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#ASHTAG

Applied Science and Humanities Department

VISION

The Department of Applied Science and Humanities is committed to dynamically integrate the components of Science, Humanities and Engineering to groom students to transform them as globally acknowledged professionals.

MISSION

The department is carrying a mission to create and disseminate the knowledge and techniques in intellectual areas of Engineering and other core areas of Applied Science and Humanities for betterment of Eco system.

To inculcate the importance of Applied Science and develop a natural flair for Engineering and Technology which in turn shall mold students into a competent professional.

To be recognized for practicing the best teaching-learning processes to create highly competent, resourceful, and self-motivated young Engineers for the benefit of the society.

Organic Farming: The need of the hour

Toxicity and residues of the agrochemicals in farm production are the main problems facing mankind today. Nowadays consumers all over the world are concerned about the presence of toxic residues of chemical fertilizers and pesticides in the food items including cereals, pulses, oilseeds, vegetables, fruits, milk and milk products etc.

There is also growing concern for safe and healthy food by the World Trade Organization (WTO) and other such agencies. Application of chemical fertilizers, pesticides and synthetic substances over a long period resulted in poor soil fertility, human and animal health hazards, disturbed ecosystem- all leading to decrease productivity and reduced profitability.

"Organic farming is a system of farming which largely avoids the use of toxic chemicals such as chemical fertilizers, pesticides and synthetic chemical and use of natural resources such as organic manures, minerals, crop residues and bio-fertilizers to maintain the environment clean, ecological balance and to provide stability to the production level without polluting soil, water and air". The basic principles of organic farming are that the natural inputs are to be applied and synthetic inputs are prohibited. The organic farming system relies on the application of organic manures, green manures, bio-fertilizers, green leaf manuring, crop rotation, growing trap crops, biological control of insect-pest, herbal pesticides, and organic plant growth substances etc, and strive for sustainability and biodiversity. Hence, there is a great need for organic cultivation of important cereals, pulses, oilseed, vegetables, and fruit crops.

Why is organic farming necessary?

The intensification of agricultural production has led to widespread use of concentrated fertilizers and pesticides resulted in manifold increases in the productivity of crops. However, the ill effects of these agrochemicals are clearly visible on soil health, soil microbes, and the quality of groundwater, food, fodder, and food materials.

The soil is the foundation of the food chain. Organic farming lays thrust on the protection of soil too. The presence of a sufficient quantity of organic carbon and efficient microorganisms in the soil is essential for its fertility and good quality and also for the healthy growth of crop plant. Thus, organic farming is certainly becoming necessary for the following reasons: -

- It is a sustainable and eco-friendly technology.
- It improves the quality and nutritive value of the farm produce.
- Encourage sustainable livelihood of the producers as well as the safeguard of the consumer's health.
- It improves the physical, chemical and biological health of the soil.
- Enhances and sustain biological diversity within the system.
- Promote healthy use of natural resources and minimize all forms of pollution.
- It reduces the debts of the farmers to purchase costly unsustainable inputs.
- Emission of greenhouse gas (nitrous oxide) from fertilizers on soil damages the ozone layer.

The scope of organic farming

Consumers in many countries willingly pay a premium price for organically farmed fruits, vegetables and other food products. Demand for the organic product in the International market is expected to go up. In view of the growing demand for the organically produced food items worldwide, the natural advantages in this regard need to be fully exploited. Farmers are also increasingly looking at organic farming to save costs of cultivation and preserve soil fertility. In order to help the farmers obtain the required certification for organically produced items, awareness has to be generated through training and distribution of information literature. Organic products need to be certified by the accredited certifying agency so that farmers do not face a hurdle in the export market. Organic farming will also help us to avoid the dumping off of thousands of tons of pesticides on the soil every year and give us chemical-free food and eco-friendly environment for better living.

Article by ***Prerna Singh***

Contributed by **Aniket Patil**
Source: *https://sciteum.com/2019/01/organic-farming-the-need-of-the-hour*

Why is Earth spinning faster than it has in 50 years?

Our planet Earth may be spinning faster than it has in over 50 years! Scientists believe that each day is shorter than 24 hours owing to the change in the speed of earth's rotation, which has increased over the last 5 decades.

Daily Mail reported that since 2020, every day is taking less than 24 hours. In fact, July 19, 2020 market the shortest day ever since data collection by scientists began in the 1960s.

July 19, 2020 was 1.4602 milliseconds shorter than the regular 24 hours. This goes in direct opposition of previous records, under which the planet took longer than 24 hours to complete a rotation. In July 2020, the International Earth Rotation and Reference Systems Service (IERS) had announced that no "leap second" would be added to the world's official timekeeping in December 2020.

Leap seconds refer to adjustment of time, akin to leap years. According to the IERS, leap seconds have been added to 27 days since the 1970s. The most recent addition of leap second happened on December 31, 2016. And leap seconds are added on either the last day of June or December. This implies that the next potential date for a leap second is June 20, 2021.

A study from 2015 posited that this change in the earth's rotation may be due to global warming. Scientists claim that on average, days are about 0.5 seconds shorter than 24 hours. Scientists around the world are considering whether to delete a second from time. Called a "negative leap second", it would be done to account for the change, and to keep passage of time in sync with the Earth's rotation.

Keeping atomic time in sync with solar time is important to keep satellites and other communications equipment in sync.

