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iHORE

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Ishare

Editorial

We would like to wholeheartedly thank our honorable Chairman, Secretary, Executive Director and Principal for their continuous encouragement and constant support for bringing out the magazine. We profoundly thank our Head of the Department for encouraging and motivating us to lead the magazine a successful one right from the beginning. Ishare serves as a platform for updating and enhancing upcoming technologies in Information and Communication. We are grateful to all the contributors to this magazine so far. The magazine has been sent to almost 60 Institutions in and around Tamilnadu. So far we have received feedbacks and appreciations from various Institutions.

We would be very pleased to receive your feedbacks. Please send your feedbacks to ishare@ksrcas.edu

By,

Editorial Board

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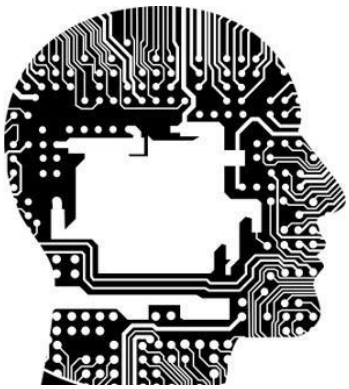
AI Terms Need To Know



Suddenly, Artificial Intelligence (AI) is everywhere. For decades, the dream of creating machines that can think and learn like humans seemed like it would be perpetually out of reach, but now artificial intelligence is embedded in the phones we carry everywhere, the websites we use every day and, in some cases, even in the appliances we use around our homes.

The market researchers at IDC have predicted that companies will spend $12.5 billion on cognitive and AI systems in 2017, 59.3% more than they spent last year. And by 2020, total AI revenues could top $46 billion.

Artificial Intelligence

In the simplest terms, an Artificial Intelligence is a machine that can think the way people think.

From the earliest days of computing, machines have been good at performing logical tasks like solving simple math problems. However, other tasks, like carrying on a conversation, identifying whether the animal in picture is a dog or cat, or recognizing whether a person is happy or sad, are much more difficult for computers.

Machine Learning

Machine learning is a subset of the larger artificial intelligence category. Going back to the proposal from that first artificial intelligence workshop, machine learning is the part of artificial intelligence that focuses on giving computers the ability to "improve themselves" over time as a result of experience. An early computer scientist named Arthur Samuel explained that machine learning enables computers "to learn without being explicitly programmed," and his machine learning definition is frequently quoted.

Computer scientists have come up with a lot of different ways to help computers to learn. For example, they might use supervised or unsupervised learning algorithms to help machines get better at performing tasks over time. Today, we encounter

machine learning every time we see a recommendation engine like the ones at Amazon or Netflix that suggest products we might like to buy or movies we might like to watch. Machine learning has also become an important part of big data analytics tools used by enterprises.

Deep Learning

Just like machine learning is a subset of artificial intelligence, deep learning is a subset of machine learning. Deep learning systems ingest large quantities of data and generalize categories and features related to that data through supervised or unsupervised learning.

To understand how this works, consider the problem of teaching a computer to distinguish pictures of cats from pictures of dogs. Programmers could try to come up with a set of rules that explains exactly what a cat is and exactly what a dog is, but even though humans can easily distinguish a cat from a dog, it's really hard to explain that difference using algorithms that a computer can understand. However, a deep learning system can analyze a whole bunch of pictures of animals and come to its own generalizations about what distinguishes a cat from a dog.

Cognitive Computing

Most of us have seen so many apocalyptic science fiction movies that feature frightening uses of artificial intelligence that the term AI has acquired some negative connotations. To get around that bad impression, marketing teams sometimes use the phrase "cognitive computing" to describe products with AI capabilities. IBM, in particular, likes to use the phrase in reference to its Watson platform. The term cognitive computing doesn't really have an agreed-upon scientific definition; it's just a prettier way to say "artificial intelligence."

Neural Network

Neural networks go by lots of different names: artificial neural network, neural net, deep neural net and other similar terms. All those phrases describe the same thing — a computer system inspired by living brains.

At that 1956 workshop where scientists first discussed artificial intelligence at length, the attendees thought that "every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made

to simulate it." In fact, they thought it would be so easy to create a machine model of a human brain that it would take 10 scientists just two months to accomplish it.

That timeline was more than a little unrealistic, considering that researchers are still working on creating computer brains that function like human brains. However, over the years, computer scientists have made a lot of progress toward that goal. Today, neural networks, using nodes that are roughly analogous to biological neurons, perform many tasks related to computer vision, speech recognition, board game strategy and more.

Supervised and Unsupervised Learning

Within machine learning and deep learning, there are several possible approaches to teaching computers. Two of the most common are supervised and unsupervised learning.

With supervised learning, the computer has a "teacher," a human being (or several human beings) that provides examples.

In the cat-dog identification example we have been using, supervised learning would require a person to label a bunch of

pictures as either cats or dogs. The computer would then learn from those sample inputs and outputs.

In unsupervised learning, the computer doesn't have any sample data. Instead, the system is asked to find patterns in the data on its own. This technique is useful when looking for hidden insights in big data.

Algorithm

The dictionary definition for an algorithm is "a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer." When we talk about algorithms for AI and machine learning, we're talking about the same kinds of processes — just a lot more complex. For example, Google uses an algorithm (a process based on rules) to determine which websites appear at the top of its search results. In machine learning, systems use many different types of algorithms in order to achieve desired results. Common examples include decision trees, clustering algorithms, classification algorithms or regression algorithms.

Chatbot

Also called a bot or an interactive agent, a chatbot is an artificial intelligence system that uses natural language processing capabilities to carry on a conversation. Today, the most recognizable examples of chatbots are Apple's Siri, Microsoft's Cortana and Amazon's Alexa. However, many different organizations are investing in chatbot technology, and many websites now feature chatbots that can answer technical support questions, help guide customers through a sales process or interact with customers in other ways.

