

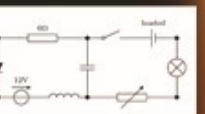
B-SMART

EDC

ALGOL
C++
PEARL
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INCUBATION CENTRE

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IoT

We Explore We Exhibit



ame to Fame
ackathon Stories
echnical Trends

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B-SMART

(**B**VRITian **S**tudent **M**agazine on **A**dvanced
Research & **T**echnologies)



VISION

To emerge as the best among the institutes of technology and research in the country dedicated to the cause of promoting quality technical education.

MISSION

Empowerment of women engineers and technocrats with emphasis on academic excellence, life skills and human values.

B-SMART is here to keep the students and the faculty members informed with the latest development in the area of science, engineering & technology. It also inculcates the habit of reading among students about new trends in technology and emerging areas and to provide a platform to the student for sharing knowledge.

Principal's Message



**Dr.K. V. N. Sunitha,
Principal, BVRITH**

***“Learning is not attained by chance,
it must be sought for with ardor and attended to with diligence”***

- Abigail Adams

Learning, when gets applied for social welfare, serves the purpose of Engineering. BSMART is a platform where all such activities which our students are indulged into, are showcased. Welcome all readers to the 9th Edition of BSMART, the Technical Magazine of BVRITH.

Our students are always eager to observe the advancements in the technical field. Many of them very enthusiastically contribute to this technical magazine. As an initiate to appreciate this spirit, we have decided to announce prize for the article which stood front in terms of innovation, freshness in idea and student contribution. From last issue's selected articles, with the help of expert faculty, it is decided to announce 'Sania Thahaseen' of 3rd year CSE as the 'best contributor' for the article 'KEY-X - Smart Keyboard for People with Disabilities'. Congratulations to Sania... It is to mention that Sania has contributed to all the editions of BSMART.

We are very proud to present our Alumni, Ms.NagaYamini, who at present works in Qualcomm Inc. as the 'Name to Fame' face this time. She had contributed in different fields in her student life and continues to do so even after that. Number of 'Cover stories' which narrate the success stories of our students in technical competitions, have outnumbered all the previous issues this time. This time, the 'Technical Trends' which showcases the technical advancements, welcome articles from the faculty members also.

I congratulate the faculty and students who contributed articles and furthermore the faculty and student organizers who worked enthusiastically for the magazine.

**With BestWishes
Dr. K.V.N. Sunitha
Principal**

Contents

	Page number
NAME TO FAME	1-2
COVER STORY-1	3
COVER STORY-2	4
COVER STORY-3	5
COVER STORY-4	6
COVER STORY-5	7
COVER STORY-6	8
COVER STORY-7	9
TECHNICAL TRENDS	
SERENDIPITY- ALL CANCER CURE	11
GARTNER'S 2020 MAGIC QUADRANT FOR DATA SCIENCE	12
TEN BREAKTROUGH TECHNOLOGIES OF 2020	13-14
ARTIFICIAL INTELLIGENCE IN HEALTHCARE INDUSTRY IN INDIA	15-16

HACKATHONS-ACCELERATING INNOVATIONS	17
APPLE PENCIL	18
ESIM	18-19
PHANTOM VIBRATION SYNDROME	19
TESLASUIT GLOVE	20
NANO1	20-21
ROBOT DEXTERITY	21
SWARM ROBOTS	21-22
SMART FIRMER	22
DIGITAL TWINS	22-23
HAPTIC TECHNOLOGY	23
A SMART MIRROR THAT CAN MAKE PHONE CALLS	24
ULTRASONIC GRIPPER	24
SOLAR MOBILE CHARGER	25
2020 : THE DARQ AGE	25-26
HYPERLOOP TECHNOLOGY	26

HTC's 2020 STRATEGY FOCUSES ON VIRTUAL REALITY, NOT SMARTPHONES	27
SMART WASTE SEGREGATION WITH THE TRASH BOT	27-28
BIO ROBOTIC HEART	28
ROBOTIC PROCESS AUTOMATION(RPA)	28-29
FOURTH GENERATION PROGRAMMING LANGUAGE WORKSHOP	29-30
DRONE WORKSHOP	30
3D PRINTING OF ORGANS COULD MAKE ORGAN DONATION OBSOLETE	30-31
CYBERWARE	31-32
DISTRIBUTED LEDGER TECHNOLOGY	32

‘Name to Fame’



An Outstanding Performer and Achiever-

Anche Naga Yamini is an outstanding performer and achiever who has many feathers in her cap. She has consistently made the college proud with her multiple achievements. She is a source of inspiration to all her juniors. She completed her 10th standard from Brahmam Talent High School where she received the Young Achiever Award and Intermediate from Sri Gayatri Junior College. She pursued her B.Tech ECE at BVRIT HYDERABAD College of Engineering for Women and is the Topper of the College for the batch 2015-19 with an aggregate of 84% and received Two Gold Medals for being the College Topper as well

as the Department Topper on Graduation Day.

She achieved Distinction in the Business English Certification Preliminary Examination conducted by University of Cambridge. She won 1st Prize in a 24 Hour Hackathon conducted at BVRIT Hyderabad, her project '*SUVIDHA*' has been selected for Regional Convention of AICTE-ISTE-ECI Chattra Vishwakarma Awards 2018. She won 4th prize in Buoyancy Innovation Challenge 2018 for the project Medicine Dispenser. She has been awarded 'Constant Contributor of the Year' 2017-18 from WITH YOU Organization. She has worked as the Coordinator in the Women

“Some people dream of success while others wake up and work.”

Empowerment Division in an NGO named Street Cause during 2016-17. She received the Young Promising Engineer Award 2019 from the department of ECE, BVRITH and she has received Under 25 Award from the category of Academic Excellence which was awarded to 25 people who are under 25 who had achieved various milestones. She has recently qualified the GATE 2019 Exam. She is currently working as an Associate Engineer at Qualcomm Inc.

We wish her ‘All the Very Best’ in her future endeavours.



“When the going gets tough, the tough get going.”

COVER STORIES

COVER STORY – 1

Third prize winner of ‘V-Enable’, a 36 hour hackathon conducted by JHUB held in BVRIT Hyderabad College of engineering for Women. This Team of III EEE students stood first among 37 teams.



Title :

SMART SHOES

Team members:

Harika Savitry
Sai Soumya Kamadri
Yamini Egala
Md.sameera
(EEE 3rd year)

Mentor :

Mr G.Sandeep
Assoc.Professor,
EEE Dept

We, the students of BVRIT HYDERBAD, participated in J-Hub hackathon at BVRIT HYDERABAD. This was a wonderful opportunity for us to present our idea. Total 37 teams participated in the event and we were one among them. On the first day of hackathon we presented our idea, shared our thoughts and got through the level one. Later we started working on our prototype, in between few faculty and students came to us and we explained them about our project, later they raised few questions which helped us in making our project more unique and successful. On the second day, we interacted with teams from various colleges and in the afternoon we had evaluation with juries which happened to be two rounds. In the evening the results were announced and we stood in the third position. We were happy to take part and win in such a challenging platform. We would like to thank our mentor Mr G.Sandeep and Dr. Chava Sunil Kumar HOD of EEE department for motivating and helping us to take part in this hackathon.

Our idea is “Smart Shoes for Visually Challenged”. It is for the blind people. In this shoe, we added few features like object indicator, weather indicator, solar cells, low battery indicator, night alert system that would be really helpful for them. This shoe is very cost effective and all the equipment is kept in the shoe heel and is highly protected and it is of water proof.

“Education is what survives when what has been learned has been forgotten.”

COVER STORY – 2

Fourth prize winner of J-HUB hackathon at CVR College of Engineering. This Team stood first among 129 teams.



Title :

AGRICITEASE

Team Members:

K.Sai Manasa

N.Sai Snusha

T.Roshini

(ECE 2nd Year)

Mentor:

**Mr.R.Priyakanth,
AssociateProfessor,
ECE Dept**

We, ECE II-year students of BVRIT HYDERABAD, participated in J-HUB hackathon at CVR College of Engineering. It was one of the best opportunities to exhibit our idea on a challenging platform. On the first day of hackathon we have explained our idea to one of the evaluators and they were impressed about the idea and also gave few suggestions to implement further. Meanwhile in the night we have completed the entire app. The next day around 3:00 pm we had evaluation with the juries and presented the output of our web application and out of 149 teams we were awarded the consolation prize(4th place).

Our project "AGRICITEASE" is an all-inclusive digital platform designed to assist farmers in selling their products. The new move will eliminate the need for farmers to sell their products through retailers that will escalate in farmer's profits. Here we used Django (web framework),HTML and CSS for designing the web application.In our project we even assist farmers about the present statistics of the crops. We have a special feature called representative on behalf of the illiterate farmers.A farmer need to upload his farm details in the website, which are displayed to the consumer dynamically. The representative gets his earnings since he can gain 2-5% share on each successful deals.We provide various filters for the easy view of consumers.

