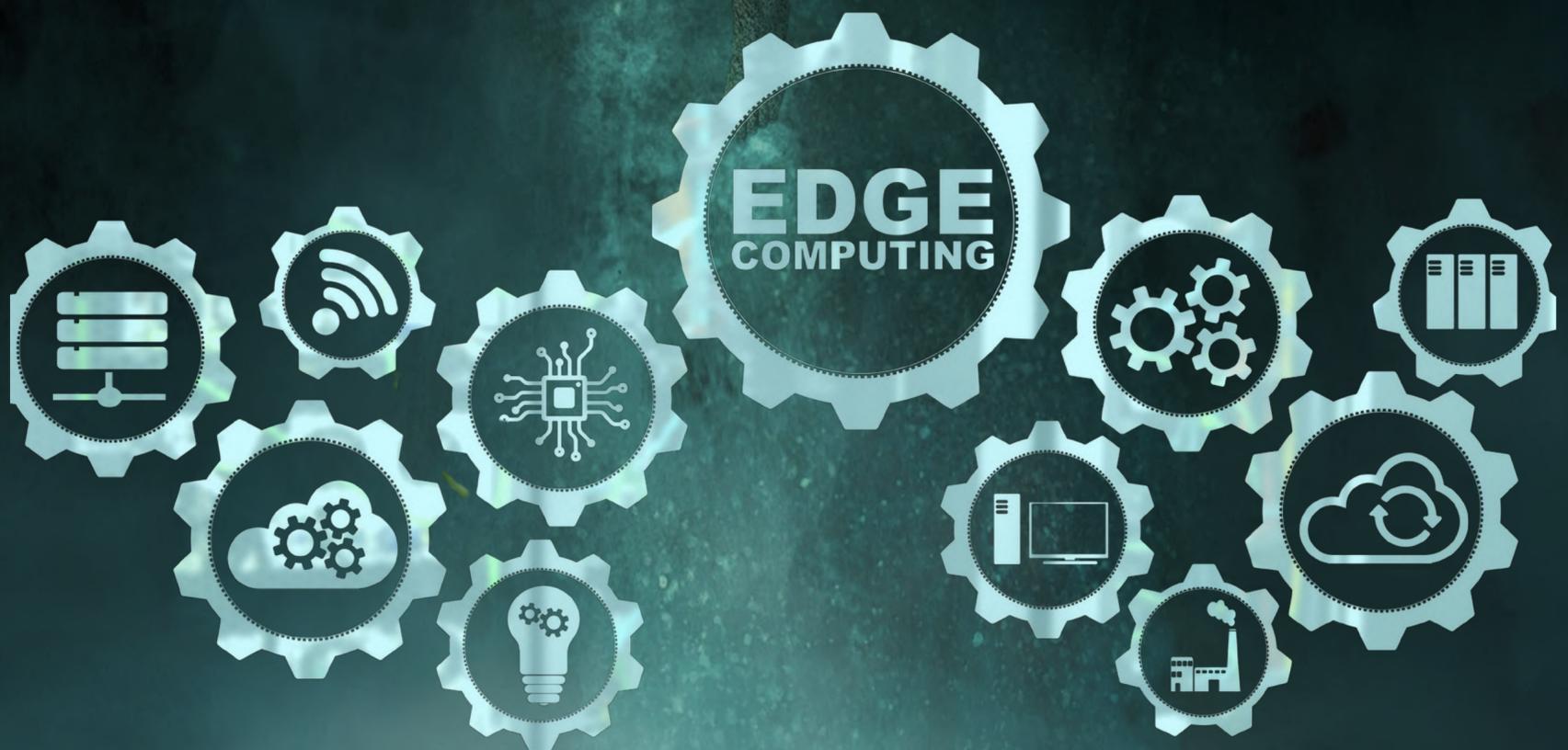


Vol 8 | Issue 2 | Jan 2023

MECHZINE

GET TO KNOW THE WORLD



A STUDENT
INITIATIVE
TECHNICAL MAGZINE



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NAVIGATING THE GATEWAY: A TALE OF U.S. IMMIGRATION AND ALUMNI INSIGHTS

- Meghana Bindela
HR Recruiter, HighCloud Solutions



As alumni reflecting on our journey through the intricate landscape of U.S. immigration, we recognize the pivotal role played by the now-evolved Immigration and Naturalization Service (INS), which birthed stalwart bureaus like the U.S. Citizenship and Immigration Services (USCIS) and the Department of Homeland Security (DHS).

