iCERYX

The Volume of ICE

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NOVEMBER –DECEMBER 2018.

FORWARD

The department of Instrumentation and Control Engineering motivates the students to be more participative in all the academic and co-curricular events. The students have gone in for many certification courses which are of valued importance. The students are put into the right path of many projects and extra-curricular activities. The department encourages its students to enthrall in all activities that result in positive outcomes and to actively use the opportunities made available to them. We wish the students would take iCERYX as a platform to showcase all their achievements from these endeavours.

-Dr.SM.Girirajkumar

HoD/ICE

EDITOR'S DESK

As you know, there have been quite a lot of activities going on, in our department lately and we've been having a lot of good changes and improvements within our family. As the PR team, it's our job to present to you and the world around us, about these activities. We are back again with the first official issue of iCERYX, wherein a glimpse of our department activities has been portrayed. It all came true only because of all your consistent support and contribution. In this issue we have focussed on the theme "Engineers - The Change makers" iCERYX beckons young budding engineers to express their ideas. It provides you an opportunity to showcase extensive knowledge about our department.

PR TEAM:

1. R.Milan Patel, Pre-Final Year
2. G.Subbiah Srinivasan, Pre-Final Year
3. B.Irhfann Ameer, Pre-Final Year
4. R.S.Sanchhali, Pre-Final Year
5. S.P.Mahalakshmi, Second Year
6. R.Aakshsami, Second Year
7. P.Sharvin Shakesh, Second Year

CONTENTS:

TRAINING & PLACEMENT

For Second Years aptitude training program had conducted on 03.12.2018 to 13.12.2018. Training was good and they taught a few shortcuts to solve the problems. Finally Effectiveness was measured by test on 13.12.2018.

S.No	Session Topic	S.No	Session Topic	S.No	Session Topic
1	Time & work,	6.	Cryptarithmetic	11.	Maths Tricks
2	Problems on Train & Ages	7.	Permutation and Combination	12.	Pipes and Cisterns
3	Calendar	8.	Seating Arrangements	13.	Logical Reasoning
4	Problems on Ratios	9.	Sqaure root	14.	Number series,
5	Problems on Probability	10.	Cube root	15.	Directions

TECHNICAL ACTIVITIES OF FACULTY IN ICE DEPARTMENT

The faculty of ICE, have participated in number of FDPs/Seminars/Worhshops/Conferences, that covers technical, research areas, and it includes the organizers from NIT, AICTE sponsored etc. The details are as follows:

DAY 1: Fiber Optics concepts, Tomography.

DAY 2: Patholgy.

DAY 3: Optical and Chemical structure of tissues.

DAY 4: Optical Insruments and lab visit

DAY 5: Physics impacts in optical field.

S.No	Name of the Staffs Attended	Workshop/FDP/Seminar Attended	organizer	Date/Venue
1.	Mrs.A.Christy Arockia Rani	Five days Course on STTP Course on BIOMEDICAL OPTICS AND INSTRUMENTATION	IIT, Madras	03-12-2018 To 07-12-2018
2.	Ms.K.Ezhilarasi	Five days Course on STTP Course on BIOMEDICAL OPTICS AND INSTRUMENTATION	IIT, Madras	03-12-2018 To 07-12-2018
3.	Ms.B.Deepa	Five days Course on STTP Course on BIOMEDICAL OPTICS AND INSTRUMENTATION	IIT, Madras	03-12-2018 To 07-12-2018

PLACEMENT SESSION

SL.NO	COMPANY NAME	DATE	ROUND	SELECTED
1	OPTITHOUGHT	27.11.2018	R1:Technical	**3 Students selected** Mohamed Parsath.M Anu Priyadharshini.C Santhoshini.R
			R2: HR	
2	SAAVI SOFT TECHNOLOGIES	28.12.2018	R1: Online Aptitude	**4 Students selected** AzhaguVigna Rajan.M Iswarya.S Subbulakshmi.P.N GuruPrasath V.K
			R2: Group Discussion	
			R3: HR	

Tokyo

Located in the industrial city of Chiba, just outside of Tokyo, CEATEC is the biggest electronics show in Japan.

