

# CLOUD COMPUTING

## WHAT IS CLOUD COMPUTING

cloud computing means using the Internet to share any kind of activities from one computer to another computer. It also can store data and programs over the Internet. Five examples of cloud computing service provider are:

- Google Cloud
- IBM Cloud
- Microsoft Azure
- Cloud Linux
- Oracle Cloud Infrastructure

## DESCRIPTION ON CLOUD COMPUTING SERVICE PROVIDER

**GOOGLE CLOUD-** Google cloud is a platform that provides computer resources for deploying, developing, and operating applications on the web. It also has combination of services that can be use over the internet and it can help organization go digital. Function of google cloud is as a Google's server less compute solution for creating any event-driven application.

**IBM CLOUD-** IBM cloud is one of the suite of cloud computing services. there are several services by IBM cloud which are, IBM analytic engine, IBM db2 warehouse on cloud, IBM master data management on cloud and many more.

IBM provides Platforms such as a Service (PaaS) and Infrastructure as a Service (IaaS).

**MICROSOFT AZURE-** The Azure is the public cloud platform with over 200 products and cloud services designed to help us having a new solutions for our life. The solutions includes Infrastructures as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). These solutions can be used for services such as analytics, storage, networking and many more.

**CLOUD LINUX-** Cloud Linux is a Linux-based operating system. It's also a natural technology for enabling cloud computing because it has power-efficient, reliable, open source, scales to support critical workloads and ubiquitous. Cloud Linux is designed to provide shared hosting providers with a more stable and secure operating system.

**ORACLE CLOUD INFRASTRUCTURE-** Oracle Cloud has several services that unite together such as Infrastructure as a Service (IaaS), Software as a Service (SaaS), Platform as a Service (PaaS), and Data as a Service (DaaS) solutions within Oracle's cloud infrastructure. It also has collection of hardware and software needed to enable cloud computing. Oracle Cloud Infrastructure also has a flexible data platform that can help to enable us to big data application at massive scale.

## COMPARISON

	Microsoft Azure	Google Cloud	IBM Cloud	Cloud Linux	Oracle Cloud Infrastructure
compute	Virtual machines	Compute Engine App Engine	Bare Metal Servers Virtual Servers Power8	Virtual Machines	Bare Metal Virtual Machine
Storage	Blob Storage Queue Storage File Storage Disk Storage	Cloud Storage Persistent Disk	Object Storage Block Storage File Storage Mass Storage	pCloud Dropbox Mega Yandex Disk Cozy	Block Object File NVMe
Backup and disaster recovery	Backup site recovery	Disaster recovery (DRaaS) Backup	Backup	Backup and disaster recovery	backup
Database and data warehouse	Data Lake Store SQL Database Document DB Table Storage Warehouse	Cloud SQL Cloud Bigtable Cloud Spanner Cloud Datastore	Data Services Big Data hosting MongoDB Hosting Riak Hosting	MySQL Governor PHP Selector	Exadata Cloud Service
In-memory technology	Redis Cache	Redis Memcached	-	-	Oracle Database
Containers	Container Registry Container Service	Container Engine Container Registry Container Builder	Containers	Docker CRI-O Kubernetes Microsoft Containers Linux containers	Container engine
Serverless/FaaS	Functions	Cloud Functions	Open Whisk	Cloud Functions	Functions
Analytics	HD Insight Stream Analytics	Big Query Cloud Dataflow Cloud Dataproc Cloud Datalab	Analytics Services Cloudera Hosting	-	Platform as a Service (PaaS)
Bare Artificial intelligence	Machine Learning Cognitive Services Bot Service Data Lake Analytics	Cloud Machine Learning Engine Cloud Natural Language API Cloud speech API	Watson	Machine Learning	Machine Learning
Internet Of Things	IoT Hub Event Hubs	Internet of Things	Internet of Things	Internet of Things	Internet of Things

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## REFLECTION

Throughout the making of this newsletter, we realize that cloud computing help human life in a lot of aspects. Especially in working aspects, where cloud computing can help the workers that have busy schedules to access the information via smartphone or any devices. Cloud computing also offers a convenient accessible information to workers that live a long way from the office to keep up to date with the clients. As a result, cloud computing can help the workers from any companies to do their work where ever they are.