“It is the mark of an educated mind to be able to entertain a thought without accepting it.”

COVER STORY -3

Second prize winner of SMART- A- THON of Medhanvesh at BVRIT Hyderabad College of Engineering for Women. This Team stood second in that hackathon.



Title :

Certificate Issue Using Blockchain

Team Members:

**Arepalli Sindhura,
M.Gayatri
CSE 3rd Year**

Mentor:

**Chandrasekhar Uddagiri
Associate Professor,
CSE Dept.**

As a part of the learning process, we took guidance from our seniors who were working on blockchain. Under the guidance of U. Chandrasekhar sir, we started understanding more about blockchain. We have decided to do this project named ‘Certificates issue using blockchain’. We spent a lot of time thinking about a good idea for a project which is unique and is very much in need. Meanwhile, a 24-hour inter-college hackathon named Smart-O-thon was announced in our college as a part of the national fest Medhanvesh that was held at our college. We decided to work on the project during the 24-hour hackathon and registered for it. On the 1st day of the hackathon, we started working on our project from scratch. There were several other participants and most of them were doing projects on machine learning. Although, we were a little nervous at the beginning seeing everyone choosing a different technology, we were very confident on our idea. The main idea was to provide a website for colleges wherein students can claim their certificates online. Every time a student logs into their account and claims their certificates, their very own blockchain id is displayed confirming that the respective student claimed the certificate. This removes any possibility of the certificates being taken by a wrong person. Any person who claims that they haven’t received their certificate can go to the website and check who took their certificate. This was the whole idea of the project.

“Success is not in what you have, but who you are.”

COVER STORY-4

Third prize winner of a 36hr hackathon organised at Vidya Jyothi Institute of Technology by J-HUB, Hyderabad.

Title:

Energy conservation using solar panels and data monitoring



Team Members:

D. Bala Maria Thanuja reddy

Alle Ganga Pravalika

G. Bhavana reddy

B. Pujitha
(EEE 3rd year)

Mentor:

Mr. Ch.Santhosh kumar
Asst.professor ,EEE Dept

We, the EEE students of BVRIT Hyderabad collage of engineering for women, participated in J-HUB Hackathon at VIDYA JYOTHI INSTITUTE OF TECHNOLOGY (VJIT). It was a wonderful opportunity to present our idea on a challenging platform. On the first day of hackathon we come up with idea according to the domain and discussed among my team members and went through all the pros and cons . We then come up with a solution and started working on it. We also had entertainment along with knowledge sharing. And we felt that is best place to share our thoughts and ideas and also met different people with different ideas. It is such a good platform where we can get number of solutions for a single problem from different minds and technologies. The juries went through our ideas and got suggestions from them.

Our idea is about “Energy conservation using solar panel and Data monitoring”. Now a days we require huge amount of power without which our lives are impossible. The power generated in India per year is 368.89GW. However, we cannot stop the generation and utilization of power, but instead we can conserve it by using renewable energy sources and we used solar panels. And also we made a data logger which is useful to know the amount of energy consumed and generated at every point of time. So that the user can limit the use of power by accessing it through portal.

“Always be yourself, express yourself, have faith in yourself, do not go out and look for a successful personality and duplicate it.”

COVER STORY-5

**"Esteemed speaker award"
in GHCI conference, 2019.**

Title:

**Soil Nutrient Survey and
Google map Cartography**

Team Members:

D.Neelima

K.Bhavya Sri

M.S.S.Harshitha

(ECE 3rd year)

Mentor:

Mr.N.M.Sai Krishna Kumar

Asst.Professor,ECE Dept.



We have always had the interest in publishing technical papers and attending national and international conferences. Hopefully, we had got a wonderful opportunity of presenting the paper titled "Soil Nutrient Survey and Google Map Cartography" in the GHCI conference, 2019. The Grace Hopper Celebration India is Asia's largest gathering of women technologists. It is produced by AnitaB.org and presented in partnership with ACM India. Firstly, they have shortlisted a few applications in which we were also one of them. Then there were a series of web meetings where mentors were assigned to each team. The mentors took the dry run on web and helped us improve in our presentation and made us ready for the D-Day. It was a 3 day conference attended by more than 6 lakh delegates and students and entrepreneurs. It was held from 6-8 of November, on 6th we had our presentation. Our project describes a method of soil testing which amount of NPK ,PH, Electrical Conductivity and Moisture content in the soil and maps them against the Google map so to display the values just by clicking at a desired location It was a very wonderful experience and we had a lot of exposure to trending technologies. There were also student career booths which helped us in reaching out to many companies. We also won the "Esteemed speaker award" for our work.

COVER STORY-6

Special award for Geek Diva Hackathon Organized by GJK Technologies

Title:

Stand Up For Women's Safety

Team Members:

**M.Shravani
A.Sai Santhoshi
M.Sai Laya
T.Laxmi
(IT 3rd year)**

**Mentor:
Mrs.M.L.Prasanthi ,
Assoc Professor IT Dept.**



Women are adept at mobilizing diverse groups for a common cause. They often work across ethnic, religious, political and cultural divides to promote peace. We are all aware of importance of women's safety, but we must realize that they should be properly protected. All women campaign that took off on twitter recently was an important reminder about how women are, still in this day and age, being subjected to violence and domestic abuse.

Problems may come from any direction such as women walking on the road after work, going to super market or many other reasons for which they go alone. People at home are not sure of their return safely. In order to overcome such problems faced by women, the mobile bared application is not only necessary to use but also plays a pivotal role with android software. This app let the user send a text alert or call with a single touch in the event of emergency. When the alert button is activated precise GPS location to the nearest people in contact list, and live streaming will be sent to the nearest police station. Depending upon the situation action can be taken immediately.

"Success usually comes to those who are too busy to be looking for it."

COVER STORY - 7

Special appreciation prize for Best Idea and awarded with 25000 cash prize in GE Precision Health Care hackathon.



Title :

ANEEGO

Team Members:

**M.Sarica,
C.Jahnavi Sai Sirisha,
N.Sai Chandana
M.Sai Preethi
(ECE – III Year)**

Mentor :

**Mr.N.M.Sai Krishna Kumar
Asst.Professor,
ECE Dept**

**R.Priyakanth,
Associate.Professor,
ECE Dept**

Hi, I'm Sarica from III ECE 'A'. We are a team of 4 members(N.Sai Chandana, C. Jahnavi Sai Sirisha, M. Sai Preethi) participating in many 24 and 36 hour hackathons since our 4th semester started under our mentors N. M. Sai Krishna Sir and R. Priyakanth Sir guidance and created many memories in addition to lots of useful experience. But, this time in GE Health care, we had a fantabulous time participating in hackathon outside our state. It was conducted in the GE Health Care office at Bangalore. It was a 24 hour hackathon where the ambience, hygiene, food, hospitality and the support was extremely good. So, it was a 2 day hackathon wherein we explained our idea to the jury on the first day and we worked completing our project in the available time during that night. The next day we presented our idea, work to the jury and they were quite impressed on how this project would bring change in the society when it turns out to be a product. It is called "ANEGOO" which means 'anaemia go...'. It's basically a non-invasive approach of haemoglobin measurement making the service available to every person living in any remote area, at any instant of time, giving results within seconds with less cost compared to invasive methods and with good accuracy. The proud part was we were one among the two teams participated from our state, while rest all of the 36 teams were from IITs and NITs all over our country. We were presented a special prize of 25,000 Rs for the best idea presented and this boosted our confidence about what impact it had and would serve the society. We're now developing it further and expecting it to get completed soon.

"Opportunities don't happen. You create them."



BVRIT HYDERABAD
College of Engineering for Women
Nizampet Road, Raju Gandhi Nagar, Bachupally, Hyderabad - 500090, Telangana
(MBA Accredited - EEE, ECE, CSE & IT)

Medhanvesh-2019
A National Level Students' Tech Fest
3rd & 4th October, 2019

EVENTS :

Smart-O-Thon		Mileu-A-Thon	
Technical Domains	Functional Domains	Technical Domains	Functional Domains
AI ML Cyber Security Analytics Blockchain	Security Entertainment Manufacturing Citizen Services Smart Homes	IoT Embedded Systems Industrial IoT Robotics	Assistive Technology Industrial Automation Energy Management Rural Development
Coding Contest		Vikrantapali	
Smart Idea Challenge			

Convener :
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Visit: www.bvrithyderabad.edu.in/medhanvesh2019

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MEDHANVESH-2019

TECHNICAL TRENDS

Serendipity-All CancerCure

‘A newly-discovered part of our immune system could be harnessed to treat all cancers’, say scientists

Marking a breakthrough in cancer treatment, a new type of immune cell that kills most cancers was discovered by researchers at Cardiff University’s School of Medicine. The team has [published their findings](#) in the journal - Nature Immunology. The accidental discovery was made when the scientists were analysing blood samples for immune cells that could fight bacteria. They instead discovered the T-cell, a never-before-seen receptor that only latches on to cancerous cells, ignoring healthy ones. The lead author of the study and Cardiff expert, Professor Andrew Sewell, called the discovery “highly unusual” and indicated that it could be developed into a universal, broad-based therapy.



