Since digital presence is vital for businesses today, being aware of the latest software development trends is a must for clients as well as software development providers. These technologies have already entered various spheres of economy. For instance, the IoT is now actively used by governments and environmental services to track the consequences of global warming. If you want to move with the times and remain competitive in your field, you should know what is trending and how to use it for your benefit.

## References

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# QUIZ (17)

## Quiz : 1

- Q1. Look at this series: 12, 11, 13, 12, 14, 13, ..... What number should come next?
- A. 10      B. 16      C. 13      D. 15

## Quiz : 2

- Q2. Look at this series: 36, 34, 30, 28, 24, ..... What number should come next?
- A. 22      B. 26      C. 23      D. 20

## Answer of Last Quiz (16)

- Q. 1 Answer : C Explanation: Each term in the series is obtained by adding 1 to the square of the preceding term. So, missing term =  $(101)^2 + 1 = 10202$ .

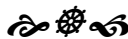
- Q. 2 Answer : I Explanation: Starting on the left, and moving downwards in columns from left to right, letters are written in alphabetical sequence, in steps of 4 letters at a time.

EFGHIJKLM

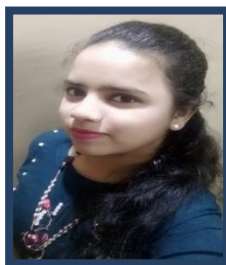
QRSTUVWXYZABCDEF

KLMNOPQRSTUVWXYZABCDEFGHI

- Q. 3 Answer : D Explanation: In each row, the second figure forms the innermost and the outermost elements of the third figure. Moreover, the first figure forms the middle element of the third figure.



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