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# AMAZON WEB SERVICES CLOUD COMPUTING



[https://th.bing.com/th/id/OIP.\\_AXfjQc5ZBE-O7dEd-BAmQHae8?pid=ImgDet&r](https://th.bing.com/th/id/OIP._AXfjQc5ZBE-O7dEd-BAmQHae8?pid=ImgDet&r)

## SUMMARY OF TALK

The 3rd industrial talk given by Dr. Qusay Al-Maatouk is about cloud computing and Amazon Web Services as one of the cloud computing service providers. Cloud computing did offer a lot of benefits to the users. It enable the users to think the infrastructures as software compare to the traditional computing that the users need to take the infrastructure of the hardware into the consideration.

## REFLECTION

From the talk given, we realize that cloud computing may help human life in many aspects. For example, in technologies development, business and education. It provides the users the IT resources they need more easily since they didn't need to prepare and maintain their own hardware. As a result, it opens up more opportunities for the developers or students to develop their projects more innovatively with better technology and lower cost.

## Cloud Concept Overview

Cloud computing is known as the delivery of on-demand computing resources such as storage and application via the Internet on a pay-for-use basis. There are three types of cloud services model, infrastructure as a service, platform as a service, and software as a service. Then usually the service provider will allow the user to choose the deployment model either on the cloud, hybrid, or private cloud. It all depends on the user's need.

## Advantage of Cloud Computing

Cloud computing brings a lot of advantages to the users.

Where they need to pay only on the amount of services they used compared to the amount required for them to run or maintain their own hardware. Also, it has a flexible server capacity which means it prevents underestimated or overestimated server capacity. Next with cloud computing, the users may go global in minutes. Perhaps, if they want to transfer their resources to their client outside their country, they can do that only in a short time.

## Introduction of AWS

Amazon Web Services, AWS is one of the service providers for cloud computing. It offers a secure cloud platform with a broad set of global-based products, on-demand access to IT or computing resources for machine learning, IoT, network and content delivery, etcetera, pay-on-use services, a pricing calculator, and a lot more. All of the services are depending on the business goals and the technology requirements. There are three ways for the users to interact with AWS, through the AWS management console, command-line interface (AWS CLI), and software development kits (SDKs)



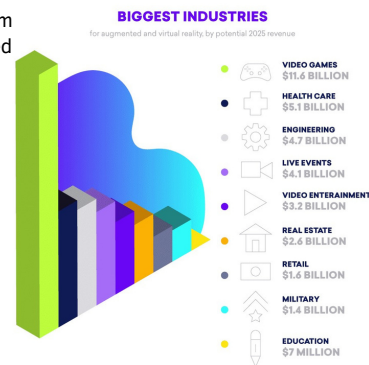


## Augmented Reality

uses information in the form of text, graphics, music, and other virtual enhancements merged with real-world objects. To summarize the talk which Dr. Ruzimi gave from OZEL Sdn. Bhd, there are 9 digital industrial technologies that have and will continue to aid humans. Next, the future of augmented reality and 10 use cases were shown in the talk, such as education, healthcare, and many more. Besides that, the talk discussed the different types of AR as well. Moreover, since the world is advancing at an unprecedented speed in technology, the talk also mentioned 10 skills for future jobs in Industry 4.0 and 6 common positions in AR work. Besides that, the talk showed us 3 key areas where humans beat machines that are key to future job creation, so future graduates have heads up when exploring their field. Finally, the talk ended with a great piece of information, especially for fresh graduates, which are 5 things to consider when choosing your career.

The 9 Digital Industrial Technologies are Autonomous Robots, Simulation, System Integration, Industrial IoT, Cybersecurity, Cloud, Additive Manufacturing, Augmented Reality, Big Data, and Analytics

Augmented reality (AR) will make a massive impact on the world's industry. The largest industry to be affected is most likely the video game industry which is predicted in 2025 to earn revenue of about \$11.6 billion, followed by other big industries such as healthcare (\$5.1 billion), engineering (\$4.7 billion), live events (\$4.1 billion), video entertaining (\$3.2 billion), real estate (\$2.6 billion), retail (\$1.6 billion), military (\$1.4 billion), and education (\$7 million).