Each year, the nation which gave the world the bullet train, the Walkman and blue LED light showcases its latest, cutting-edge consumer technologies.

In 2018, Sharp introduced the 8K era with its dazzling 27-inch monitor of the same resolution due to release next month, Lenovo debuted a Star Wars Jedi Challenge game that allowed users to engage in virtual reality lightsaber battles and there were robots galore. This is, after all, Japan.

CNN highlights eight of the quirkiest inventions showcased at the event.

"Gundam Concierge Haro" was one of the many robots on display at CEA-TEC.

Bitescan

It looks like a Bluetooth hands-free device, but bitescan is actually measuring your chewing strokes as you eat.

Hung from the ear, it is smaller and lighter than existing bite counters (they're normally attached to the chin) and can determine a user's bite speed, number of bites per minute and type of bite using a waveform detected on the back of the ear.

Sharp has somewhat gamified the concept: the device syncs up to a smartphone app which categorizes results by animal type i.e. slow chewers are tortoises.

The product will go on sale next year. Sharp says it will then share the data it collects with Japanese universities. The aim, it says, is to allow the user to achieve the perfect chewing habits.

Earprint

Thought your fingerprint was secure? Think again. Researchers at Michigan State University last year proved it can be hacked using little more than an inkjet printer.

Developed by US-based technology firm Descartes Biometrics, it works like this: Firstly, the user downloads the ERGO software onto their smartphone.

The user lifts the device to the side of their head and presses the center of the touch screen on their ear. A sound is then sent into the ear, and due to the "unique geometry of the ear," the sound that is echoed back is specific to each individual.

ERGO uses sensors embedded in modern Android smartphones, meaning no additional hardware is required.

Authentication takes about one second, and the company says, improves with use, storing up to ten scans of the user's ear.

Factory robots

Omron's artificial intelligence (AI) Automatic Transportation Mobile Robot at CEATEC.

Omron artificial intelligence (AI) Automatic Transportation Mobile Robot machines are designed to work together in factories.

The white robots, launched in January, gather data as they roam around, creating maps in their "brain" which they then use to independently navigate their environment.

All the controller has to do is set the robot's destination and it will navigate its own route. Laser sensors on all sides of the "body" allow the robot to detect unexpected objects -- a person, for example. Using those maps, it can reroute to the destination.

The robots can travel at 1.8 meters per second, and carry a maximum load of 130 kg -- although the greater the load the slower they travel.

And their application isn't limited to factories. At Incheon Airport in South Korea, a mobile robot has been serving customers drinks.

Dinner is ready. But don't tuck in. First you need to put it through your calorie scanner.

That's the idea behind CaloRieco. Its infrared scanner measures nutrients within an accuracy range of 20%, according to manufacturer Panasonic. Current calorie scanners take between two and three minutes, the tech here works in just 10 seconds.

As well as people hoping to lose weight, the product is also aimed at those with diabetes and other diet-affected health conditions. The scanner stores nutritional data, and Panasonic hopes that eventually it will be able to suggest recipes according to users' needs.

The price and launch date are both to be decided.

Supermarkets of tomorrow

Usockets is a series of electronic supermarket price tags, which feed into a centralized system that uses real-time data to manage a store.

Online stores are nothing new, but what if physical shops went online, too?

That's the idea behind Usockets, a series of electronic supermarket price tags which feed into a centralized system that uses real-time data to manage a store.

Not enough footfall in the dairy aisle? The system's heatmap can identify that and automatically lower prices on items that need to sell.

It gets even smarter. A technology called LinkRay allows shoppers to scan price tags with their smartphones to activate videos, providing more extra product information.

The technology is still under development, but gives an insight into what the shops of the future could look like.

Digital makeover

Panasonic's Makeup Design Tool features an editing software, which in video simulation mode uses a live video as its canvas. Users can apply makeup on their image, getting a realistic projection of their virtual makeover.

Ever wondered what you'd look like with thicker eyebrows? Or wearing fake eyelashes?

Panasonic's Makeup Design Tool lets users experiment with these possibilities and more. The graphics editing software in video simulation mode uses a live video as its canvas. Users can apply makeup on their image, getting a realistic projection of their virtual makeover.

