

5G TECHNOLOGY

A stylized illustration of a cityscape with various buildings and a car on a road. The scene is overlaid with a large, light blue Wi-Fi signal icon. Several circular icons are connected to the city by dashed lines: a Wi-Fi signal, a globe, a location pin, and a camera. The overall theme is 5G technology and smart city applications.

An In-Depth Look Into

The Pros and Cons of 5G Technology



It's not long ago when 3rd generation of internet, known as 3G sparked new energies in digital devices. Communication modes became more sound and vigilant with the outburst of 3G at the beginning of this century. 3G was replaced with the fourth generation of internet (4G). Hundreds

and thousands of devices connected via 4G to reshaped the dynamics of technology. Innovative modes and features such as Artificial intelligence and Internet of things truly revolutionized the digital arena courtesy of 4G. Now it's time to think even faster as 5G is making its appearance feel with all the power and aggression necessary to meet the challenges of contemporary needs of Information Technology. Driverless cars, remote sensing devices, healthcare assistants, virtual reality and much more is expected to unveil in terms of tools and techniques with the onset and emergence of 5G. 5G works 100 times faster than 4G. With a speed of around 100 gigabytes per second and with reduced latency, the fifth-generation is ready to take and replace its competitors in 3G and 4G. 5G operates at higher frequencies and offers extra bandwidths with low latency but the coverage and connectivity issues ought to be addressed for more convenient performance.

Extra bandwidths, speedier connections, and low latency are some of the striking features of 5G technology. 5G internet has the ability to support much more connections than preceding networks; signals with high frequency and low latency will allow swift and smooth maneuvering of resources in adequate time. Self-driving cars can process all the information required to sustain in an affirmative, time-saving and durable mode. Robotic surgeries shall be managed and handled with a lot more authority from remote destinations. The fields of virtual reality and artificial intelligence will gain more grounds and shall come up with more promising outputs because of the ability of 5G to act as a cloud server, by bringing storage much closer to the device. A Chinese surgeon operated on an animal's heart from a location some 30 miles away from the source by controlling a robotic arm courtesy of 5G internet. Thanks to the comprehensiveness of the apparatus and the sustainability of signals, the operation was a great success. Higher bandwidths as evident with 5G technology would raise the cost of the equipment and infrastructure to sustain expected performance.

Smooth delivery of data to the digital devices may be hampered because of overcrowding of radio waves at higher frequencies. The penetration of 5G radio signals within the closed boundary units and infrastructures could be one of the biggest problems faced by this very latest version of internet technology. Additionally, collision with radio frequencies from other sources would slow down the data delivery mechanism to at least some extent. 5G network operates at frequencies in the range of 6MHZ, plenty of satellites and other signals operate within this range, so poor connectivity or weaker signals are expected especially within the closed installations, such as buildings and software houses. Secondly, as 5G promises to provide users with higher bandwidths, this would mean poor coverage with previously installed towers which were primarily intended for 3G and 4G. More cell towers would be required to handle and manage the higher bandwidths on offer with exclusive 5G packages.

5G technology has the ability to pierce the fields and break new grounds in the field of information technology, but the cost-effectiveness is yet to be established. 5G has its advantages and limitations, but over a period of time, its benefits will surpass its shortcomings. ■ Yasir Hayat

How API Helps Users Connect to the Apps?

According to the latest report, the average smartphone users spend

nearly 2 hours and 15 different apps. However, people who have the how their apps work, behind the working of access that interface. makes a firm connection



minutes per day on there are only a few basic knowledge of what interface is those apps and how to The interface which between users and the app is called the Application Programming Interface (API). API lets the billions of users connect with millions of apps by protecting their data to be overly-exposed to them (apps). Whenever users use an app like Facebook, Instagram or check the weather forecast of the day or book a ride through Uber, they access the app through the API.

The concept of API is as complex as an algorithm and also as simple as counting; it all depends on how well the user understands it. When users click on any app on their devices, the app automatically connects to the internet and sends the data to the server. Now it's the server's job to retrieve, interpret and makes the given data readable. The server turns the data into the right information that the user needs at the moment. The whole process happens through one interface which is the API. In other words, when a person goes to a restaurant he/she is given a menu from which he/she picks his/her desired items. The kitchen is the place where the desired items will be made after going through a proper channel.

Now, what's the connection between the person's act of deciding the desired items and the kitchen where the desired items will be prepared? It's the waiter or API (in case of the apps). The person is the user, the kitchen is the whole process including connecting to the internet and making the data readable via server and the waiter is the API.

The API not only behaves as an ultimate connection between users and the apps. Instead, it also provides the necessary security measures to users by securing personal data. When users click on any app and the app connects to the internet it gets the liability to access all of the users' information. However, to make sure that a specific app only uses the part of the users' information that is necessary for that app specifically, API comes in.