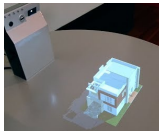


<https://lumusvision.com/augmented-reality-trends-infographic/>

There are 10 use cases for the future of augmented reality. Firstly, in **education**, it has the ability for students to inspect 3D holograms from many different angles. Secondly, for **appliances, furniture & other large products**, customers can redesign empty rooms. Thirdly, **clothing & fashion** customers can use virtual fitting room technology. Fourthly, **JARVIS-like virtual assistance** can assist humans with poor vision. Fifthly, the **creation of the Metaverse** is the combination of AR, VR, AI, 5G network and other techs. Sixthly, **outdoor & indoor navigation AR** makes navigation easier by storing capacity data provided by IoT sensors. Seventhly, AR is useful in **healthcare** because of the possibility of consumer education, which shows the risk & benefits of procedures to patients. Eighthly, in the **automotive industry**, AR can display the roads and allow the user to navigate better. Ninthly, in **sporting events**, data collection allows the user to have an AR experience of the sports. Tenthly, AR can be used as **virtual and assembly instructions** such as 3D holograms & animations to help with assembly.



<https://www.ozelbiz.com/>



<https://essentialpicks.com/projected-augmented-reality/>



<https://www.inaugment.com/does-your-business-need-the-pinch-of-augmented-reality/>

There are three types of AR which are **marker-based AR**, **projection-based AR**, and **superimposition based AR**. Marker-based AR requires the user to scan a marker or photo to trigger the augmented experience. Projection-based AR is a technique that will transmit images on a surface of a 3D object. Superimposition based AR use object recognition that will replace the original image with an augmented image.

10 primary skills are required for future jobs related to IR 4.0: complex problem solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, judgment and decision-making, service orientation, negotiation, and cognitive flexibility.

There is 6 common position in AR work: AR/VR content developer, AR/VR content strategist, AR/VR user experience designer, Designer, animator or sound artist specialising in AR & VR, AR/VR community manager and AR/VR project manager.

The 3 key areas where humans beat machines that are key to future job creation. Firstly, **creative endeavours** are everything from scientific discovery to creative writing and entrepreneurship. Secondly, **social interaction** because robots don't have the kind of emotional intelligence that humans do. Thirdly, **physical dexterity & mobility** is because a millennium of hiking mountains, swimming lakes and dancing practice gives humans extraordinary agility and physical dexterity.

There are 5 things to consider when choosing your career. Firstly, **study data science** and **get a job in data**. Secondly, **select and focus on jobs** that require skills like creativity, problem-solving and connecting with people on a human level. Thirdly, **keep in touch** with the job market to get an insight into which jobs are in demand and their average salary. Fourthly, **be data-savvy** and **learn how to use data** to make decisions and solve problems. Fifthly, **get familiar with artificial intelligence**.

**Augmented Reality (AR)** is one of the keys to changing the world to a whole new era. It is a starting to create a new kind of technology and will be the core of innovation. In the future, the innovation of augmented reality will help humans overcome the limit of humans, such as in the medical prospect which requires a surgeon to have tons of experience and knowledge that takes a long time to achieve to perform a successful surgery but with the help of AR, the process to train a surgeon will be shortened because of the detail simulation provided by the AR. AR will also have room to improvise to match with other aspects of the industrial revolution.

## Newsletter Highlights

9 DIGITAL INDUSTRIAL TECHNOLOGIES

FUTURE OF AUGMENTED REALITY

THE FUTURE OF AR IN 10 USE CASES

TYPES OF AR

10 SKILL FOR FUTURE JOBS IR 4.0

6 COMMON POSITIONS IN AR WORK

3 KEY AREAS WHERE HUMAN BEAT MACHINESE THAT ARE KEY TO FUTURE JOB CREATION

5 THINGS TO CONSIDER WHEN CHOOSING YOUR CAREER

REFLECTION