Brushes of different sizes can be selected to draw hairs on the face, or apply blusher.

The technology is targeted at makeup stores, wedding photography studios and cosmetic brands. The application is finished, and Panasonic says it is looking for business partners, such as make-up brands, to take it to market.

Babysitter

The bowling ball-shaped android can tell sleepy children to go to bed, download songs from the cloud to sing to little ones, and help children's educational development.

"Good morning, did you have a good sleep?" asks the Cocotto.

Billed as the perfect childcare partner by Panasonic, the bowling ball-shaped android can tell sleepy children to go to bed, download songs from the cloud to sing to little ones, and help a child's educational development.

Parents instruct the spherical social robot, making it their helper as much as the child's friend.

Oh, and it has some seriously cute facial expressions.

Qoobo therapy robot

A headless robotic cat might not sound that therapeutic, but believe us it is.

The Qoobo has been developed by Japanese firm Yukai Engineering and funded by a KickStarter campaign.

When a user pets the cushion-shaped and sized toy, its tail wags. The more vigorous the patting, the harder the wagging.

The Qoobo will launch next June and retail for $100, with an eight-hour battery life.

"It's a comforting communication that warms your heart the way animals do," say the manufacturers. "Wrap yourself with fuzzy love."

-KALKI. K /II YEAR ICE

12 SECURITY TECH TERMS EVERYONE MUST KNOW

With tons of new technology coming out in the 21st century, it's extremely important that you know what each of these terms means. You don't want to be looking like a complete fool when your tech-savvy buddies are going around using these terms and you have no idea what they are talking about.

Even if you don't like technology that much, knowing these insider terms can get you into a lot of new conversations and they will help you connect with many new people.

Read the terms, write them down, make a Quizlet out of them. Do what you got to do to learn them. Just know them.

1. Asset: An object that is valuable to a person or an organization.

2. Authentication: A process used to verify people to confirm their identity.

3. Brainjacking: Brainjacking is the term used for hacking into brain implants. In the future, we may all have brain implants but they come at the risk of getting hijacked, altering pain levels and even behavior.

4. Certification Body: A separate, independent organization which gives certification services to its customers.

5. Machine Bias: Machine bias is when the data in an algorithm machine gets influenced over time by human bias and prejudices from the people whom the data was collected from.

6. Crowdturfing: Crowdturfing is when you hire someone to write reviews for you. This is getting used in large scale by attackers and it makes it very hard to separate what is fake from what is real.

7. AI Cyber-Attacks: AI chatbots are being used to trick people into giving up private information like their credit card information, private documents, and passwords.

8. Computer Hallucinations: Self-driving cars and AI technology rely on cameras and algorithms to figure out what things are and how to navigate around obstacles. The problem is that the AI doesn't always recognize things properly and it is possible that cars with computer vision could get attacked.

9. Encryption: A process that allows one to convert data into a secure form to hide its content.

10. Instant Messaging: Allows conversations between multiple people through typing on devices.

11. Keyboard Logger: A software the records all keys pressed, usually used to reveal credit card details and private information. Keyloggers can be extremely dangerous because usually when they are installed they come equipped with trojans to help attack your computer. Make sure you check out the conclusion to this article to learn how to defend against these kinds of dangerous malware with the best antivirus solution.

12. Macro Virus: A macro virus is a special type of malware that uses regular spreadsheet and word document software to infect a computer.

These Terms Are Cool But A Quality Antivirus Is Superior. Antivirus has multiple layers of antivirus protection and it has the ability to completely defend your computer from the malware listed above. When it comes to antivirus protection, Norton Antivirus is essential in cybersecurity. They have won many awards for their superior antivirus protection.

-HEMAVATHI.I/IIYEAR ICE

3D PRINTED CAR

The latest technology inventions in 3d printing are

rapidly changing how things are being made.

It's an emerging technology that is an alternative to the traditional tooling and machining processes used in manufacturing.

At the International Manufacturing Technology Show in Chicago, a little known Arizona-based car maker created a media sensation by manufacturing a car at the show.