Edited By: Bharat Sharma

Contributed by **Neha Shah**

Source*: https://www.wionews.com/science/why-is-earth-spinning-faster-than-it-has-in-50-years-354845*

The 5 Biggest Technology Trends In 2021 Everyone Must Get Ready for Now

It might seem strange to be making predictions about 2021, when it's far from certain how the remainder of 2020 is going to play out. No-one foresaw the world-changing events of this year, but one thing is clear: tech has been affected just as much as every other part of our lives.

In many ways, Covid-19 will act as a catalyst for a whole host of changes that were already on the cards anyway, thanks to our increasingly online and digital lives.

Here's my overview of how the major tech trend that I identified in my most recent book *Tech Trends in Practice,* are likely to play out during the next year

1. Artificial Intelligence (AI)

AI is undoubtedly one of the biggest tech trends now, and during 2021 it will become an even more valuable tool for helping us to interpret and understand the world around us. The volume of data we are collecting on healthcare, infection rates, and the success of measures we take to prevent the spread of infection will continue to increase. This means that machine learning algorithms will become better informed and increasingly sophisticated in the solutions they uncover for us.

From computer vision systems monitoring the capacity of public areas to analyzing the interactions uncovered through contact tracing initiatives, self-learning algorithms will spot connections and insights that would go unnoticed by manual human analysis. They will help us predict demand for services from hospitals and other healthcare providers and allow administrators to make better decisions about when and where to deploy resources.

2. Robotics, Drones, and Vehicle Automation

As the volume of passengers using public transport fluctuates from week to week, depending on local conditions, initiatives around self-driving vehicles will continue at an increasing pace. Driving efficiency across public transport networks will be a priority for service providers as well as civic authorities, where reducing human labor costs will help balance the uncertainty around customer demand.

In recent years we have seen the emergence of robots in the care and assisted living sectors, and these will become increasingly important, particularly when it comes to interacting with members of society who are most vulnerable to infection, such as the elderly.

Drones will be used to deliver vital medicine and, equipped with computer vision algorithms, used to monitor footfall in public areas in order to identify places where there is an increased risk of viral transmission.

3. The As-A-Service Revolution

"As-a-service" – the provision of services that we need to live and work through cloud-based, on-demand platforms – is the key that has put the other tech trends we talk about today in reach of anybody. Thanks to cloud offerings from companies like Google, Microsoft, Amazon, and an ever-growing horde of startups and spinoffs, innovators in all fields can deploy cutting-edge tech with little upfront investment in tools, equipment or specialized people.

As the ongoing pandemic rages around the world, we have clearly seen that companies that rely on cloud to provide scalable solutions as-a-service are prospering. In 2021 and beyond, this is going to become increasingly important, and more possibilities will open up for everyone.

4. 5G and enhanced connectivity

. Each successive advance in mobile connectivity from 3G onwards has unlocked new use cases for the internet. 3G made web browsing and data-driven services useful on mobile devices, 4G led to the growth of streaming video and music platforms as bandwidths increased, and 5G, likewise, will open more doors in terms of what is possible.

5G and other advanced, high-speed networks will make all the other trends we discuss here available anywhere, any time. Complex machine learning applications relying on real-time access to Big Data sources can be conducted in the field, via automation.

5. Extended Reality (XR) – Virtual and Augmented Reality (VR/MR).

These terms cover technology that uses glasses or headsets to project computer-generated imagery directly into the user's field of vision. When it is superimposed over what the user is viewing in the real world, it is AR. And when it is used to place the user into an entirely computer-generated environment, it is VR.

During next year we can again expect to see these, in conjunction with the other trends discussed here, assisting in tackling challenges posed by the current world situation. Largely this will involve allowing us to avoid potentially dangerous situations where there could be a risk of viral transmission. For example, medical examinations and diagnosis can increasingly be carried out remotely. A solution available to opticians allows eye tests to be carried out entirely in VR, as high-definition cameras give a clear image of the patient's eye. An AR tool then allows the customer to browse the range of glasses on offer and see what they look like on their own face without having to leave their home.

We will also see an increase in the use of VR and AR tools within education. This will reduce the need for us to work in crowded classroom conditions – if not totally, then at least in areas and during times when it is known that transmission rates are high.

And as more data on the conditions and way viral transmission takes place becomes available, AR tools will be used to give out real-time warnings when we move through areas where the infection is known to have spread. Even simple steps like reminding us to wash our hands when we touch a door handle in a public space or issuing an alert when a device senses that we have touched our face without washing our hands, could help to save lives and stop us spreading illness around the real-word environments we inhabit.

*Article by **Bernard Marr***

Contributed by **Shivam Shukla**

Source: *https://www.forbes.com/sites/bernardmarr/2020/09/14/the-5-biggest technology-trends-in-2021-everyone-must-get-ready-for-now/?sh=16a1a54a1b82*

Congratulations!!!

Kudos to Shivam Sir for his accomplishment for completing two certificate courses in two months.

ICTACADEMY

CERTIFICATE OF PARTICIPATION

C.No: 021-195389
Date: 26 Feb 2021

SHIVAM SHUKLA

Universal College of Engineering , Mumbai

has participated in 10 Hours of Faculty Development Program on

Productive tools in AutoCAD (Online Live FDP)

conducted by ICT Academy on 22 Feb 2021 to 26 Feb 2021

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President, ICT Academy

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CERTIFICATE

This is to certify that,

SHIVAM MAHENDRA SHUKLA

has been provisionally registered for the Ph.D. program under the faculty of

SCIENCE A) TECHNOLOGY

and attended the Pre-Ph.D. Course Work on

Paper - I (PHD 001): Research Methodology and Research & Publication Ethics (RM-RPE),
organized online by the University during, 01-08 FEBRUARY, 2021

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