“This was a serendipitous finding, nobody knew this cell existed,” Sewell told. The discovery is special as the cell was found to work on most human cancers, such as including lung, skin, blood, colon, breast, bone, prostate, ovarian, kidney and cervical cancer – something no present therapies (CAR-T and TCR-T) can claim,

the paper reported. Also, Sewell did not dismiss the idea that lots of people could have the cancer-immune cells or that most people have the cell, but the “receptor has not activated yet”.

How does it work?

The T-cell attaches to the MR1 molecule on cancer cells. This molecule does not vary in humans, thus allowing the treatment to work across cancer types. Since the treatment can be shared between people, the possibility of banks for the immune cells could be created in the future. Testing on mice, so far, have yielded encouraging results, and Sewell added that the ‘right people’ are interested in developing the new therapy, which means progress would be “quite fast”. They expect human trials on terminally ill patients as early as November 2020, once it passes laboratory safety testing.

A professor of immunology at the University of Manchester Daniel Davis, acknowledged it as an “exciting discovery for advancing basic knowledge about the immune system and for future new medicines”.



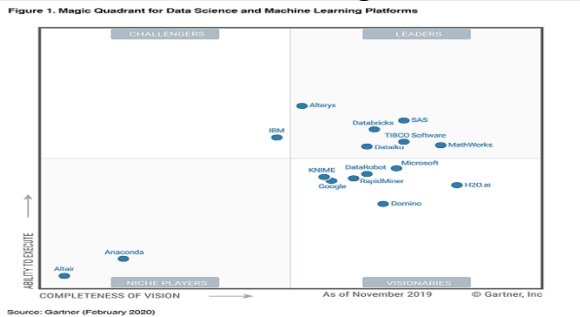
Dr.V.Madhavi,
Associate Professor of Chemistry

“Stop chasing the money and start chasing the passion.”

Gartner's 2020 Magic Quadrant for Data Science and Machine Learning Tools – check out the new Leaders!

Which Data Science or Machine Learning Tool is the Best?

We are living in the age of choices. The data revolution has transformed the way businesses run and customers behave. And we are most definitely spoilt for choice when it comes to data science and machine learning tools.



Where only SAS existed as the go-to tool for analytics once (it's still right up there as Gartner's Magic Quadrant will show), we now have so many other tools to work with now. One of the most thrilling releases in recent years is the automated machine learning slew of tools, such as Google Cloud Platform, Microsoft Azure ML, etc. These machine learning tools offer off-the-shelf solutions that a lot of data science projects can plug and play (assuming they have the right infrastructure in place, of course).

Which leads me to the million-dollar question – which data science or machine learning tool should you choose? Well, who else can best answer that question than Gartner?

Gartner releases its annual Magic Quadrant for 'Data Science and Machine Learning Tools' every February. Top tech behemoths and organizations across domains and industries look to this Magic Quadrant to understand which machine learning tool they should integrate into their processes.

Summary:

- SAS not only remains in the 'Leaders' section, but has improved its score on both the axes. RapidMiner moved from 'Leaders' quadrant to 'Visionaries' – now positioned close to DataRobot and KNIME
- Alteryx and Dataiku have moved from 'Challengers' to 'Leaders' – a huge leap for both companies
- IBM, in a bit of a surprise move, has gone from a 'Visionary' to a 'Challenger'
- For all the Python fans, Anaconda remains in the 'Niche Players' segment

Reference:

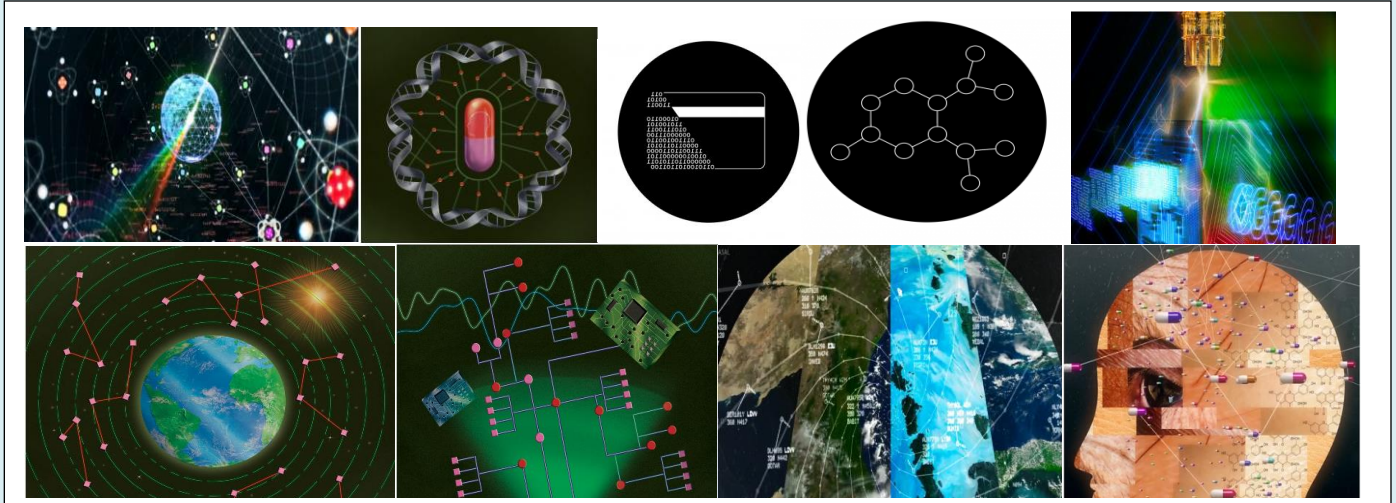
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Dr. Chandrasekhar Uddagiri
Associate Professor
Department of Computer Science and Engineering

**"The pessimist sees the difficulty in every opportunity.
The optimist sees the opportunity in every difficulty."**

Ten Breakthrough Technologies 2020



Unhackable Internet

An internet based on quantum physics will soon enable inherently secure communication. A network connecting four cities in Netherlands entirely by means of quantum technology is getting built. Messages sent over this network will be unhackable. The technology relies on a quantum behavior of atomic particles called entanglement. Entangled photons can't be covertly read without disrupting their content.

Hyper-personalized medicine

Personalised Genetic medicine tailored to a single patient gives a lot of hope for people whose ailments were previously incurable. If an extremely rare disease is caused by a specific DNA mistake, there is a chance for a genetic fix by using new classes of drugs that can be tailored to a person's genes. The new medicines might take the form of gene replacement, gene editing, or can be used as an antisense-a sort of molecular eraser, which erases or fixes erroneous genetic messages. These treatments can be programmed, in digital fashion and with digital speed, to correct or compensate for inherited diseases.

Digital money

China is poised to become the first major economy to issue a digital version of its money, which it intends as a replacement for physical cash. As the use of physical cash declines, so does the freedom to transact without an intermediary.

Anti-aging drugs

Research is on, on a new class of anti-aging drugs which aim to treat specific ailments by slowing or reversing a fundamental process of aging. The drugs are called senolytics- they work by removing certain cells that accumulate as we age. Known as "senescent" cells, they can create low-level inflammation that suppresses normal mechanisms of cellular repair and creates a toxic environment for neighboring cells. It is found effective in patients with severe osteoarthritis. It is expected to halt cognitive and functional decline in patients suffering from mild to moderate Alzheimer's disease.

AI-discovered molecules

Commercializing a new drug costs around \$2.5 billion on average. One reason for this, is the difficulty of finding promising molecules. Now Scientists use AI to discover promising drug-like compounds. Machine-learning tools can explore large databases of existing molecules and their properties and to generate new possibilities of developing potentially life-saving drugs. This could make it faster and cheaper to discover new drug candidates.

Satellite mega-constellations

Since the satellites have become smaller and their launching has become cheaper, tens of thousands of satellites can be affordably built, launched and

"The ways to get started is to quit talking and begin doing."

operated in orbit at once which can beam a broadband connection to internet terminals. As long as these terminals have a clear view of the sky, they can deliver internet to any nearby devices. Thousands of satellites working in tandem will supply internet access for even the poorest and most remote populations on the planet. The only fear here is that the world is woefully unprepared to manage this high orbital traffic. These systems can either blanket the globe with high-speed internet or turn Earth's orbit into a junk-ridden minefield.