It was a full scale, fully functional car that was 3d printed in 44 hours and assembled in 2 days.

The car is called a "Strati", Italian for *layers*, so named by it's automotive designer Michele Anoè because the entire structure of the car is made from layers of acrylonitrile butadiene styrene (A.B.S.) with reinforced carbon fiber into a single unit.

The average car has more than 20,000 parts but this latest technology reduces the number of parts to 40 including all the mechanical components.

"The goal here is to get the number of parts down, and to drop the tooling costs to almost zero." said John B. Rogers Jr., chief executive of Local Motors, a Princeton and Harvard-educated U.S. Marine.

“Cars are ridiculously complex,“ he added, referring to the thousands of bits and pieces that are sourced, assembled and connected to make a vehicle.

"It's potentially a huge deal," said Jay Baron, president of the Center for Automotive Research, noting that the material science and technology used by Local Motors is derived from their partnership with the U.S. Department of Energy’s Manufacturing Demonstration Facility at the Oak Ridge National Laboratory in Oak Ridge,Tennessee.

This technology can use a variety of metal, plastic or composite materials to manufacture anything in intricate detail.

People tend to want what they want, when they want it, where they want it, and how they want it, which makes this technology disruptive in the same way digital technologies used by companies like Amazon and Apple disrupted newspaper, book and music publishers.

Imagine if you could customize and personalize your new car online and pick it up or have it delivered to you the next day at a fraction of the cost of buying one from a dealership?

What if you could make a fender for a Porsche, or a tail light for a Honda, for a fraction of the cost of buying from a parts supplier? How revolutionary would that be for the automotive industry?

It's already happening.

Jay Leno, the former Tonight Show Host and avid car enthusiast is famous for his collection of vintage automobiles.

One of the challenges with collecting antique cars is replacing parts. You can't buy them because they're obsolete and having a machinist tool the part doesn't always work and often requires costly modifications until the part fits.

So Leno uses 3d printing technology to make parts for his cars. "These incredible devices allow you to make the form you need to create almost any part", says Leno.

John B. Rogers Jr. believes that in the near future a car will be made in just 60 minutes.

The company is already organizing a worldwide network of "Microfactories" where you can order and pickup your personalized, customized car.

-ATCHAYA.G/III YEAR ICE

VEIN IDENTIFICATION

This latest technology invention is a biometric identification and security device known as PalmSecure.

It works by identifying the vein pattern in the palms of our hands.

Similar to our fingerprints, vein patterns are unique to each individual. The purported advantages of this technology is that it is less expensive, easier to manage, and is more reliable than traditional methods of identification.

-HEMALATHA.K/III YEAR ICE

WORLD'S FASTEST MOTOR

A new motor developed by researchers at ETH Zurich's Department of Power Electronics and marketed by the Swiss company, Celeroton, can spin in excess of 1 million revolutions per minute.

As a comparison, collapsed stars spin at 60,000 rpms, a blender at about 30,000 and high performance engines at around 10,000 rpms.

The matchbook-sized motor has a titatnium shell, ultra-thin wiring and a trade secret iron formulated cylinder. The need for smaller electronic devices requires smaller holes, which means smaller, faster, more efficient drills.

-YAZHINI.C/II YEAR ICE

1 IN 10 PEOPLE HAVE A FOOD ALLERGY, BUT MANY MORE THINK THEY DO

Physical reactions to certain foods may not signal an allergy.

About how many people do you know who claim to have food allergies? While some of them might be legitimate, about 1 in 5 food-allergy claims may be false alarms.

That's according to new research that finds that 1 in 10 people in the U.S. are afflicted with food allergies, while twice that number mistakenly believe themselves to be food-allergic.

Researchers surveyed more than 40,000 adults living across the country, finding that about 10 percent were allergic to one or more foods.

However, they also discovered that 19 percent of their subjects reported that they were allergic to certain foods, even though they didn't experience the physical reactions that typically accompany a genuine food allergy.

While there's no question that food allergies are real — and for some, potentially life-threatening — people who self-diagnose as food allergic without consulting a medical professional may be misinterpreting their symptoms as an allergic reaction, the study authors wrote.