USCIS: Crafting Pathways to the American Dream USCIS serves as the beacon for those weaving dreams into the American fabric, handling immigration processing and citizenship services, including visas like H1B, L1, F1, and B1 extensions, leading to employment authorization and eventual citizenship.

DHS: A Vigilant Guardian DHS collaborates with USCIS, ensuring the authenticity of individuals and playing a critical role in border and enforcement activities once overseen by the INS.

Diverse Visas: Opening Portals to Opportunities Various visas, from F1 for students to H1B for professionals, and L1 for intra-company transferees, offer diverse pathways for international individuals and their families.

Green Cards: A Symphony of Independence The Green Card, leading to lawful permanent residency and eventual citizenship, orchestrates a symphony of independence, enabling travel, employment, and integration into American society.

Navigating Tax Terrain: A Responsibility Understanding tax obligations is vital, with complexities ranging from federal to state-specific nuances, which form the fiscal foundation sustaining the nation's infrastructure.

Encouragement for Future Trailblazers We encourage future immigrants to embark on this odyssey with sagacity, grounding decisions in understanding, seeking guidance when needed, and balancing opportunities with responsibilities for successful immigration and integration into the American landscape.



IMMORTAL EMOTIONS

- **BOBBY BINDELA**
Y20ME014

-WHAT YOU ARE SAYING NOW HAS ALREADY BEEN SAID BY SOMEONE ELSE...

Virtual reality (VR) ,the technology which is being taking away the humans into their fascinating world. But what actually this VR is ?

Simply VR is a technology which would be a computer generated environment with scenes in the display which seems to be real and user will float into the magical world with the sounds addition to it.

wait..! only scenes and sounds ? not really, recently a company called OVR has developed a technology for virtual reality called INHALE .In this there is a cartridge which snaps onto a headset(VR) and fits over nose and inner part of this contains the vials of scents which are manufactured in the OVR lab .

Smell-O-Vision , a Hollywood attempt did from late 1950-early 1960 aimed to incorporate scent into movies . Yes..! they made a machine which pumps the smell in to the theaters according to the scenes in the movie however it didnt worked well.

Wow isn't fascinating that you started even to get smell of a perfume, while watching a perfume advertisement , when you feel the aroma of nice recipe, won't it will be fully satisfying treat of watching your fascinating movie even with smell. All the above attempts were made to achieve these but resulted unsatisfaction because of their methods effectiveness ,precision and accuracy and its limitation to over a limited range of smells/odours . This is mainly due to there method of mixing a few scents or solutions in different combinations to achieve there expected smell.

But will there be any chance to achieve this much effectively?

How about making the smell in another way? is it possible without mixing the solutions?

“Every thing is linked to one another in this world ,if one side of the link is held by one and another side will be definitely by something else” yes it is possible there is another way for creating the smell.