Natural Language Processing

Natural language processing is an area of artificial intelligence related to understanding and generating speech the way humans usually use it. Computers have always been able to understand programming languages, but understanding regular English or Chinese is much more complicated.

You have probably experienced the evolution of natural language processing with your own use of search engines. In the

early days of the Internet, users typed Boolean operators to help them search for keywords.

Today, search engines have much better natural language processing capabilities, so you can just type "What is artificial intelligence?" to get a definition, as well as links to resources.

Predictive Analytics

Today, nearly all companies are running analytics on their big data. Predictive analytics is a particular type of analytics that seeks to tell users what's going to happen next. For example, you might feed a predictive analytics system 10 years of sales data from your company and then ask it to forecast your sales for next quarter given the current trends.

Today's predictive analytics systems usually incorporate data mining and machine learning capabilities, and often can viewed as a step toward artificial intelligence. They rely on algorithms to help them process data and determine likely future events.

Augmented Reality

Augmented reality, to be sure, has enjoyed its far share of hype – and emerging technology thrives on hype. Problem is not every nascent technology can match its hype. The landscape is littered with spectacular failures like Microsoft Zune, Nokia N-Gage and the hoverboard.

Virtual reality, with all of its hype, is facing some big challenges. After the hype and launches, virtual reality headsets have seen mixed reports and the amount of software releases has slowed. However, augmented reality is gaining ground. It's finding its place, only not where you would immediately think. That's why according to an IDC study, the augmented reality market will grow from $209 million in 2016 to $49 billion by 2021.

Augmented reality is different from virtual reality in several ways. For starters, you can see the world around you. One of the problems with VR is you wear a headset that

completely blocks your view and you could end up falling on your face.

AR, instead, lays over a small computer graphic over your field of vision. Your real world view is augmented by computer imagery for a specific purpose. So you don't run the risk of serious injury because you can't see where you are going.

Augmented Reality and 'Real Life Manuals'

Augmented reality has found a solid home in areas like training and repair, where graphics are overlaid on a real life item.

It's become a popular concept in repairs. Boeing uses it in engine repair, putting guidance for the technician over the parts of the engine to be fixed. Lockheed Martin uses it in building and manufacturing of satellites and space vehicles. GE uses it for repair technicians working on wind turbines.

"The money is in the verticals right now," said Tim Bajarin, President of the market research firm Creative Strategies. "Vertical markets are willing to pay for it. That's typical of the software industry. They go where the money is

first and tinker around with broader opportunities for consumers until they find something consumers will pay for. But verticals are where the money is first."

Rob Enderle, Principal Analyst for The Enderle Group, adds that the industrial sector is willing to pay the money that a quality headset demands. "The industrial sector will pay good money for a good piece of hardware, whereas the consumer sector is limited for a budget under $500. With the industrial crowd you could sell them $5,000 products and they don't flinch."

And that's only the beginning, predicts Bajarin. "There is an incredible opportunity for people to understand the selling points of real estate, vacations, and tourism. I just think there's a lot there and we're at the earliest stages of it. I don't think we understand the ramifications AR will have on the user interface for a while," he said.

Enderle said the VR projects, from Oculus Rift on down the line, all focused on being as cheap as possible, and there was no way to make it both cheap and good. "They should start high and work their way down. Apple didn't bring the iPod out at

$75, it brought out the iPod at $500 and worked their way down," he said.

Google Almost Blows Augmented Reality

One of the first attempts at augmented reality was Google Glass, and it almost killed the whole idea. Glass was a set of glasses with a front facing camera to see what the user saw as well as displays to show information to the wearer.

From the start, Google botched the effort. It made beta testers pay $1,500 for the headsets when typically beta products are supposed to be free. The quality of the software was poor and the Glass itself was considered ugly and unstylish.

Worse, Glass wearers suddenly became villains. People feared being recorded by Glass wearers. Bars in San Francisco and elsewhere banned people from wearing them in the establishment. People were getting beat up for wearing them. Glass wearers were called "Glassholes." It was a rejection of a technology not seen in years.

"They didn't focus on making a great experience and reducing the expense. They almost killed AR thanks to Glass.

People still have a negative experience because of Google Glass," said Enderle.

Earlier this year, Google announced a second generation of Glass, with a significant performance and battery upgrade, redesigned to look more stylish and aimed at enterprise users, particularly factory workers where AR is useful in offering information overlays to whatever they are working on. It's finding a home in places like Boeing, GE and DHL.

Next Step in AR

Bajarin believes that the first phase of AR will be delivered through smartphones or tablets but for that to take off needs googles or glasses and we're five years away from that. "We want to get to AR headsets to use consistently, and you need a visual pass through where you get the video image put in front of you. You want it to be as seamless of an experience as possible. We are within five years to deliver glasses for AR," he said.

Enderle thinks AR needs a killer app to achieve mass market, and time. Building the apps for something like airplane

engine repair means putting in the data on all the parts of an engine. And then they need the data for the different kinds of engines airlines use (GE, Rolls Royce, etc).

"It's much like Watson was with IBM. They build it but someone has to train it and the training takes time. AR is in that phase. We have viable hardware solutions and viable software solutions but now we need the data models. The data models are the gating factor," he said.