In those cases, what the individuals were experiencing could be a sign of food intolerance" or other food related conditions" rather than a true allergic response, lead study author Dr. Ruchi Gupta, a pediatrician and professor of pediatrics at Northwestern University Feinberg School of Medicine in Illinois, said in a statement.

Allergic reactions are the immune system's response to a trigger that is perceived as a threat. Regarding food allergies, when some people eat a certain type of food — such as nuts, shellfish, wheat or dairy — it broadcasts an alarm signal to their immune system, provoking reactions that can vary widely between individuals, according to the Centers for Disease Control and Prevention (CDC).

Symptoms of food allergies can include hives, itching and swelling in the nose and throat, and stomach pain or nausea. In extreme cases, food allergies may lead to anaphylaxis — a state of shock accompanied by low blood pressure and constricted airways — which can be fatal if untreated, according to the Mayo Clinic.

Shellfish is the most common food allergen in the U.S., affecting approximately 7 million adults, according to the study. Milk allergies affect nearly 5 million people, followed closely by peanut allergies, which affect about 5 million people. Other widespread allergens include tree nuts, fish, eggs, wheat, soy and sesame, the scientists reported.

Allergies can be inherited or acquired, sometimes unexpectedly — bites from a type of tick have been linked to the onset of an allergy to meat, and a woman who recently received a lung transplant also acquired her organ donor's peanut allergy.

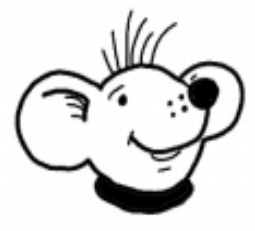
In fact, developing food allergies in adulthood happens more frequently than expected, the scientists reported. They learned from the surveys that about 48 percent of the subjects who had food allergies first experienced at least one of them as an adult.

"We were surprised to find that adult-onset food allergies were so common," Dr. Gupta said.

If a person suspects that they have a food allergy, it is critical that they visit a doctor for testing and diagnosis before attempting to correct the problem by eliminating foods from their diet, Dr. Gupta said in the statement.

"If food allergy is confirmed, understanding the management is also critical, including recognizing symptoms of anaphylaxis and how and when to use epinephrine," he added.