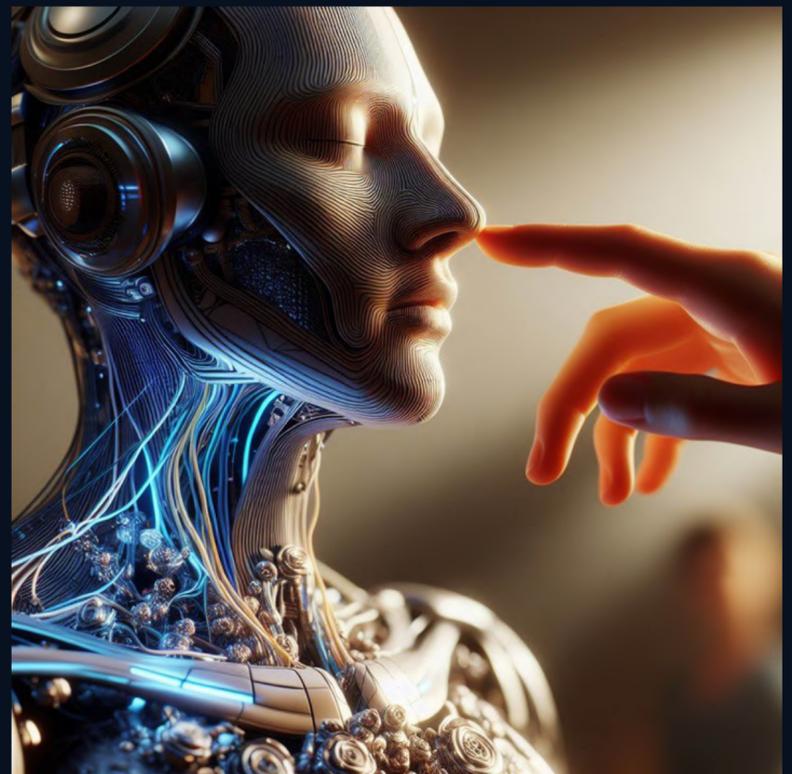


VIBRATIONS, vibrating molecules making it possible. “Molecular vibrations, rather than molecular shape, give substances their distinct smell” according to a new study by UCL scientists. In a study to find out how smell is written into a molecule's structure, scientists tested whether changing how a molecule vibrates on a nano-scale changes its smell for this they used musk molecule. Molecules are made of atoms connected by bonds and arrangement of bonds and atoms define the vibration of the molecule. So scientists could identify molecules by their vibrations by a spectroscope .Musk molecule which is generally useful for aeromatics or purfumery is taken for the experiment and replaced the hydrogen atoms with the heavier isotope deuterium in the molecule. This exchange doubles the hydrogen atoms' mass, alters the molecule's molecular vibrations, but remains the shape of the molecule unchanged.

STUDENT ARTICLE

The study shows that the musk molecules with deuterium, smell different to the hydrogen musk molecules, indicating that a molecule's molecular vibrations determine its smell. The study is published in a journal called PLOS ONE. The study suggests that receptors in our nose are capable to detect a nano-scale quantum mechanism called "inelastic electron tunnelling" to identify molecular vibrations. The idea was born in 1996 itself at UCL, physicists confirmed the mechanism worked in theory but they felt outlandish at that time.

Dr Luca Turin, former UCL lecturer and now at Alexander Fleming Biomedical Sciences Research Center in Athens, Greece, and author of the study said: "Smell is the least understood of our senses" Since a great time chemists have believed that the characteristic smell of a molecule was written in its shape. They felt that these receptors in the nose also would identify the shape just like the other receptors do in other parts of our body. There appears to be no connection between molecular shape and smell. For example The scientists making new fragrance cannot predict the smell of a molecule before it is made, and makes thousands of molecules before it hits the right one. Mr Simon Gane, a co-author of the study from the London Centre for Nanotechnology (LCN) and a surgeon at the UCL Ear Institute, said: "Changing the mass of some atoms inside certain molecules can affect the way they smell to humans, even though that does not change their shape in a large way. This is difficult to explain without the VIBRATIONAL THEORY. " Now a days technology and the people are running towards the A I , so why should we look into it and what we can do with it ???



Recording the data of the molecular vibrations at the nano level of the respective fragrances, along with capturing of video and audio and by using this data if we could impose this knowledge on the super solution/ medium (if possible with air). We could produce an efficient fragrance system to our home , office or even in our hands too in the future and can extending it towards like:

- 1) This could also help in detecting toxic gases and smoke in both residential as well as in other remotely.
- 2) A television that could produce smell along with sound
- 3) A new output from the PCs and mobiles isn't so fascinating....!
- 4) This is a CALL FOR THE NEW ERA where you could see ,listen and even feel the fragrance of your loved one.

.....And the only thing you can do is to just add your extension to it

Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand.

- ALBERT EINSTEIN

THE RISE OF REMOTE LEARNING: NAVIGATING CHALLENGES, EMBRACING OPPORTUNITIES

- Dr.B.Ram Gopal Reddy
Professor



Challenges in Transition

The abrupt shift to remote learning presented educators with the daunting task of adapting teaching methodologies to online platforms. Students grappled with the loss of in-person interaction, leading to feelings of isolation. Disparities in technology access widened the digital divide, impacting marginalized communities disproportionately.

Blurred boundaries between home and school added to the challenge, impeding student focus amidst distractions.

Opportunities for Innovation

Remote learning sparked innovation, breaking down geographical barriers and enabling collaboration among diverse groups.

Students embraced self-directed learning, exploring topics beyond the curriculum. Guest lectures reached wider audiences, fostering global academic exchange.

Navigating the Future

As education evolves post-pandemic, addressing disparities exacerbated by remote learning is imperative. Embracing technology, educators, students, and institutions can create inclusive learning environments.

In summary, remote learning has transformed education, presenting both challenges and opportunities. By leveraging technology, we can forge a future of accessible, engaging, and equitable education worldwide.