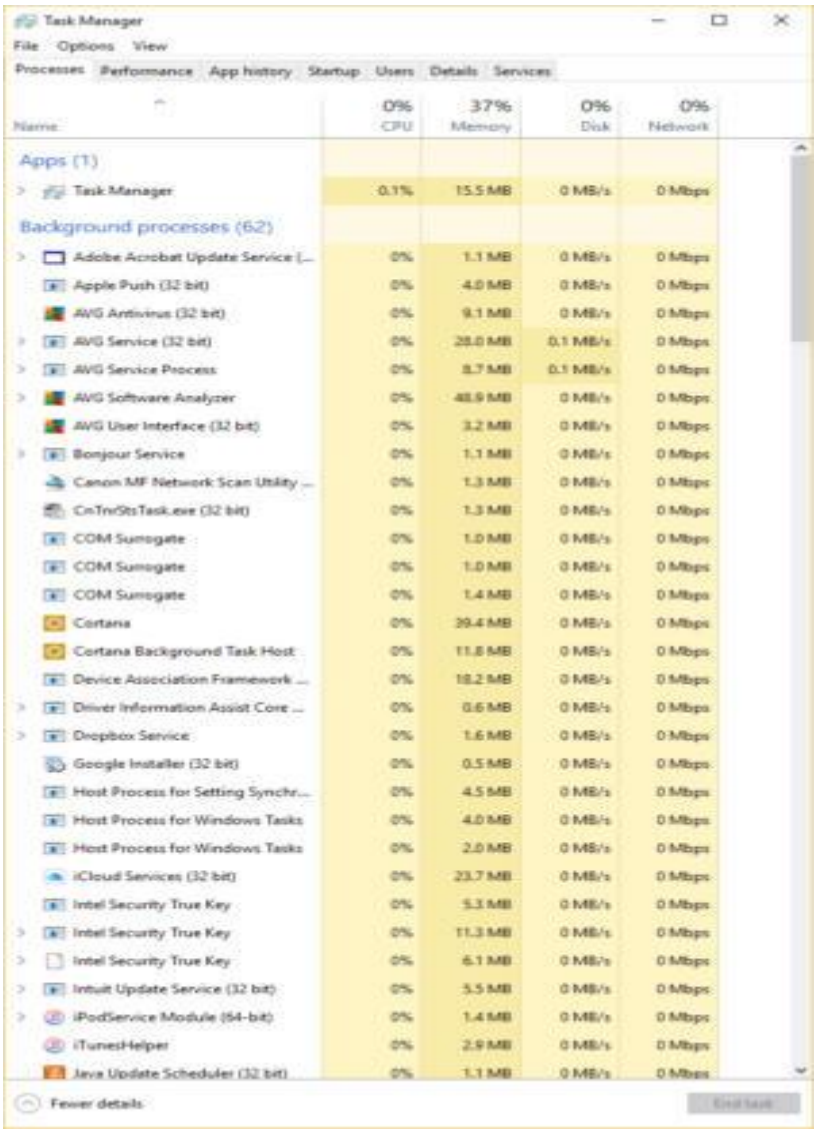
And on the consumer side? Both agree that Pokemon Go was a really good example of AR for consumers but there needs to be more like that. And it can't be limited to smartphones, it needs the headsets. So the quest for a quality, affordable headset continues.

How to Test your Home Internet Connection Speed

Testing your internet connection's performance is a straightforward exercise. You don't need any extra software—all you need is a computer with a web browser. But there are also a few things you can do to make sure you are getting the most accurate reading of your internet connection. Here's what to do.

Get ready

For best results, you want to use a wired connection if at all possible; that way, you don't have to worry about interference and performance fluctuations that can occur while you're on Wi-Fi. If you have any other wired devices on your home network, plug your test computer directly into the modem so those don't interfere in your testing.



Click the Network column in Windows Task Manager to see which apps, if any, are sending/receiving data on your network.

If you're stuck using Wi-Fi—say, you have a MacBook Air or a tablet or some other device that doesn't have an Ethernet port—do what you can to minimize interference. Make sure your Wi-Fi router is away from other electronic devices like cordless phones, and temporarily disconnect any other devices from your Wi-Fi network—after all, you don't want another computer on your network to download a gigabyte worth of software updates while you run your tests.

While you're at it, double-check to make sure your computer isn't downloading something in the background. Check the Task Manager on Windows (summoned by pressing control-alt-delete) or Activity Monitor on MacOS, and look for network statistics (it's labelled "Network"onMacOS, "Networking" on Windows).

Close or quit all apps on your computer to keep apps from downloading software updates while you test your connection. Your bandwidth usage may not drop to zero and stay there, but you want it as close to zero as it'll get. If your operating system

is downloading updates, there isn't much you can do aside from wait and test your connection later.

If you're having any problems with your connection, now is a good idea to reset your modem and router. Switch them off and unplug them for a few moments, then plug them back in and switch them on.

Test your connection

Ookla'sSpeedtest.net is the most common site to test your internet connection; all you need is a web browser with JavaScript turned on (it usually is unless you switched it off) and Adobe Flash installed. There are a couple of alternatives if you don't have Flash installed (and don't *want* it installed). There's an HTML 5 version of Ookla's Speedtest.net, or you can use Speedof.me, which also uses HTML 5.

HTML 5-based bandwidth graph that doesn't rely on Adobe Flash.

All you have to do at this point is click the green "Begin Test" button, and Speedtest.net will check both your download and upload speed. This may take anywhere from a few seconds to a few minutes, depending on your network speed.

Those aren't your only options for testing your broadband connection; MegaPath also offers a speed test, as well as what it calls Speed Test Plus, which evaluates the quality of your connection in addition to its raw speed. Your ISP might also offer a speed test tool, though you may need to do a little poking around for it. And router manufacturers are increasingly including speed tests in their products' firmware and/or the mobile apps they distribute with their products (although in that latter case, you'll be using a wireless connection).

Isolate the problem

Many router manufacturers include broadband speed-test utilities in the router's firmware and/or in the mobile apps that ship alongside them.