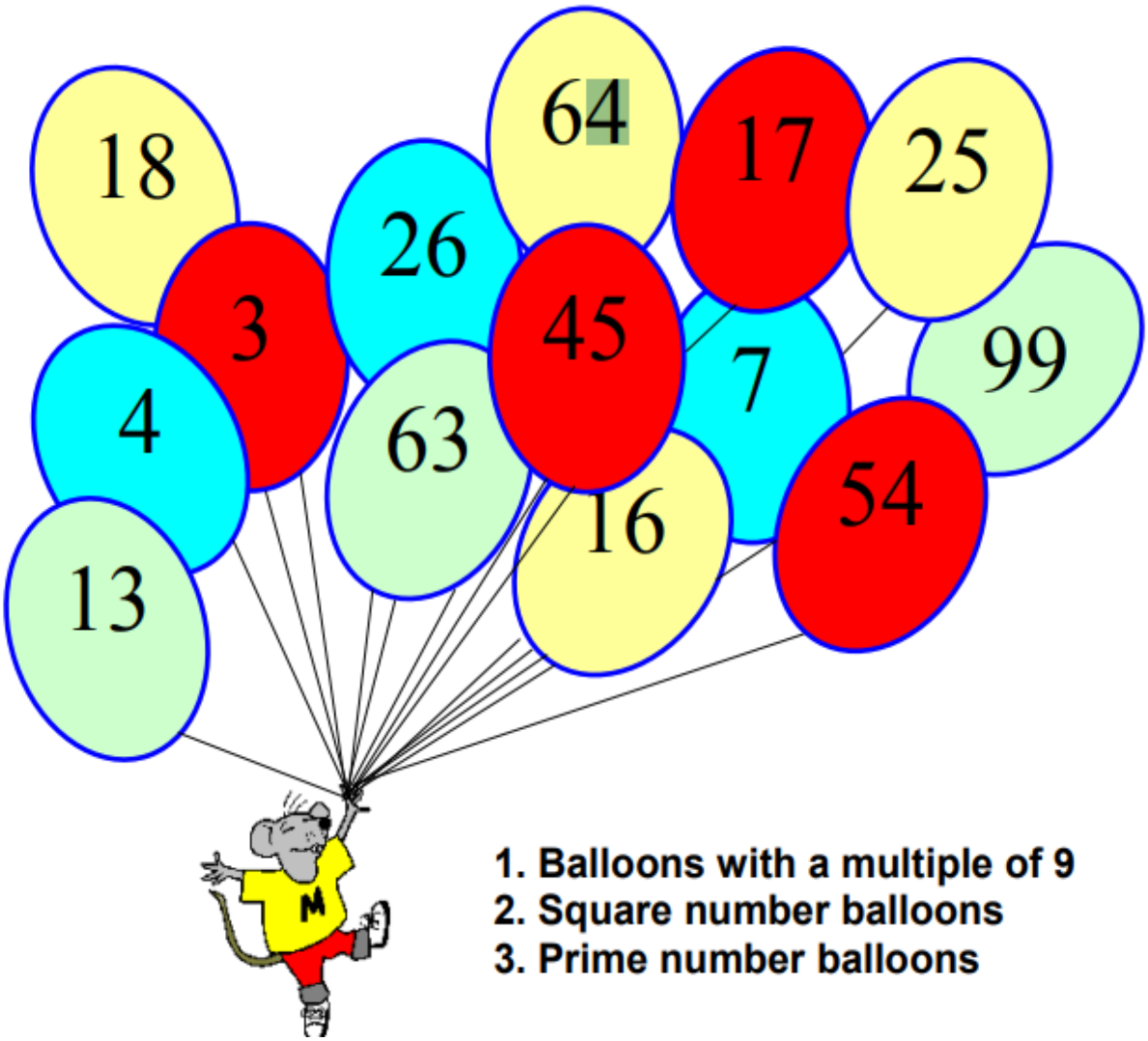
SABTHAMI.S/II YEAR ICE



Puzzle time

Balloon bursting

If a number in one of the balloons is included in the answers to the four problems below then that balloon will fly away.



1. Balloons with a multiple of 9
2. Square number balloons
3. Prime number balloons

How Artificial Intelligence and the robotic revolution will change the workplace of tomorrow

The workplace is going to look drastically different ten years from now. The coming of the Second Machine Age is quickly bringing massive changes along with it. Manual jobs, such as lorry driving or house building are being replaced by robotic automation, and accountants, lawyers, doctors and financial advisers are being supplemented and replaced by high level artificial intelligence (AI) systems.

So what do we need to learn today about the jobs of tomorrow? Two things are clear. The robots and computers of the future will be based on a degree of complexity that will be impossible to teach to the general population in a few short years of compulsory education. And some of the most important skills people will need to work with robots will not be the things they learn in computing class.

There is little doubt that the workforce of tomorrow will need a different set of skills in order to know how to navigate a new world of work. Current approaches for preparing young people for the digital economy are based on teaching programming and computational thinking. However, it looks like human workers will not be replaced by automation, but rather workers will work alongside robots. If this is the case, it will be essential that human/robot teams draw on each other's strengths.

The current UK computing curriculum is not preparing young people for a future of working alongside robots. The curriculum is based around computational thinking and programming. These skills should help pupils understand and use computers. But the reality is the skills and concepts pupils are learning will not prepare them for a robotic future.

ROBOT COLLEAGUES

It is hard to see why pupils will need to be able to convert numbers between binary and decimal or write programs using the computer language python. After all, the majority of students won't be growing up to build or program robots but rather to work with and rely on them. They need to know how and when the robots will go wrong, not necessarily how to build and fix them.

The machines and tools of the near future will be based on complicated mathematics, precise engineering and algorithmic learning whereby the code rewrites and adapts itself over time. We should not fool ourselves that all of this could or should be forced into the school day. Indeed,

something more basic might be better. Education should perhaps be driven by more elementary questions. What do we mean by a problems lend themselves to algorithmic solutions and which ones don't?