Quantum supremacy

Google has provided the first clear proof of a quantum computer outperforming a classical one. Quantum computers store and process data in a way completely different from the normal ones. In theory, they are capable to tackle certain problems that even the most powerful classical supercomputer imaginable would take millennia to solve, like breaking today's cryptographic codes or simulating the precise behavior of molecules to help discover new drugs and materials. This quantum supremacy is demonstrated by using a computer with 53 qubits. Each additional qubit will make the computer twice as fast. The challenge now is to build machines with enough qubits to solve useful problems considering the fact that, the more qubits you have, the harder it is to maintain their delicate quantum state.

Tiny AI

Our mobiles no longer need to talk to the cloud to get benefited from the latest AI-driven features. AI, in the quest to build more powerful algorithms, uses greater amounts of data and computing power, and relying on centralized cloud services. This generates alarming amounts of carbon emissions and also limits the speed and privacy of AI applications. Now generation of specialized AI chips is emerging, to pack more computational power into tighter physical spaces, and train and run AI on far less energy. Google has already announced that it can now run Google Assistant on users' phones without sending requests to a remote server. As of iOS 13, Apple runs Siri's speech recognition capabilities and its QuickType keyboard locally on the iPhone. IBM and Amazon now also offer

developer platforms for making and deploying tiny AI. With this, existing services like voice assistants, autocorrect, and digital cameras will get better and faster without having to contact the cloud every time they need access to a deep-learning model..

Differential privacy

It is increasingly difficult for any Government body to secure the data it collects. A technique called differential privacy could solve that problem. The method involves injecting inaccuracies or 'noise' into the data, taking care that the data doesn't get polluted. The more noise is added, the harder it becomes to de-anonymize the data. Differential privacy is a mathematical technique that measures the privacy of a crucial data set when noise is added. The method is already used by Apple and Facebook to collect aggregate data without identifying particular users.

Climate change attribution

World Weather Attribution, had compared high-resolution computer simulations of worlds where climate change did and didn't occur, based on the lengthening record of detailed satellite data. It is found that, in the former, i.e., in the world we live in, the severe storm was as much as 2.6 times more likely—and up to 28% more intense. Scientists state with increasing statistical certainty that global warming is often fueling more dangerous weather events. By disentangling the role of climate change from other factors, the studies are telling us what kinds of risks we need to prepare for, including how much flooding to expect and how severe heat waves will get as global warming becomes worse. They can guide us to know how to rebuild our cities and infrastructure for a climate-changed world.

Reference

<https://www.technologyreview.com/lists/technologies/2020>



Ms. Amritha.K
Associate Professor, EEE
Dept

“Do what you can, with all you have, wherever you are.”

The Association between Healthcare Industry and Artificial Intelligence in India-

A Survey

The use of Artificial Intelligence in healthcare in India is increasing with new start ups and large ICT companies offering AI solutions for healthcare challenges in the country. Such challenges and solutions include addressing the uneven ratio of

- i. Skilled doctors to patients and making doctors more efficient at their jobs
- ii. The delivery of personalized health care and high-quality healthcare to rural areas and training doctors and nurses in complex procedures.

Companies are offering a range of solutions including automation of medical diagnosis, automated analysis of medical tests, detection and screening of diseases, wearable sensor based medical devices and monitoring equipment, patient management systems, predictive healthcare diagnosis and disease prevention.

In developing these solutions, a commonly cited challenge has been the lack of comprehensive, representative, interoperable, and clean data — something that is intended to be addressed through the Electronic Health Records Standards developed by the Ministry of Health and Family Welfare in 2016.

Other challenges include access to open medical data sets and adoption by practitioners.

The use of AI in the healthcare industry is diverse across sub-sectors. The uses of AI in healthcare can be categorized into the following broad categories as

1. Descriptive:
2. Predictive:
3. Prescriptive:



Descriptive: Descriptive AI is the most widely used in healthcare technology today, and holds the most promise in terms of short-term potential. It quantifies events that have already occurred and uses this data to gain further insights, such as detecting trends and minor changes that may otherwise escape detection by medical professionals. For instance, such technology can be used to identify patterns in fracture detections and skin lesions. Additionally, these technologies have been shown to outperform humans in detecting subtle wrist fractures.

Predictive: Predictive AI uses descriptive data to attempt to make predictions about the future. AI is used by medical professionals to provide insights and suggest actions in a predictive manner. AI can play a significant role in predictive healthcare technologies and hospital management.

Prescriptive: Prescriptive AI furthers the purpose of predictive AI, and not only detects trends that may not be predicted by humans, but also suggests possible treatments based on nuances in the diagnosis. This decision-making ability makes prescriptive AI the most interesting.

AI and healthcare segments in india such as pharmaceuticals, medical helplines etc..

“Success is walking from failure to failure with no loss of enthusiasm.”

Some Government Initiatives work for it is:

National eHealth Authority (NeHA) Policy Group on Artificial Intelligence, National IPR Policy United States-India Science & Technology Endowment Fund (USISTEF), Cognitive Science Research Initiative (CSRI), Department of Science & Technology, Biotechnology Ignition Grant Scheme (BIG), Centre of Excellence for Data Science and Artificial Intelligence (CoE-DS&AI), Biotechnology Ignition Grant Scheme (BIG), Biotechnology Industry Research Assistance Council, Centre of Excellence for Data Science and Artificial Intelligence (CoE-DS&AI).

Stakeholders in the AI and Healthcare Ecosystem:

1. Practitioners
2. Researchers and industry bodies
3. Government
4. Investors
5. Developers



Conclusion :

Artificial Intelligence has a range of applications across the healthcare sector. By performing descriptive, predictive and prescriptive functions, AI in healthcare in India is currently augmenting human capacity rather than to replacing human labour altogether. However,

AI-powered applications are accompanied by certain challenges – they require an effective framework of laws to govern privacy and data integrity, while dealing with issues of cultural acceptance, informed consent, liability and explain ability. With large amounts of data and a burgeoning start up community, India has the opportunity to address many health care related problems through the use of AI. In its quest for India to join the AI revolution, the government has also undertaken a number of initiatives to drive the adoption of AI across the country. Yet, many barriers still stand in the way of widespread adoption and implementation, arising out of a lack of regulatory clarity on issues of data, design and certification and lack of resilient and ethical data collection and processing systems. A robust open data policy, a comprehensive privacy legislation, greater investment in AI research and development, robust national infrastructure, equipping labour forces with the necessary skills to adopt AI and to be prepared for the changes that AI could bring, and a regulatory framework that ensures transparency and accountability but does not hinder innovation, are some of the measures required for the establishment of a flourishing AI healthcare ecosystem in India. (Courtesy: The centre for Internet and Society)



A. Rajashekar Reddy

Assistant Professor
Department of IT

“It’s not whether you get knocked down, it’s whether you get up.”

Hackathons – Accelerating Innovation

Made from a combination of the words hack and marathon, hackathons are basically exploratory programming events where people gathered around the same passion are giving their best to find unique solutions to technical problems.

Basically, the goal of every hackathon is to push the limits of technological achievements even further and they have more of an exploratory nature. In the case of hackathons, the word hack isn't actually related to computer crime as most people know it but rather in terms of exploring the limits of a particular idea or a technological achievement. It can also be an event where a certain product needs to be built and delivered to create a fully functioning prototype.

It gathers designers, developers, and programmers to work together on various software or hardware projects. The atmosphere of hackathons has competitive spirit, with main goal of creativity, creating something new and extraordinary.

Today, hackathons are a normal way for programmers or hackers to stay in touch with the latest technological achievements. These events have become quite popular as it turned out that they can be quite effective in finding proper software or hardware solutions taking the highest priority. Now-a-days these hackathons are becoming popular and give a great support for increasing professional creativity and self-expression by using the most innovative and modern technological solutions.



There are many useful benefits of hackathons which is the exact reason why they are so

important. With that in mind, here are the three biggest benefits that will help you understand the importance of such events:

1) Meeting new people – When you have the same interests with many other people, it's the best way to learn even more from the most brilliant minds from different places. When such people collaborate on complex projects, they are able to come up with extraordinary solutions that fit the needs of various industries. It's also the best way to get into networking and make new, useful connections as a business on the rise.

2) Collaboration – Having an opportunity to work with like-minded people and deepen your knowledge puts you in a position to work as a team towards achieving a higher purpose, a goal that surpasses the individual concept of sharing knowledge and accomplishing great achievements. You also get a chance to realize the importance of having high communication skills and how teamwork can help accomplish outstanding achievements.