REVOLUTIONIZING THE MECHANICAL SECTOR: THE SYNERGY OF EDGE AND CLOUD COMPUTING



-SANJEEVA RAO

Y20ME019

In the dynamic landscape of the mechanical sector, the convergence of edge and cloud computing is revolutionizing engineering and manufacturing processes. This integration signifies a profound shift towards heightened efficiency, real-time responsiveness, and collaborative innovation.



Cloud Computing: Serving as the backbone of the mechanical industry, cloud platforms offer centralized storage for efficient data management. Advanced analytics and machine learning services empower engineers to extract valuable insights, predict maintenance needs, and optimize performance.



Edge Computing: Positioned proximate to mechanical devices, edge computing enables real-time processing, crucial for applications like robotics and control systems. It minimizes latency and optimizes bandwidth, vital in scenarios with limited connectivity. Embedded security measures ensure data integrity, facilitating on-the-fly decision-making as mechanical systems become more autonomous.

FACULTY ARTICLE

THE FUTURE OF WORK: HOW AUTOMATION IS SHAPING CAREER PATHS



- Dr.N.Govind

Associate Professor



The modern workforce is undergoing a seismic shift, driven by the relentless march of automation. From assembly lines to boardrooms, no sector is immune to its transformative power. While concerns about job displacement loom large, the reality is a nuanced interplay of challenges and opportunities.

Automation streamlines processes, boosting efficiency and precision, yet it also demands a workforce adept at navigating this new terrain. Traditional job roles are evolving, creating a demand for skills in technology, data analysis, and innovation. Proficiency in coding, machine learning, and AI has become a passport to the future job market.

However, amidst the whirlwind of technological advancement, the human touch remains irreplaceable. Traits like empathy, creativity, and critical thinking defy automation, anchoring the workforce in its humanity. Balancing technical acumen with these soft skills is imperative for success in the automation era.

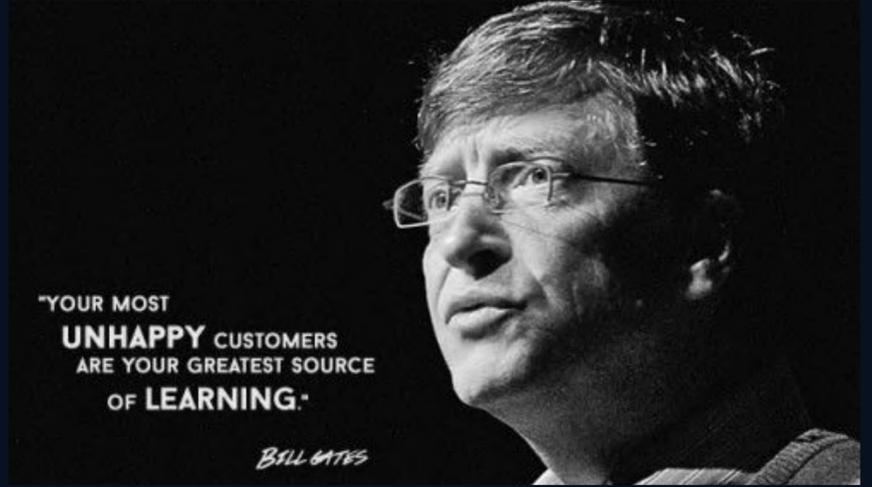
To prepare for this evolving landscape, college students must cultivate adaptability and resilience. Seek out internships, embrace interdisciplinary projects, and foster connections across industries. The future belongs to those who embrace change, armed with a blend of technical prowess and human empathy.

In conclusion, the automation revolution is not a threat but a beacon of opportunity. As college students, we stand poised at the frontier of this new era. Let us seize the moment, charting our course with courage and innovation as we navigate the winds of change.





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THE SHORTEST WAR IN HISTORY LASTED ONLY 38-45 MINUTES. IT OCCURRED BETWEEN BRITAIN AND ZANZIBAR ON AUGUST 27, 1896.

THE GREAT WALL OF CHINA IS NOT VISIBLE FROM THE MOON WITH THE NAKED EYE. ASTRONAUTS HAVE DEBUNKED THIS MYTH. HOWEVER, IT IS VISIBLE FROM LOW EARTH ORBIT.