The API makes sure any app communicates with the small yet necessary packet of data. Continuing the above-mentioned example: the waiter makes sure to only give that information (about the desired items) to the kitchen that users want him to. For this property, the API has become very valuable that the technology giants like Google, Expedia, eBay, Amazon, Salesforce.com and others make money by taking ultimate help from the API. ■

Atiqa Nasir

Stop Annoying Video Recommendations

It is noticeable that when we open YouTube app then it often displays many video recommendations irrespective of the fact that a specific user never searched for the content. Thankfully, a new feature has been added in the app to let users to get more control over their videos from the Setting section and see personalized recommendations according to their preferences. To use the feature, you should have the latest version of YouTube. Open the app, scroll to the recommended video which you don't want to be on display, tap the three-dot option next to the video and select 'Don't recommend channel'. A popup with the statement 'We won't recommend videos from this channel to you again' will appear. You can also go for 'Not interested' option by clicking the three-dot icon again and it will ask two other things-Tell us why and Undo. Hit 'Tell us why' option and choose the option I don't like video. ■

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Wireless Charger



The bundle of wires around a charging port of mobiles seems a very messy thing. People usually think that is there any magic with which they would be able to charge their devices wirelessly? Apple first tried to make this dream real by making AirPower, a wireless charging mat. It was supposed to charge three devices at a time but it never came out as reality in front of the human eyes. Now, a Netherland-based company named as Zens disclosed its wireless power charging mat: Liberty. This mat consists of 16 charging coils placed on top of each other and this unique placement allows you to put your devices for charging anywhere on the mat without specification of places. Two devices can be charged at a time on Liberty and it is scheduled to be put on the display shelves in November. ■

Robo Cops

China is using technology for law enforcement and to police its population. Earlier, it had deployed facial recognition systems to deter jaywalkers and made highly trackable RFID tags mandatory in cars to check if a driver pays highway tolls or not. Now, three types of robots will assist human police officers to maintain order on Chinese roads. Each bot possesses a unique function and seems a little different from the others. A road patrol robot looks like a real traffic officer with a yellow uniform and white hat and it can identify and snap photos of suspicious drivers. The second kind is advice traffic robot which will be deployed in vehicle management stations to guide residents about the routes and automatically report the security risk to police, whereas an accident warning robot will serve to inform drivers of nearby vehicles about an accident. ■

Call with Google Assistant



Google Assistant is now becoming a part of life for many people. It is helping out people in their everyday tasks, including listening to the latest news, making a shopping list, and best of all, acting like a friend on your lonely days. Till now, Google Assistant was just able to receive text messages, read them aloud and help you send replies with messaging services Facebook Messenger, WhatsApp, Telegram and others. But now, you can also make calls by using Google Assistant. You may just say

"Hey Google, WhatsApp video John" and it will carry out your command. But, no time has been mentioned as to when this functionality will be offered around the globe. ■

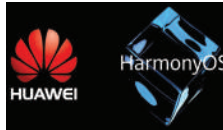
What's new in Google Books?



Google is publically testing three new experimental Google Books features on the web which are still under development. Custom Shelves offer users to organize their books into shelves using specific labels whereas the 'Ready to Read' option contains the shelf with books that a user didn't finish yet. Finally, there is Searching/Sorting feature to let a user find books in the library by their author, title and price. The experimental features are available in few countries and can be opted by visiting play.google.com/books. ■

HarmonyOS

Huawei's alternative to Android, "HarmonyOS" has been launched on Huawei Developer Conference (HDC). The software is initially designed to work across IoT devices instead of smartphones and is faster and safer than Android. HarmonyOS will be open source, which means that developers will be able to modify HarmonyOS for their hardware. The operating system will first arrive at smart TVs at the end of this year and will move to car infotainment systems and other smart devices in the coming years. ■



Recover Deleted Emails



There is hardly anything worse than deleting something important on Gmail. The issue is more prevalent on mobile devices where every function can be readily done at a swipe or a touch. Luckily, Gmail has a solution to recover your deleted emails. Sign in to your Gmail account, move to Inbox, click on the trash folder on the left side panel, select the email you want to recover, right-click and choose 'Move to Inbox' option. It will be restored into the inbox. However, the trash folder keeps the deleted emails for 30 days. In order to recover permanently lost/ deleted emails, you have to contact the official Gmail support team. ■

Quick Facts

• **Google Maps** in Android Auto revamped with alternate routes, search, locations, and menu buttons.