Don’t be surprised if you’re not getting the top speed your ISP says it can deliver—almost no one does. But if your connection is significantly slower than what was promised, many different factors could be coming into play. There might be a problem with your equipment, or it could be an issue on your ISP’s end. Most ISPs maintain a tech-support page where you can go to see if they're aware of any problems with their

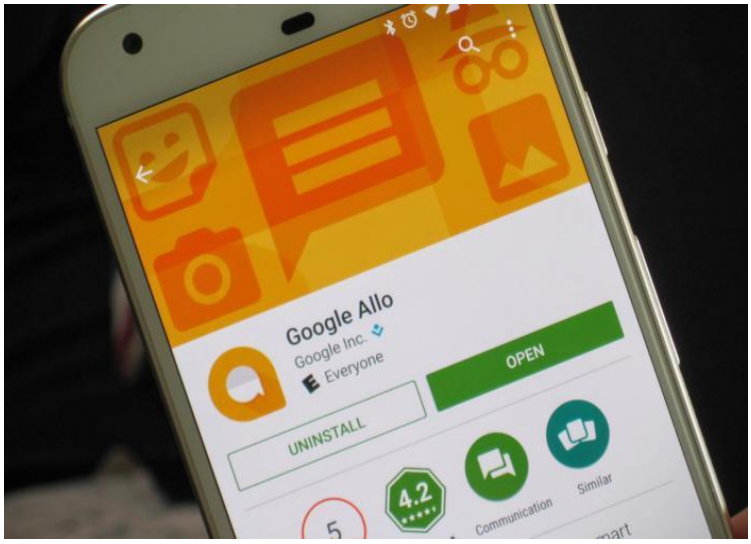
service. This link will take you to the location of AT&T's DSL troubleshooter.

If your ISP isn't reporting a problem, you can start your own troubleshooting by eliminating your equipment as a factor. First try using a different computer. If you get acceptable performance on the second machine, you can't blame the ISP. If the second computer *also* has a slow internet connection, run another bandwidth test after each of these suggestions: Try using a different Ethernet cable to connect your PC to your router. Try swapping out the cable that connects your router to your internet gateway (your DSL, fiber, or cable modem).

Troubleshoot your router: Turn it off or unplug it for a minute or two and then turn it back on. You should always be running the latest firmware on your router, so this is a good time to update it if you haven't lately. If you're still not seeing an improvement, try power-cycling your DSL, cable, or fiber modem.

If you've jumped through all of those hoops, and you're still have performance issues, it's time to call your ISP's tech-support line.

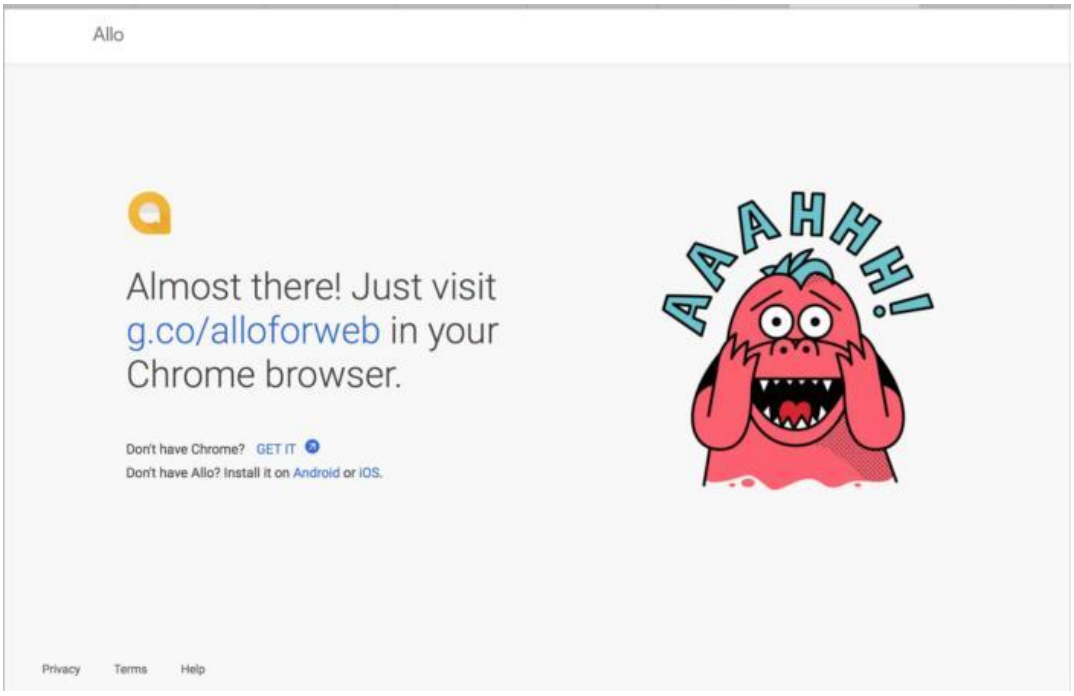
Google Allo



Google's scattershot messaging strategy has one less problem. Starting today, Android users can log in to Allo on the web to see and send messages, but it probably won't make the chat platform more popular.

For one, there are a lot restrictions. You'll need an Android phone. It only works through the Chrome browser. You'll have to get the latest version of Allo (16.0.024) before you can link your account. And the biggest one of all: Your phone will need to be online *and* running the Allo app for the web interface to

connect. In other words, it'll be quicker in most cases to just use your phone.