Many explanations of robotics focus on the similarities between organic systems and robots – but this approach fails to recognise that we as humans have a far better understanding of how robots work than how we work ourselves. AI almost by definition must take a computational approach to the world – and we should also teach pupils when to leave the computation to the computers.

THE HUNT FOR AI – BBC.

The "innovation foundation" Nesta identifies "creativity, dexterity and social intelligence" as three key areas where automation is struggling to make inroads. In the future, society will need human beings with these key skills and ones like them that cannot be automated. Although a robot may be able to far surpass the diagnostic skills of a trained doctor, it is far more difficult to automate the bedside manner of an excellent nurse.

robot? What do we mean by artificial intelligence? What sorts of

BEING HUMAN

It is normal to be concerned about technological changes you don't comprehend. What worries me the most is when the general population leaps to the wrong conclusion – having a higher level of computing skills will not better prepare kids for an automation future.

Robots aren't necessarily going to take your job, they are going to make you better at your job, allowing you to focus on the things that you have been specially evolved to be good at. AI is exceptional at many of the things humans are terrible at: performing repetitive, monotonous tasks; concentrating for long periods of time, and quickly searching vast databases of information. Automating tasks like these should be welcomed.

What we need globally is a population that is ready for the robotic revolution, ready to be a part of it, ready to be complemented by automated assistance. Part of being ready to work alongside machines is going to be learning how to be better at being human.

LAKSHMI PRIYA S/II YEAR ICE

7 Critical Skills For the Jobs of the Future

Critical Thinking and Problem Solving

Before you can solve a problem, you must be able to critically analyze and question what is causing it. This is why critical thinking and problem solving are coupled together.

Collaboration Across Networks and Leading by Influence

We should see an increasing focus on global online collaboration, where "digital tools are used to support interactions around curricular objectives and promote intercultural understanding."

Leadership among a team is no longer about commanding with top-down authority, but rather about leading by influence.

Agility and Adaptability

The impact of technology has meant we have to be agile and adaptive to unpredictable consequences of disruption.

Initiative and Entrepreneurship

Initiative has been something students show apart from regular work. For most students, developing a sense of initiative and entrepreneurial skills has often been part of their extracurricular activities.

Effective Oral and Written Communication

Clear communication isn't just a matter of proper use of language communicating clearly is an extension of thinking clearly. Can you promote yourself or a product? It is a success of effective communication

Assessing and Analyzing Information

Our access to information has dramatically increased, so it cause the access to misinformation too While navigating the digital world, very few have been taught how to assess the source and evaluate the content of the information and as we update our knowledge base faster than ever before.

Curiosity and Imagination

Curiosity is a powerful driver of new knowledge and innovation. "Imagination is more important than knowledge."

We consistently spoon-feed students with information instead of empowering them to ask questions and seek answers. Inquisitiveness and thinking outside the box

SUBBIAH SRINIVASAN G/III YEAR ICE

Top 10 Health Challenge Tips

1. **This is an Individual Journey**
Stop comparing - eyes on your own journey.

2. **Slip Ups are OK**
You will learn more from slip-ups than from being perfect.

3. **It's a Road Trip**
The more stops you take, the longer it will take to get there. You'll still get there!

4. **Be Patient**
We want immediate gratification, but your body doesn't work that way. Give it time!

5. **Start Small**
Don't try to change too much at once.

6. **Work with a Coach or Group**
There's strength in numbers! Get some support for your journey.

7. **Food Prep**
Prep for success and to reduce poor decision-making.

8. **Keep things Simple**
One pot meals, crockpots are all great to save time.

9. **Keep a Daily Log**
Tracking your mood, energy and what you eat will certainly give you insights you might not have noticed.

10. **Find a Mantra**
What the mind can conceive and you can believe, you can achieve.

ARTS CORNER!!!

HARINI R.M/II YEAR ICE

HARINI R.M/II YEAR ICE

PHOTOGRAPHY!!!

Brought to you by the Public Relations team of The department of Instrumentation and Control Engineering, Saranathan College of Engineering, Trichy. Post your valuable feedback to ice.prteam@gmail.com