- Huawei's **Mate 30** will be released on September 19th.
- Google's **Android 10** is now available on Pixel phones.
- **YouTube** has tightened the rules of the community translation system to control trolls.
- **Xiaomi** has announced Redmi Note 8 Pro with a 64-megapixel sensor.
- **LG** has rolled out a new ThinQ app to control home appliances through voice.
- **Mozilla** has launched Firefox 69 along with the ability to block cookies, auto-play videos and crypto-mining tracking.
- The fingerprint authentication feature is being tested in the latest **WhatsApp** beta.
- **Microsoft Outlook** is getting dark mode support on iOS and Android.
- **Gmail** users can keep images from loading automatically on the iPhone app.
- **Sony** revealed new A6600 and A6100 mirrorless cameras.
- **Telegram** is bringing its cryptocurrency, the Gram, in the next two months.
- **Google** and **Dell** have been working together to dominate over Microsoft with Chromebook Enterprise laptops.
- Chinese search giant **Baidu** overtakes Google in the worldwide smart speaker market in the second quarter of 2019.
- **Toyota** is going to deploy electric vehicles for the 2020 Olympic Games.
- Violent and mature themes videos, those appeal kids, will no longer be allowed on **YouTube**.
- A lawsuit has been filed against **Amazon's Audible** for its controversial speech-to-text feature which the literary industry says is a violation of copyright law.
- Google has delayed the shutdown of **Hangouts** for G Suite users till next year
- Twitter's Emoji **Mashup Bot** has been released as free iMessage stickers.
- **Nvidia** will soon expand GeForce Now cloud gaming service to Android devices.
- **Google Duo's** latest low-light mode has made nighttime chats a lot easier.
- Three biggest Chinese smartphone makers, **Xiaomi, Oppo,** and **Vivo** collaborated to work on the AirDrop-style file transfer system between their respective devices.
- **Apple** sues Corellium Company for creating a virtual iPhone replica.
- **Huawei** is reportedly developing its own mapping service to challenge Google Maps.
- Microsoft's new **SMS Organizer** app is designed to filter out unwanted spam messages on Android.
- **Google Assistant** will soon offer users to assign reminders to their friends and family members.
- New **Chrome OS 76** supports virtual desktops. ■

5 Impressive Features of Huawei Mate 20 X 5G



The smartphone war is at its climax right now with every smartphone manufacturer giving their best shot to grab the attention of the world towards their impressive smartphones. Trending features continue to change with the passage of time and this time is for the displays and cameras. Huawei has presented Mate 20 X 5G best for the entertainment bingers and the ambitious gamers. 5G is the biggest aim of all the tech giants including Samsung, Huawei and OnePlus. Here are the five biggest features of this impressive phone:

1. Three lens back camera

A stunning triple back camera setup is present which consists of a 40 MP main lens, an 8MP telephoto lens, a 20MP ultra-wide lens. A number of artificial intelligence features are there to help people capture amazing photos in all sorts of situations. The 5x zoom improves the general image quality and the Night mode makes the images wonderful in low-light conditions.

2. Huge screen

The phone is a two-hander phablet with a 7.2-inch OLED display that is totally immersive and wonderful for gaming. The photography loving people can use this phone for capturing much better images that have a viewfinder screen which makes it much easier to frame shots.

3. Functionality for M-pen

The Huawei Mate 20 X 5G is coming with a stylus that it calls M-pen. This pen has a special button to launch apps and to capture screenshots and can be very useful for working people. It doesn't come in the box, but can be purchased separately.

4. SuperCharge Technology

This phone is coming with a 4,500 mAh battery and the lower battery capacity is much compensated with Huawei's SuperCharge feature. It is a 40W version, meaning that you can charge for the whole day in just a few minutes.

5. Latest Cooling Technology

The gaming people may be concerned about the heating up issue, but they should not be worried as Huawei is offering the latest SuperCool technology that solves this issue. The mechanism has a new cooling solution consisting of graphene heat pipes and a vapour chamber and that keeps the device cool even while playing games or streaming 4K videos.

So, these impressive features are ideal for people of all fields and these make it prominent among the heaps of smartphones offered each month. ■

Maleeha Haris

Track a Lost Email

Sometimes, it is hard to locate an old email in a mess of your Gmail inbox, especially when you don't have time to go through all emails and it is also urgent too. However, there are many search parameters in Gmail to track down your long-lost email. To locate all the emails from a specific sender just type the name or email address of the sender in the search bar like: from:John. If you have sent a lot of emails and wanted to locate a specific email to someone then write to: in the search bar, followed by the recipient name or email.

If you are not sure who sent you the email you are searching for, then search the emails from two different people by using OR in the middle like: from:John OR from:sara. You can also search for an email by typing a specific subject line or an exact phrase in the search bar, for example: subject:meeting or "meeting on Tuesday." To track an email with specific

attachment, type filename: before the type of file in the search bar, like filename:pdf. If none of the above-mentioned tricks worked, then you can search an email by adding a specific time period, for example: before:2019/08/30 or after:2019/06/30. ■

Developing ChatBots 101

SkyLite Networks organized an exciting event on the development of ChatBots using Microsoft Azure and Google Dialogflow with the aim to help the audience explore the potential of technology. Expert computer programmer Afzaal Ahmad Zeeshan and C# Corner MVP Mehreen Tahir graced the event with their presence and shared factual knowledge about the pros and cons of chatbots, its potential for business and overview of Google Dialogflow and Microsoft Azure chatBot tools. Fireside Chat was a mainstay of the concluding session. ■



Sneak Peek

Coming up in October issue

- IFA 2019
- Top Features of Android 10
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