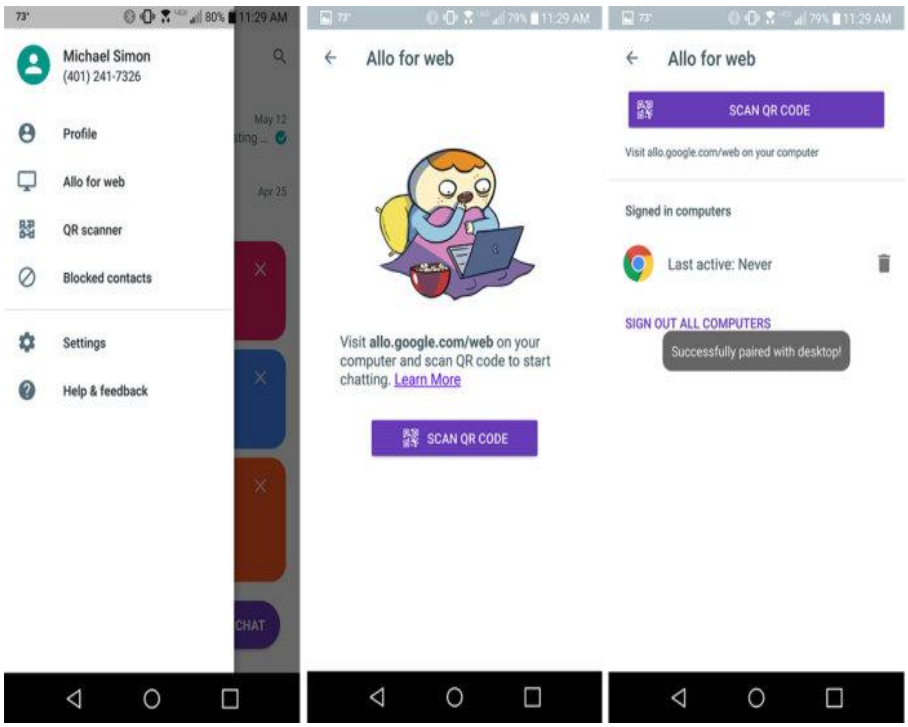
If you try to use Allo on a browser that isn't Chrome, a monster will show you the way.

Why this matters: Well, we're not really sure it does. While the idea of an Allo web interface sounds exciting in theory, in reality it's just another Google messaging platform to ignore. Allo never took off the way Google hoped it would, and an extremely limited web app that requires phone tethering is unlikely to get new people to use it. Until Google offers proper

SMS in Allo, the app will continue to wither in the Play Store, with or without a web interface.

Allo again

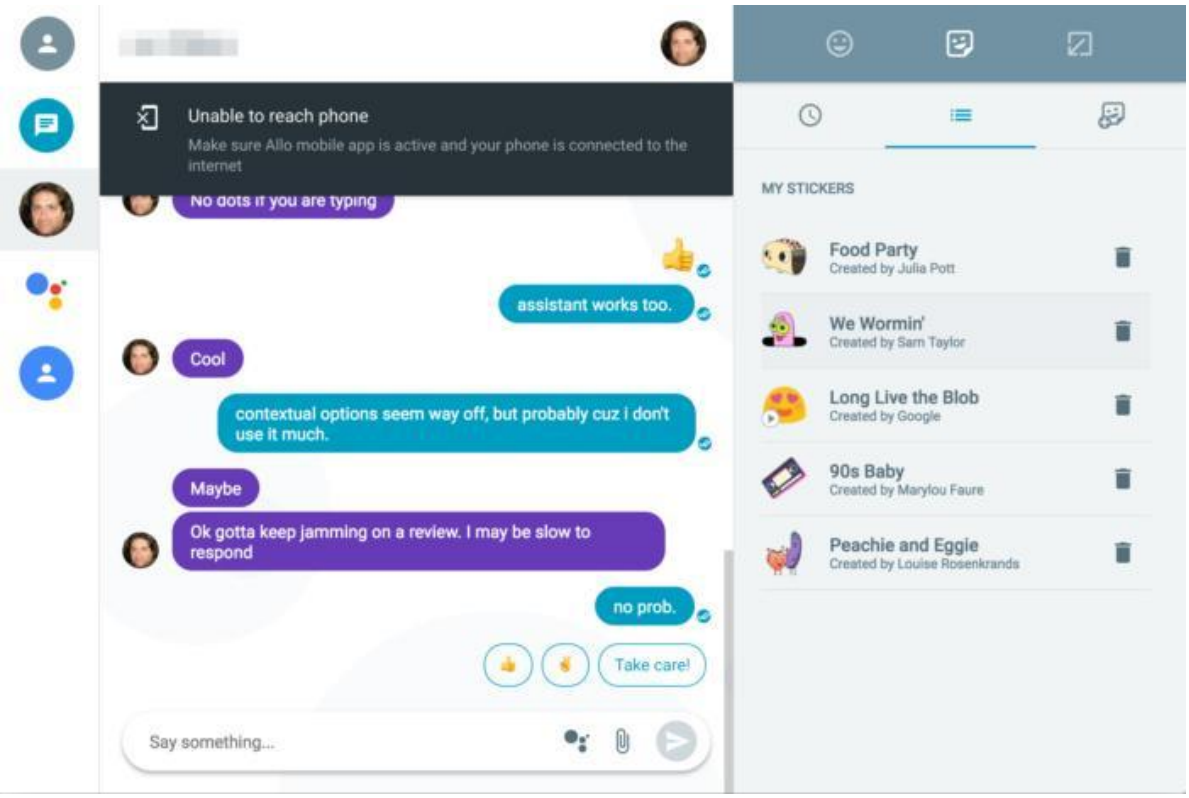
Criticism aside, the Allo web interface is a pleasure to use. To get started, visit Allo for web in your Chome browser, where you'll be greeted with a QR code. Then, open the app on your phone, tap the side menu button, and select Allo for web. (If you don't see it you're probably running an older version.) It'll switch to a viewfinder so you can scan the QR code on your computer screen, which will link your PC and your phone.



Allo for the web is a breeze to set up, but you'll need your phone.

And that's pretty much it. All of your conversations will be pulled over (assuming you have Google Drive backups turned on), and you'll be able to quickly continue a conversation or start a new one. Nearly every Allo feature is supported, including group chats, incognito conversations, stickers, and, most importantly, Google Assistant.

The Allo web interface is just as easy to navigate as the mobile one, with a sidebar of your conversations and a collapsible list of your sticker packs. You can summon Assistant into conversations by clicking the button in the conversation bar and attach files, but there's no way to access the camera, so you won't be able to make selfie stickers. Additionally, you lose out on one of Allo's best features, an iMessage-style animation that indicates the other person in your conversation is typing.