3) Innovation – Since one of the main goals of hackathons is developing new ideas, it's safe to say that every hackathon is a place where innovation is born. It's the most efficient environment for problem-solving and the most suitable place for developing new ideas involving coding, software or hardware solutions, and technology for solving global problems.

Therefore, hackathons are events that boost inspiration, innovation, creativity, and productivity. On top of everything, hackathons are usually where ideas for entirely new products come to life.



R. Priyakanth,
Associate Professor,
ECE

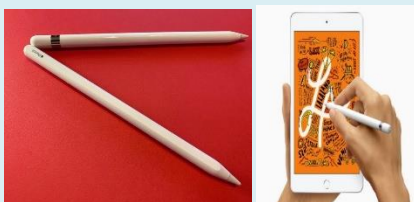


N.M. Sai Krishna
Assistant Professor
ECE

“We may encounter many defeats but we must not be defeated.”

APPLE PENCIL – Dream it up. Jot it down.

pencil. There will not be anymore hassles regarding jotting things down. With the new Apple pencil in store, users can go ahead and make their mark. This is one of the most essential devices that makes our work much easier. Apple has been secretly working on this new project which is quite different unlike its competitors. Apple Pencil set the standard for how drawing, note-taking, and marking up documents should feel — intuitive, precise, and magical. It has a simply seamless design and has a touch sensor that can detect a single, double or even a triple tap. These tap gestures are used to perform pre-programmed functions. Its advanced gestures are not to be missed. Users can tap to copy, paste, undo, redo, change colour, or even change drawing tools like selecting a pen or eraser. It is a lot smarter and magical. It's highly responsive. "Bring out the artist in you with pixel perfect precision. Press harder for thicker lines, lighter for thinner ones. Create shading simply by tilting your Apple Pencil. It can be used effortlessly without making any mess unlike the actual pencil and paper combination." This new technological advancement is sure going to help many people. About what exactly? Stop worrying if you forgot to sharpen your pencil happening in the brain of the patient and can provide the therapy. For the cure of neurological disorders like epilepsy and Parkinson's type of disorders, it costs high and also takes long time.



Apple Pencil will feature an integrated camera, biometric sensor, processor, memory, power supply, and more in the pencil.

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<https://content.techgig.com/apples-next-gen-pencil-to-get-smarter-with-camera-and-touch-support/articleshow/73267072.cms>



Raga Rasagna Paruchuri
CSE-B 3rd Year

ESIM

ESIM is a new technology, which is much smarter to save the day. A SIM is what tells a carrier that you are subscribed to their network and will let you see their towers. But now-a-days ESim cards are trending technologies and dominating the humble SIM cards. New phones like Pixel 4, iPhone 11 Pro, and Motorola razr boast of ESim support.

What is an ESim? An ESim is an electronic or embedded, SIM. Instead of a physical card, SIM technology is built right into your phone. It's a small chip that's used to authenticate your identity with your carrier.



"If you not willing to risk the usual you will have to settle for the ordinary."

Advantages

While using a traditional SIM card, we have swap or replace our SIM cards in case of any new subscriptions but in case of built-in SIM card it is much easy to switch carriers. Instead of having to order a new SIM card and wait around for it to arrive, you can switch to a new carrier straight from your phone. Esim technology supports multiple accounts and switching between them is super easy. Google Pixel 2 was among the first phones to support Esim technology, and an app for managing Esim is available from Google play store.

In 2020 e-SIM technology will become common in both consumer electronics and company related IoT.

Reference:

www.telenor.com

www.digitaltrends.com

K.Buvika
ECE-B 1st year



PHANTOM VIBRATION SYNDROME

This is really amazing mechanism in our body .Most of us are well less known about it . Phantom vibration syndrome is a name for when someone thinks their phone is vibrating ,but it isn't . According to Dr. Michael Rothberg, the term is not a syndrome, but is better characterised as a tactile hallucination since the brain perceives a sensation that is not actually present.Phantom ringing may be experienced while taking a

shower, watching television, or using a noisy device. Humans are particularly sensitive to auditory tones between 1,000 and 6,000 hertz and basic mobile phone ringtones often fall within this range.^[1] Phantom vibrations develop after carrying a cell phone set to use vibrating alerts. In most studies, a majority of cell phone users report experiencing occasional phantom vibrations or ringing, with reported rates ranging from 27.4% to 89%.



Causes :

The cause of phantom vibrations is not known. Preliminary research suggests it is related to over-involvement with one's cell phone.^[1] Vibrations typically begin occurring after carrying a phone for between one month and one year. This may be understood as a human signal detection issue, with potentially significant influences from psychological attributes. Factors such as experiences, expectations, and psychological states influence the threshold for signal detection. Some phantom vibration experiences may be a type of pareidolia and can therefore be examined as a psychological phenomenon influenced by individual variances in personality, condition, and context.

T. Sripriya
EEE 1st year



“The ones who are crazy enough to think they can change the world, are the ones that do.”

TESLASUIT GLOVE

Imagine being able to feel physical objects virtually. TESLASUIT - known as a full body haptic suit and training solution for physical VR experiences (commercially released in 2018), is introducing a glove that lets users feel virtual textures and gather biometric data.

This glove is called the “TESLASUIT Glove”. It can be used together with the suit as a set, or separately. The glove is priced at approximately \$5,000. It integrates haptics, motion capture, biometry, and force feedback. It is mainly meant for training, medical rehabilitation, and other professional applications although gaming and entertainment purposes aren’t ruled out.



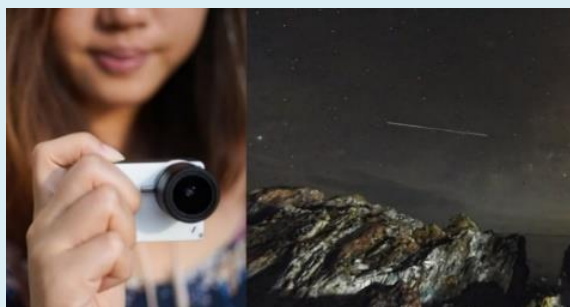
Each glove weighs about 300 grams, just slightly more than Apple’s iPhone 11 Pro. The glove captures the motion of a user’s wrist and fingers. It includes a pulse oximeter that gathers information like the user’s heart rate, which can help indirectly measure stress and other physical reactions to experiences. An array of nine electrodes on each finger produce the sensation of touching a non-existent surface, while a plastic exoskeleton creates resistance and vibration to simulate interacting with solid objects.

MVNS Kavya
CSE 3rd year



NANO1 : WORLD’S SMALLEST ASTRONOMY CAMERA

Imagine a camera that has the ability to capture sharp images of the night sky. Meet the NANO1. This tiny cam is opening up the world of [astrophotography](#) to a wider audience thanks to its compact design and powerful imaging.



NANO1 is the world’s smallest astronomy camera and was designed to allow more people to experience astronomy .A patented noise reduction algorithm further cleans up photos, making them instantly shareable across social media. The NANO1 also has a dual interchangeable lens mount system, meaning that it accepts both C mount lenses and M12 lenses. Beside from still images, the tiny camera shoots 4K video for even more creative options.

Measuring just 63.25 millimeters on its longest side and weighing a mere 100 grams *with* a lens attachment equipped, the NANO1 is also perfect for life on the road, where keeping weight down is an absolute must. Even when it’s mounted to its very own tripod, it still only weighs 250 grams — much lighter than any similar camera on the market.

The new NANO1 is about one-third the size of its predecessor. In terms of portability, it’s much easier to carry this one around during hikes in the outdoors. Even better, it will have an accessory line that is designed to pack flat.

NANO1 syncs with your smartphone to generate an augmented reality map of the sky, which you can use to capture exactly what we need by navigating its contents and shooting the desired

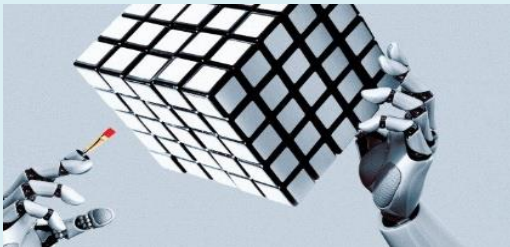
area when it appears on the screen. This feature can also be used for photography during the day to take pictures like any other camera or GoPro. NANO1 is also compatible with social media, allowing the photos you capture to instantly. The camera is available in black or silver and can be purchased with a telescope adapter, a Canon or Nikon lens adapter, and an M12 zoom lens.



K. Jahnavi
EEE 2nd year

ROBOT DEXTERITY

Robots are teaching themselves to handle the physical world. For all the talk about machines taking jobs, industrial robots are still clumsy and inflexible. But while a robot can't yet be programmed to figure out how to grasp any object just by looking at it, as people do.