FIND

THE TWO DOORS: YOU ARE IN A ROOM WITH TWO DOORS. ONE DOOR LEADS TO CERTAIN DEATH, AND THE OTHER DOOR LEADS TO FREEDOM. THERE ARE TWO GUARDS, ONE IN FRONT OF EACH DOOR. ONE GUARD ALWAYS TELLS THE TRUTH, AND THE OTHER ALWAYS LIES. YOU DON'T KNOW WHICH GUARD IS WHICH, AND YOU DON'T KNOW WHICH DOOR IS WHICH. YOU CAN ASK ONE YES-OR-NO QUESTION TO ONE OF THE GUARDS. WHAT QUESTION DO YOU ASK TO GUARANTEE YOUR FREEDOM?

KNOW A GADGET

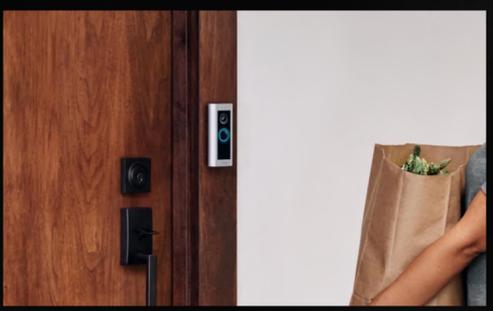
RING VIDEO DOORBELL PRO 2

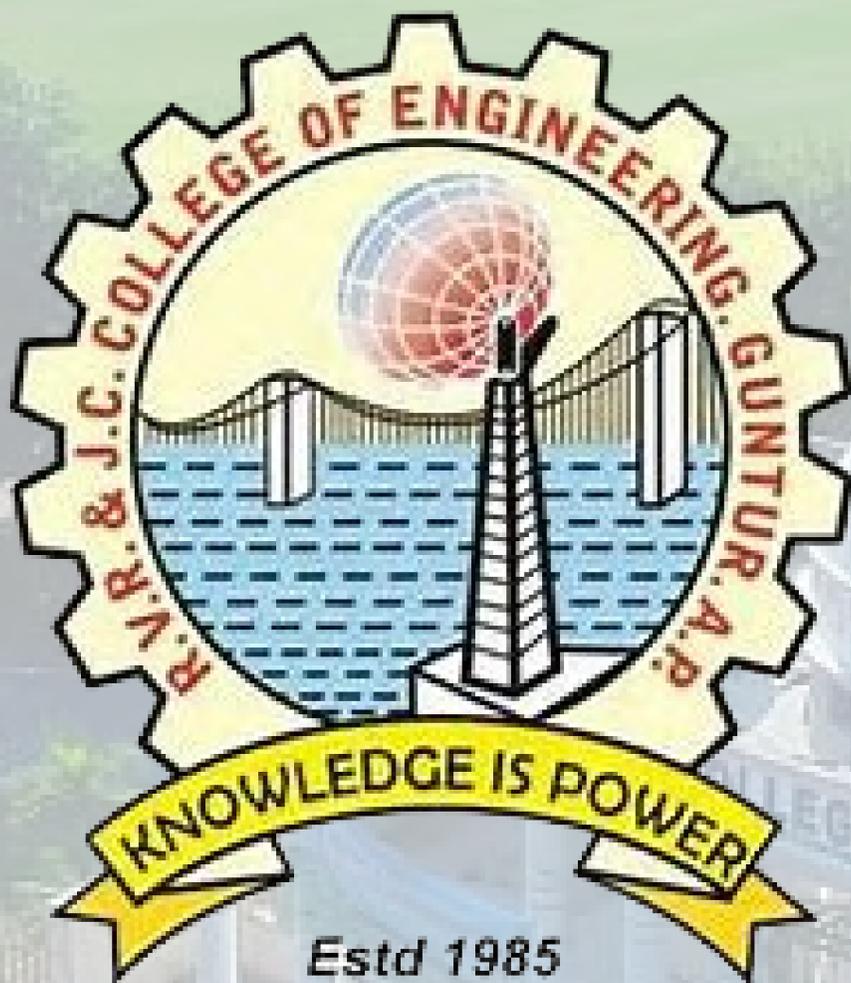
THE RING VIDEO DOORBELL PRO 2 MADE OUR LIST OF THE BEST TECH GADGETS FOR 2021 BECAUSE IT'S LIKE HAVING YOUR OWN DOORMAN



IT GIVES YOU A TOP-TO-BOTTOM VIEW OF VISITORS WITH HEAD TO TOE HD VIDEO.

IT ALSO PINPOINTS MOVEMENT THANKS TO THE 3D MOTION DETECTION TECHNOLOGY. AND WITH ALEXA GREETINGS, ALEXA CAN EVEN TALK TO VISITORS AND ACCEPT DELIVERIES FOR YOU.





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