Allo's web interface looks as good as it does on the Android app.

If the latest version of Allo hasn't appeared on your phone yet, you can side-load the Google-signed APK from APKMirror.

Quick Removal of USB Devices

The proper way to remove USB devices in Windows is to use the Safe Removal option, but it can be a pain. If you have

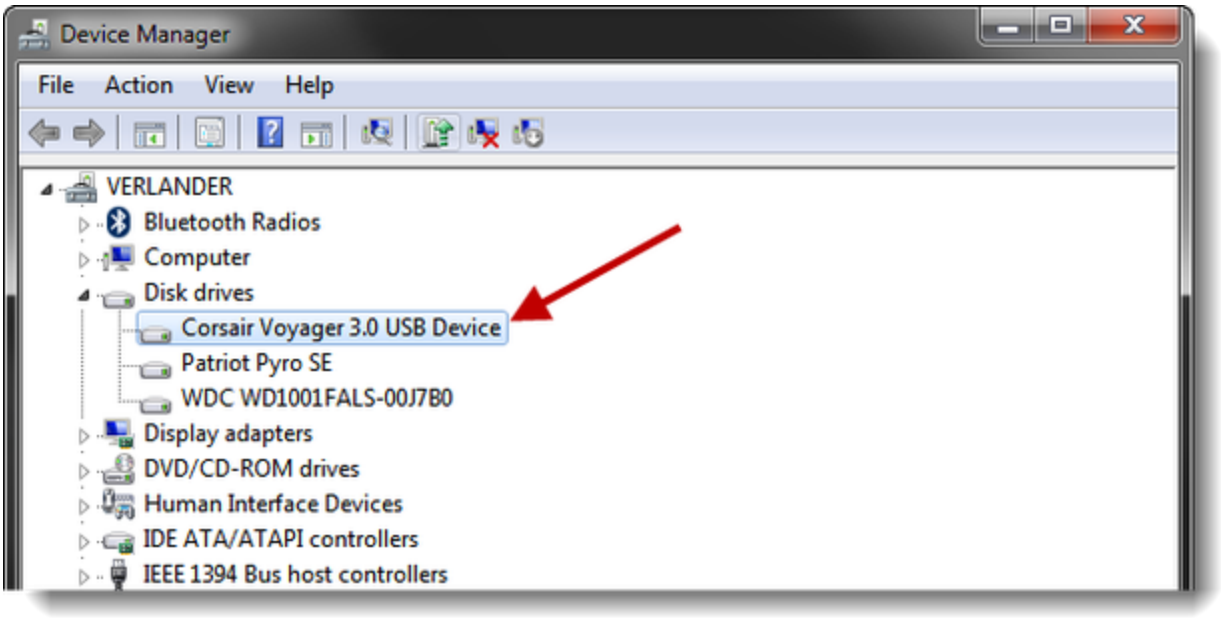
the quick removal policy set for your USB device, you can safely remove it without using Safe Removal.

USB devices can be hot-swapped, but their convenience is hindered by their need to be removed safely by using the Windows Safe Removal option. There's a policy for each USB device, however, that allows you to set them for quick removal, at the expense of a very minor performance hit.

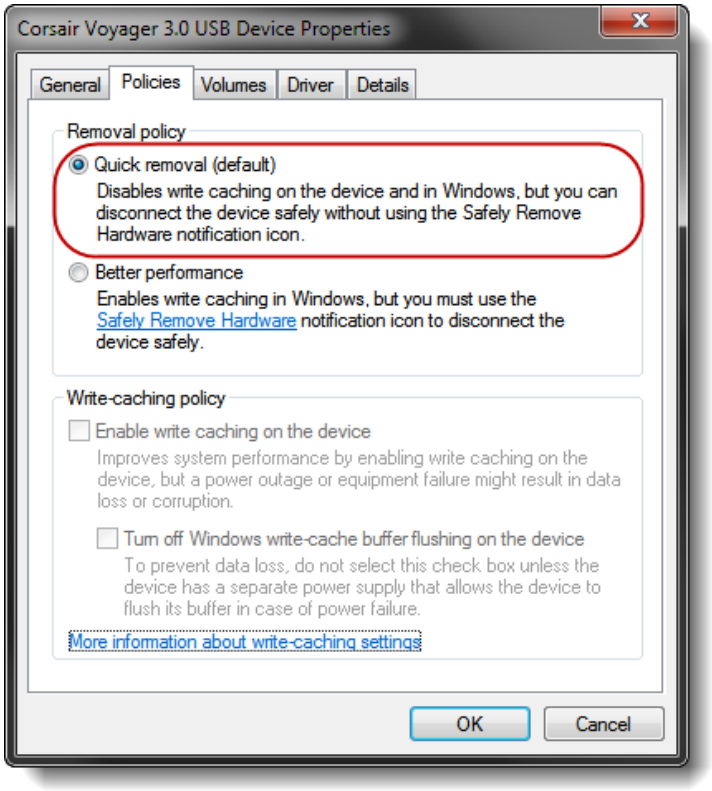
Here's how to check to make sure that your USB device's quick removal policy is turned on:

Step 1: After you've inserted your USB device, launch Device Manager by hitting the Windows logo key, then typing "device manager" and selecting it from the search list.

Step 2: Drill down in Disk drives and double-click on your USB device.



Step 3: Go to the Policies tab and make sure that "Quick removal (default)" is selected.