One such project is Dactyl, a robot that taught itself to flip a toy building block in its fingers. Dactyl, which comes from the San Francisco non-profit OpenAI, consists of an off-the-shelf robot hand surrounded by an array of lights and cameras. Using what's known as reinforcement learning, neural-network software learns how to grasp and turn the block within a simulated environment before the hand tries it out for real. The software experiments, randomly at first, strengthening connections within the network over time as it gets closer to its goal. It usually isn't possible to transfer that type of virtual

practice to the real world, because things like friction or the varied properties of different materials are so difficult to simulate.

URL: <https://www.technologyreview.com/lists/technologies/2019/>



MNS Yamini
CSE 3rd year

SWARM ROBOTS

Swarm robotics is the study of how to coordinate large groups of relatively simple robots through the use of local rules. It takes its inspiration from societies of insects that can perform tasks that are beyond the capabilities of the individuals. Swarm robotics is the study of how large number of relatively simple physically embodied agents can be designed such that a desired collective behaviour emerges from the local interactions among agents and between the agents and the environment.

The robots of the swarm must be autonomous robots, able to sense and actuate in a real environment. The number of robots in the swarm must be large or at least the control rules allow it.

Robots must be homogeneous. There can exist different types of robots in the swarm, but these groups must not be too many.



Main task they have to solve is that, they need to collaborate in order to succeed or to improve the performance. Robots have only local communication and sensing capabilities. It ensures the coordination is distributed.

“If you look closely, most overnight successes took a long time.”

Applications Of Swarm Robots-

Swarm robotics plays an important role in the development of collective artificial intelligence (AI). Current uses for robot swarms include search and rescue, precision agriculture, supply chain management (SCM) and military reconnaissance.

Swarm robotics attempts to draw on the ways social organisms, such as insects, use collaborative behaviors to achieve complex tasks beyond any individual's capability. For example, researchers in swarm robotics might study how bees mark trails with pheromones to map geographical locations. The researchers might then use the bee's algorithms to replicate that same behavior with robots.

Reference-

URL:https://en.wikipedia.org/wiki/Swarm_robotics



Kavya Swamy
EEE 2nd Year

SMART FIRMER

Agriculture uses technology to become easier and efficient. One such practice is "Precision agriculture" which uses information technology to ensure that the crops and soil receive exactly what they need for optimum health and productivity.



Most of the wastage in agriculture is due to insufficient conditions for the crop. While planting we dig a few seeds per field hoping that all seeds are in the best environment to start their journey. SmartFirmer helps to ensure the

environment that the seed is being placed in is in good shape, and determine what type of variability to be provided in the fields.

Smart firmer includes various features like Soil moisture sensing, soil temperature sensing, furrow uniformity, residue sensing, organic matter sensing, organic matter control. A seed requires enough moisture to germinate, Smart Firmer measures and displays soil moisture in the cab so enough adjustments can be made to get seeds into adequate moisture.

SmartFirmer identifies any irregularities along the furrow, such as soil clods, air space, and dry soil falling from the surface, which can be rectified through correct row unit performance, measures the quantity of in-furrow residue and adjust row cleaners ensuring the diseases are not transmitted.

Reference links:

URL:<https://www.precisionplanting.com/>



K. Sai Manasa
ECE 2nd Year

DIGITAL TWINS



Digital twins are virtual replicas of physical devices that data scientists and IT pros can use to run simulations before actual devices are built and deployed. They are also changing how technologies such as IoT, AI and analytics are optimized. A digital twin is a digital representation of a physical object or system. The technology behind digital twins has expanded to include large items such as buildings, factories

and even cities, and some have said people and processes can have digital twins, expanding the concept even further. The idea first came to NASA: full-scale mockups of early space capsules, used on the ground to mirror and diagnose problems in orbit which eventually gave way to fully digital simulations.

The twin is constructed so that it can receive input from sensors gathering data from a real-world counterpart. This allows the twin to simulate the physical object in real time, in the process offering insights into performance and potential problems.

The twin could also be designed based on a prototype of its physical counterpart.

Digital-twin business applications are found in a number of sectors:

- Manufacturing is the area where rollouts of digital twins are probably the furthest along, with factories already using digital twins to simulate their processes.
- Automotive digital twins are made possible because cars are already fitted with telemetry sensors, but refining the technology will become more important as more autonomous vehicles hit the road.
- Healthcare is the sector that produces the digital twins of people we mentioned above. Band-aids sized sensors send health information back to a digital twin used to monitor and predict a patient's well-being.

T. PushpaKavya
EEE 3rd year



HAPTIC TECHNOLOGY

“Haptic” is the term derived from a Greek word ‘Haptetai’ which means to touch. It is defined as the science of applying sensation to humans for the purpose of interacting with computers. By using haptic devices human can not only feed information to the computer but also receive the information from computer in form of a felt

sensation. It enables a mutual interaction with real, virtual and remote environment. Applications of haptic technology are very much beneficial in the field of surgical simulation and medical training.



These devices mainly consist of robotic manipulators that push back user against with the forces that correspond of the environment that virtual affecter is in .Phantom and Cyber Grasp are some of the examples of Haptic Devices.

Phantom is a small robot arm with three revolute joints each connected to a computer controlled electric DC motor. The tip of the device is attached to stylus which is held by the user.

Cyber grasp is a light weight glove with flexible sensors that accurately measure the position and movement of fingers and wrist. It is used in conjunction with position tracker to measure the position and orientation of fore arm.

It has wide range of applications in numerous fields like physical realization, Training and Education, Military Application etc.

On whole haptic technology is the only solution which provides high range of interaction that cannot be provided by BMI or Virtual reality. For sure this technology will make the future world most sensible.

Reference:

URL:<https://www.researchgate.net>

V. Sravya
ECE 2nd year



A SMART MIRROR THAT CAN MAKE PHONE CALLS:

If you're in the market for a new bathroom mirror, the ViioVezzo Bluetooth Mirror is an equally attractive and functional option. It offers built-in LED lights. As well as Bluetooth speakers for music and phone calls while you get ready. Viio is the smart mirror built for beauty, sound and light in any room. Viio allows you to listen to music, podcasts, news or take hands-free calls all from your mirror.

The smart mirror is equipped with power LED lighting, anti-fog technology and an intelligent battery charging system, which promotes up to 20 hours of music. Viio's Bluetooth 4.0 and auxiliary cord connection capabilities let you pair with mobile devices, tablets and computers.



Features:

- Bluetooth connectivity for quality sound
- Allows you to listen to music, podcasts, news or take hands-free calls from your mirror
- Anti-fog technology
- LED lighting
- Mount anywhere with edge-lock easy mounting bracket
- Solid wood backing
- Battery charging system or plug-in

Reference:

mitsubishicomfort.com

A.Aishwarya
3rd year, EEE

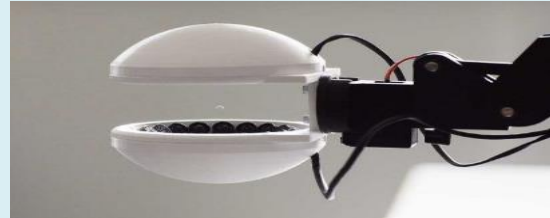


ULTRASONIC GRIPPER

Technological advancement must aid the sustenance and quality of life on earth. If they can be incorporated in areas of health care and agriculture with more efficiency, it would be useful to mankind. If robots are to help out in places like hospitals and phone repair shops, they're going to need a light touch. And what's lighter than not touching at all

How Is It Done?

It's done with an array of tiny speakers that emit sound at very carefully controlled frequencies and volumes. These produce a sort of standing pressure wave that can hold an object up or if the pressure is coming from multiple directions, hold it in place or move it around.



What Is The Problem And What Is Done To Overcome This?

The problem is that it isn't obvious, exactly which combination of frequencies and amplitudes are necessary to suspend a given object in the air. So a large part of this work was developing software that can easily be configured to work with a new object, or programmed to move it in a specific way. A working prototype is complete.