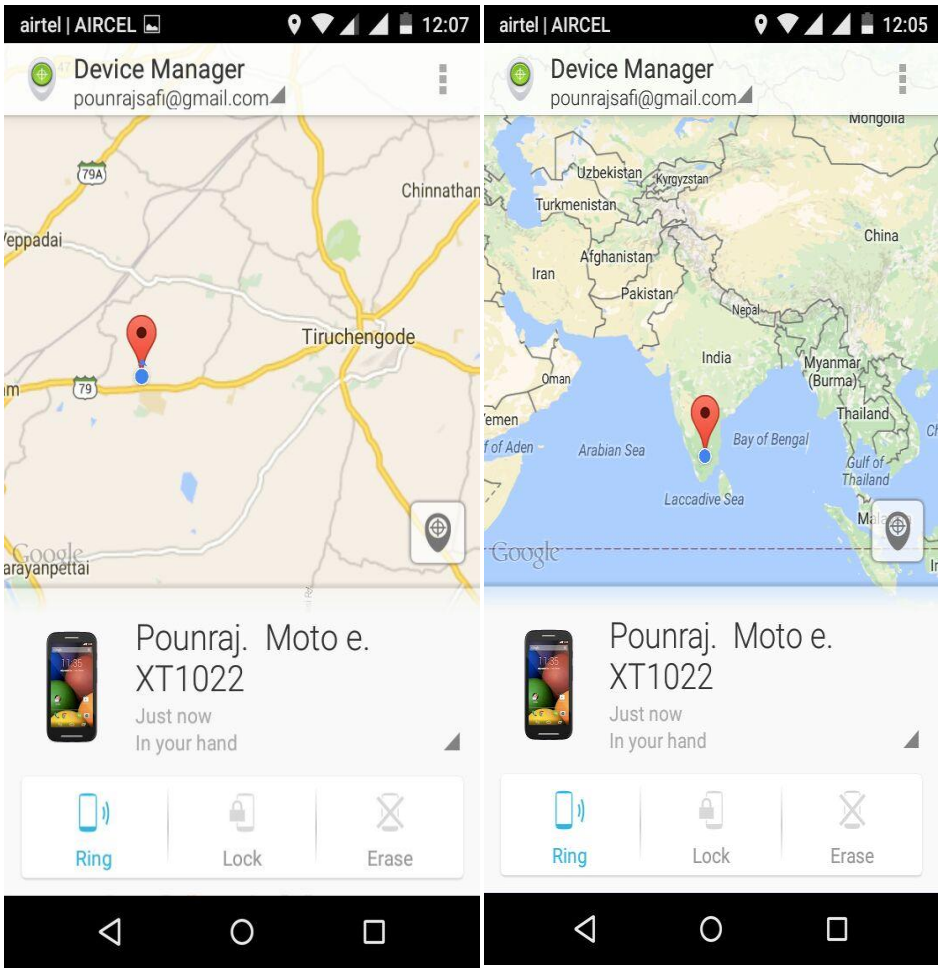


Android Device Manager

Android Device Manager will help you find or erase your missing phone:

While we hope you'll never need to use it, Android has a great native tool to help locate and remote wipe a lost or stolen phone. It's called Android Device Manager, and all you need is a Google account to set it up on your phone, and you can use any other online device to track it down or wipe it. The important thing, though, is that you need to have it set up and ready before anything bad happens.

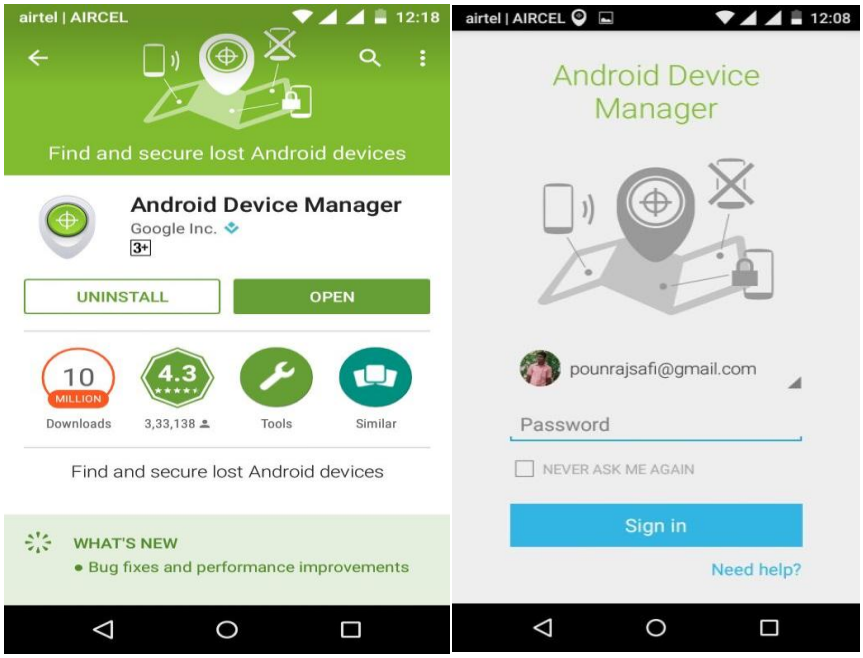
That's where we come in. We'll help you get it set up and have a look at what you can do with it. In just a few easy steps you'll know all there is to know about Android Device Manager.



Installing Android Device Manager

This part is super-simple. Fire up your phone and open the Google Play app, and search for Android Device Manager — it's the first search hit. If you're reading this on your phone, I'll make it even easier: Download Android Device manager from Google Play. The app installs just like any other app, but you'll need to go to your settings and allow it to act as a Device Administrator. This way, it has permission to wipe or lock your

phone. You'll usually find the Device administrator settings under security. Once that's done, you can fire up the app and get it activated!