Reference:

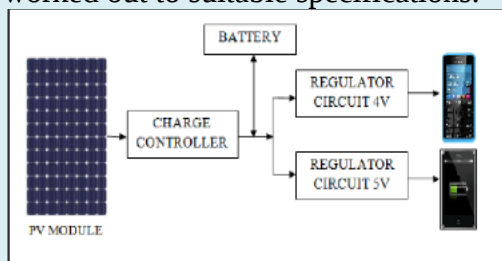
URL: <https://techcrunch.com/2020/01/22/this-ultrasonic-gripper-could-let-robots-hold-things-without-touching-them/undefined>

Akshaya
1st Year CSE



SOLAR MOBILE CHARGER

A solar powered mobile phone charging station is proposed . The system is designed in such a way that any mobile phone can be charged. The hardware of the proposed mobile phone charging station is implemented and tested. The system comprises of a PV module, charge controller, battery and two voltage regulation circuits. The energy generated by the PV module is stored in a battery which is connected to the PV Module through a charge controller. The charge controller acts as maximum power extractor and as voltage regulator for the battery. A vertical pole is used to mount the PV panel and a box is designed with proper ventilation to keep the battery and the regulator circuit safely. A universal charging port is connected to the regulation circuit to plug any mobile phone to be charged. It works on the principle that when light falls on the solar cell, electron -hole pairs are created in the n-type emitter and in the p-type base. The generated electrons (from the base) and holes (from the emitter) then diffuse to the junction and are swept away by the electric field, thus producing. Certain modules are selected and worked out to suitable specifications.



The development of solar charger goes from the fundamental level like soldering lamination and making the panel etc. The developed charger is planned for 6 Volts with ma capacity at bright sunlight and step down to 5Volts using regulator. Solar energy is the energy produced directly by the sun and collected elsewhere, normally the Earth. The sun creates its energy through a thermonuclear process The radiation that does reaches the Earth is the indirect source of nearly every type of energy used today .

The radiation that does reach the Earth is the indirect source of nearly every type of energy used today. The exceptions are geothermal energy, and nuclear fission and fusion. Even fossil fuels owe their origins to the sun; they were once living plants and animals whose life was dependent upon the sun. Much of the world's required energy can be supplied directly by solar power. More still can be provided indirectly. The practicality of doing so will be examined, as well as the benefits and drawbacks. In addition, the uses solar energy is currently applied to will be noted. The storage unit can hold the excess energy produced during the periods of maximum productivity, and release it when the productivity drops. In practice, a backup power supply is usually added, too, for the situations when the amount of energy required is greater than both what is being produced and what is stored in the container. The solar powered mobile charging station is known to be versatile as it can be used for all types of mobile phones.

REFERENCE: <https://www.engpaper.com/solar-energy.html>

M.Vaishnavi
EEE 3rd Year



2020 : THE DARQ AGE

No, we are not talking about some post-apocalyptic age of doom. Rather we are talking about an age of technology which is glowing bright. Distributed ledger technology (such as blockchain), Artificial intelligence (AI), [Extended reality \(including virtual and augmented reality\)](#), and Quantum computing are abbreviated to DARQ. Together, DARQ promises to drive incredible opportunities to reimagine the human future– The way we play,

interact and work could be massively different in the next decade or so. While the SMAC (social, mobile, analytics and cloud) convergence was the foundation of the digital age, the post-digital age is DARQ.

Distributed Ledger Technology: DLT is the backbone for technologies like cryptocurrency and blockchain. Its utility lies in making data validation and non-repudiation redundant. Since information is locked in an implicit chain of trust, DLT has significant applications.

Artificial Intelligence: Artificial intelligence (AI) and its constellation of technologies are front and centre in producing technology-driven business and customer interactions more efficiently, faster, and at lower costs. Across sectors, AI is optimizing processes to improve decision-making from smart cars, diagnosing illnesses, participating in debate, writing realistic text, to running presidential campaigns.

Extended Reality(XR): Be it gaming, tele-medicine, or virtual meetings – XR is beginning to become omni-present and could disrupt the way we work and play. Together with AI, XR makes for serious business. They have already identified potential applications of XR—like virtual training, “hands-on” education, or even immersive online shopping.

Quantum computing: Quantum computers have the potential for pathbreaking applications in material design, logistics, AI and Machine learning, encryption, manufacturing, finance and even energy to name a few. Recently, Google announced ‘quantum supremacy’. Sycamore, Google’s quantum computer, calculated a task in 3 minutes, 20 seconds which otherwise, the world’s best supercomputer, Summit, would have taken 10,000 years to compute.

Reference:

URL:<https://quantumzeitgeist.com/entering-the-darq-age-a-new-decade-of-tech/r>

AndeBhavya Sri,
1st year, CSE



HYPERLOOP TECHNOLOGY

The Hyperloop is high-speed transportation system. The creator of Hyperloop is Elon Musk who is also CEO of PayPal, SpaceX and Tesla motors. It is the fifth mode of transportation. There are two main components in Hyperloop tube and capsule. It consists of low pressure tube with capsules that are transported at both low and high speeds. It is capable of generating power.



Tube will be used for going and coming from and to particular destination. It is made of steel. Capsule is made of inlet, compressor fan and air storage. Capsules are accelerated via magnetic linear. There work on air compressor and magnetic motors. There are two versions of the tube and capsule i.e. Passenger version and passenger + vehicle version. Artificial intelligence is changing how everything works around us. With implementation of autonomous transportation in Hyperloop. It will be the biggest Turning point in technology. There will be no Drive. The entire system will run on solar power. This technology will save fuel and there will be no noise pollution. It consumes very little energy. It reduces over populated train carriages. The Indian government has also agreed and showed a lot of interest and is cooperating with the hyperloop team for speedy development of the infrastructure so the common man can benefit and greatly reduce the overall load on present preferred modes of transportation.

Reference:<https://www.slideshare.net>

T. Roshini
2ndYear,ECE



HTC's 2020 STRATEGY FOCUSES ON VIRTUAL REALITY, NOT SMARTPHONES

On January 2, smartphone maker HTC made its first official announcement of 2020. Rather than announcing a new handset, the briefing focused instead on virtual reality, an alternative business line for the Taiwanese tech giant. That announcement—introducing the multiplayer fantasy-adventure game [Sanctum](#) for visitors to its [Viveland](#) VR gaming centers—might be a harbinger of HTC's 2020 strategy: playing up its VR gaming gear and, to hear analysts tell it, shifting focus away from its traditional core product line of smartphones.



That reshuffling of priorities has already happened over the past few years, as HTC has expanded its footprint in VR headgear and backend hardware while releasing fewer flagship handsets. We expect HTC to continue to launch new smartphones and 5G networking devices, but there will be no flagship smartphones,” says Eddie Han, senior industry analyst with the Market Intelligence & Consulting Institute in Taipei. “This is because HTC is set to focus on emerging application services built around augmented reality, virtual reality, blockchain and artificial intelligence.” “We expect HTC to continue to launch new smartphones and 5G networking devices, but there will be no flagship smartphones,” says Eddie Han, senior industry analyst with the Market Intelligence & Consulting Institute in Taipei. “This is because HTC is set to focus on emerging application services

built around augmented reality, virtual reality, blockchain and artificial intelligence.”

Reference:

<https://www.forbes.com/sites/ralphjennings/2020/01/14/htcs-2020-strategy-focuses-on-virtual-reality-not-smartphones/#4fb424885c96>

K.Haripriya.
3rdYear , EEE



SMART WASTE SEGREGATION WITH THE TRASH BOT

Do you know that we have many types of wastes? Few of the most familiar types are dry wastes, recyclable wastes, wet wastes and metallic wastes. But do you think that we all segregate the household waste accordingly after the provision of 2 separate bins(dry and wet bins).

Trashbot was born in Pittsburgh at the AlphaLab Gear startup accelerator. There, the CleanRobotics team has been developing a machine that uses cameras, sensors, and machine learning to ensure that garbage ends up in the landfill and recyclables don't. They're tackling a problem that most environmentalists would agree needs to be solved: only about 20 percent of what goes in those blue bins actually ends up recycled. We often think that dropping one item the wrong bin doesn't make a great difference. But do you really think that it doesn't make a great difference? If this mistake is done by all the people of a region, this surely does make a difference. If this is the case imagine the burden that rag pickers take to segregate that amount of waste. So, to avoid this problem of segregating



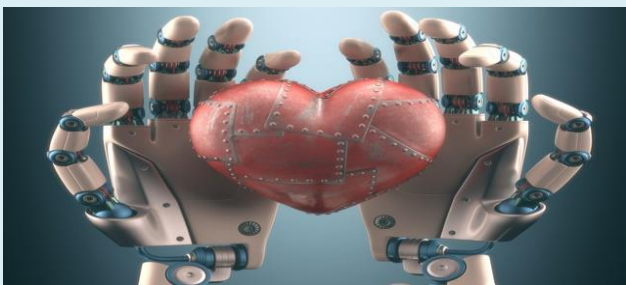
different types of wastes at the dump yards. takes from the household level. The dustbin that we use has been inculcated with some amount of intelligence that is sufficient to segregate different types of wastes into their respective bins after throwing into it so that before dumping them into their respective trucks there is no need for separating the wastes. This reduces the labor required to separate the wastes. Hence, this is how many cities around the world are trying to manage recyclable and non-recyclable wastes.