Signing in to Android Device Manager and finding your phone

You'll need a Google Account to download the Device Manager app from Google Play, and you'll also need one to get signed into it. You can use any of the Google accounts that are on your phone, and you'll find them in a drop down list when you open the app. The password field wants your Google

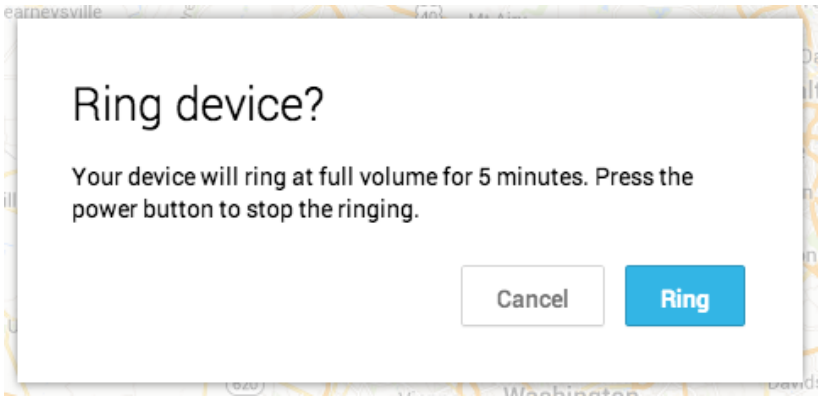
Password, and the blue sign in button does just what it says — signs you in.

Unless you have more than one device signed into Google, you'll probably see a map with your current location, and the make and model of your phone listed below. You'll also notice it tells you when you located it last, and where it is — in your hand. If you have multiple devices and have set up Android Device Manager on them, you'll find them in the drop down list at the bottom.You may have noticed that there was an option for a "Guest" to log in to Android Device Manager when you first signed-in. That allows someone else to find, lock or wipe their device using the app on your phone. We'll talk more about that below

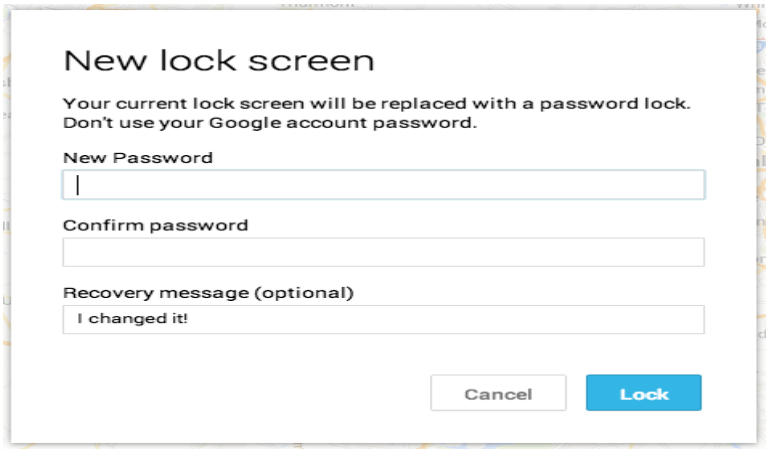
Locking and ringing your Android over the Internet

When you've lost your Android, a method to find it is really only useful if it's on the web. The Android Device Manager website is a simple affair, and usable by just about every web browser out there. Fire up a computer or a tablet or a phone and click the link to the page. You'll have a few seconds wait to see

if your phone can be located, and once it (hopefully) is, you have a few options.



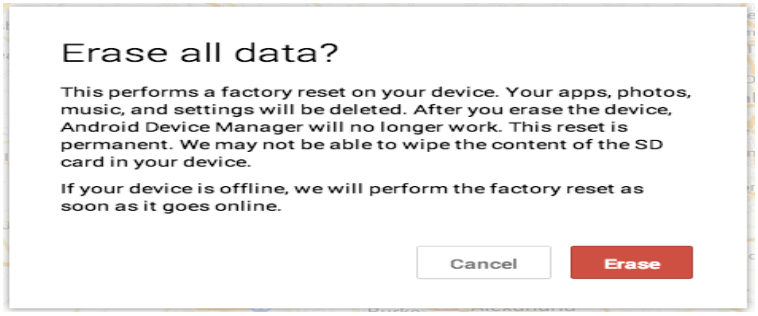
The Ring option does just what you think it should do — rings your phone even if you have the ringer turned down or off. Click the button, and give the OK in the pop-up, and your phone will ring at full volume for five minutes, or until you hit the power button and quiet it down. Perfect once you use the map to get close to your phone. Or if your phone is lost under the couch.



The Lock option will allow setting or changing a PIN or password on your device, as well as display a message on the locked screen. This is useful if you think someone else may come across your phone and you never set up a password. Or when that friend calls you and says "Dude you totally left your phone here last night, and I'm going to go on Facebook and post under your name!"

You can try both of these things with your phone in your hand by going to the Device Manager page on any computer. Or as we mentioned earlier, a friend can let you sign in as a guest on his or her Android Device Manager app. Give these a try before you need them so you know what to expect!

Wiping a phone that's gone forever



If you once left a phone at a public place and don’t realize it: It is sure would have been nice if there was a way to remotely

wipe that phone just in case someone figured out how to get around your password.

Be aware that everything is gone when and if you do this, and your phone is back to the same settings it had while it was brand new in the box. This means that the Android Device Manager app isn't installed nor signed it, and you won't be able to track it any longer.

This also works when the power is off. Google gets a push message ready to go and as soon as the phone is on and connected to the Internet it will shut down and factory reset itself. It's the last-ditch effort, for when you need a last-ditch effort.

MAILING LIST – To Whom We Send

- **Mr.B.Murali, HOD of CS, PSG college of Arts and Science, Coimbatore- 14.**
- **Mr.P.Narendran, HOD of CS, Gobi Arts &Science College, Gobichettipalayam-53.**
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- **Mr.S.SureshBabu, HOD of CS, Thiruvalluvar Government Arts College, Rasipuram.**
- **Dr.K.Thangavel, HOD of CS, Periyar University, Salem-11.**
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- **Dr.S.K.Jayanthi, HOD of CS, Vellalar College for Women, Erode-9**
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- **Dr. K. Rama, Deputy Adviser, NAAC, Bangalore.**
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