Hari Prasanna
3rd Year, CSE



BIO ROBOTIC HEART – that beat like a real one

The device real biological heart whose tough muscle tissue has been replaced with soft robot matrix of artificial heart muscles, resembling bubble warp.



The orientation of the artificial muscles mimics the pattern of heart natural muscle fibers, in such a way that researchers remotely inflate the bubbles, the act together to squeeze and twist the inner

heart, similar to the way a real, whole heart beats and pumps the blood.

When the air pumped into the bubble warp at frequencies resembling a naturally beating heart and imaged the bionic hearts response, it contracted in a manner similar to the way a real heart moves to pump blood through the body. The entire hybrid heart in a mould that they had previously cast of the original, whole heart, and filled the mould with silicone to encase the hybrid heart in a uniform covering – a step that produced a form similar to real heart and ensured that the robotic bubble.



T.SriPriya
1st Year, EEE

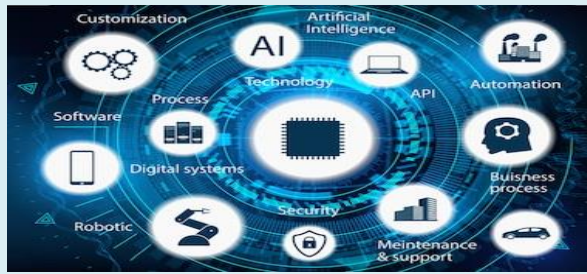
ROBOTIC PROCESS AUTOMATION (RPA)

Robotic processor automation (RPA) is a form of business process automation technology based on metaphorical software robots(bots) or artificial intelligence(AI) workers.

Elaborating these terms :

- Robot means entities which mimic human actions.
- A process is a sequence of steps which lead to meaningful activity.
- Automation is any process which is done by a robot without human intervention.

In traditional workflow automation tools, a software developer produces a list of actions to automate a task and interface to the backend system using internal application programming interfaces (GUI), and then perform the automation by repeating those tasks directly in the GUI. This can lower the barrier to use of automation in products that might not otherwise feature APIs for this.



RPA can be used to automate processes that are:

- Repetitive
- Prone to error
- Rules based
- Involve digital data
- Time critical and seasonal

How does RPA work?

Automation technology has been a staple of business for the last decade, but in recent years, RPA technology has reached an impressive level of sophistication. It is no longer a tool is only used in the automation of simple repetitive IT tasks. With the convergence of other technologies like artificial intelligence (AI), machine learning (ML) RPA is maturing.

Although the term “robotic process automation” can be traced to the early 2000s it had been developing for a number of years previously. RPA evolved from three key technologies: screen scraping, workflow automation, artificial intelligence.

Reference:

www.automationanywhere.com

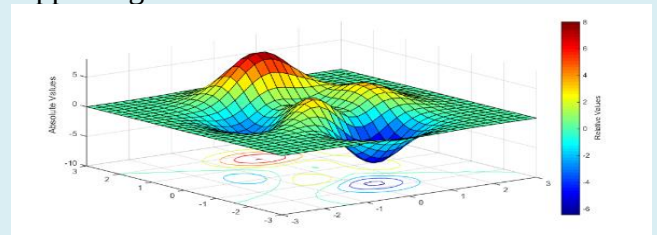


Ch. Lakshmi Chathurya
1st year, CSE

Fourth Generation Programming Language (MATLAB) Workshop

I had always dreamt of having a lab where I can experiment with any of my technical thoughts. The fear of burning the set up or causing other accidents limited my dare to try out the imaginations into reality. These limitations made me feel if I have done a mistake by taking Engineering as my future,and then I heard about the virtual lab....

I was very fortunate to attend the workshop on “MATLAB Software” and thus got introduced to this powerful tool in my 2nd year BTech itself. After attending the workshop, the things around me started making a sense. MATLAB does have a bunch of functionality and built-in tools. I have realized that for this reason around 33,000 companies use MATLAB in their respective industries. And also making robots which work with advanced technology using MATLAB has become easier than ever. Simulink is a graphical programming environment where we can make a model or create a prototype of the circuit by using drag and drop environment. It helps to simulate and analyze multi domain dynamic system. MATLAB can be used as a calculator, image processing and image morphing, pattern recognition, solving equations and wide range of supporting micro controllers and so on.



From the first few sessions we were able to grab most of the fundamentals and then explored in detail what it is actually.

Next we had a hands-on session , through which we learned the MATLAB work environment and few basics on mathematical functions and how to perform mathematical operations of two arrays by using only one command ,instead of using loops(for and while).

By the end of the session, my key takeaways included acquiring knowledge and also the insight about how MATLAB helps us to improve our research ability in day to day life. My experience made me wonder, how I wasted my time previously, trying to learn experiments via reading guide books, knowing that they do not have a deep insight into the relevant knowledge. I feel that it would be interesting if something like this becomes a part of academics everytime. I'm very grateful to our faculty, Mr.Sudheer Kumar and Mr. GuruswamyRevana, for arranging this workshop.

S.Roshitha
2nd year, EEE



DRONE WORKSHOP

Our college provides every facility like workshops and seminars being conducted based on the latest technologies like Data Analytics, Drone Technology, and so on. In the 2nd year of B.tech , we have been introduced to the 'Drone Technology as a two days workshop, 'Future of Drones – The prototype model Making & Live Streaming workshop' on 20th& 21st September 2019.

This workshop was organized by Dr.V.Rajeswari, Professor, Department of Electrical and Electronics Engineering in association with the Drone manufacturing company **Aries Solutions**, who manufacture customized drones, robots and energy systems for the industrial sector and agriculture. In this workshop, we learnt about the technology used in Drones, and the applications of Drones in the present era.

We were asked individually to share our ideas on building a drone for an application and also we were given insight knowledge about an agricultural drone. Many of us have come up with various innovative and creative ideas on



including Drones in our daily life and improving the technology. On the second day of the workshop we were given a chance to build our own drones in groups of ten each. It was a wonderful experience for all of us and students were appreciated and were encouraged to pilot their drones high into the sky. Students have expressed their experiences on the workshop at the end of the day.



P Lakshmi alekhya
EEE 3rd year

3D PRINTING OF ORGANS COULD MAKE ORGAN DONATION OBSOLETE

One massive development in human biology involves the use of 3D printers and human stem cells. 3D printing is developing to such a level that it can print basic replacement parts for human beings. Recent developments from institutions like the University of Bristol include the use of new kind of bio-ink that might allow the production of complex human tissues for surgical implants in the not so distant future. The bio-ink is made from a couple of different polymer-based ingredients. One is derived from seaweed and is, therefore, a natural polymer. The second and last is a sacrificial synthetic polymer.



Each one of these polymers provides a different role in the bio-ink. The synthetic component allows for the bio-ink to solidify under the right conditions whilst the former adds extra structural support. The idea behind this ink is to provide a means of being able to 3D print a structure that can remain durable when immersed in nutrients and not damage any introduced cells to the structure. Osteoblasts (stem cells that make bone) and chondrocytes (stem cells that help make cartilage) can then be introduced into the 3D printed polymer structure in the presence of nutrient-rich environment to create the final 'synthetic' new organ/structure. This process once developed fully, could be used to print patients tissues using their very own stem cells in the future. Other developments include printing kidneys and the potential for printing skin for treating burns. This might also be the key to immortality

Reference: www.sciencedaily.com



G. Vyshnavi 3rd year IT
M. Sharvani 3rd year IT

CYBERWARE

Cyberware is a relatively new and unknown field. In science fiction circles, however, it is commonly known to mean the hardware or machine parts implanted in the human body and acting as an interface between the central nervous system and the computers or machinery connected to it. *cyberware is technology that attempts to create a working interface between machines/computers and the human nervous system, including the brain.* Examples of potential cyberware cover a wide range, but current research tends to approach the field from one of two different angles: interfaces or prosthetics. The first variety attempts to connect directly with the brain. Its job is to translate thoughts into something meaningful to a computer, and to translate something from a computer into meaningful thoughts for humans. Once perfected, it would allow direct communication between computers and the human mind. This technology uses these brain signals to control computer functions. The second variety of cyberware consists of a more modern form of the rather old field of prosthetics.



Modern prostheses attempt to deliver a natural functionality and appearance. In the sub-field where prosthetics and cyberware cross over, experiments have been done where microprocessors, capable of controlling the movements of an artificial limb, are attached to the severed nerve -endings of the patient. The patient is then taught how to operate the prosthetic, trying to learn how to move it as though it were a natural limb.

Crossing over between prostheses and interfaces are those pieces of equipment attempting to replace lost senses. An early success in this field is the *cochlear implant*. A tiny device inserted into the inner ear, it replaces the functionality of damaged, or missing, hair cells. his device comes firmly under the field of prosthetics, but experiments are also being performed to tap into the brain. Coupled with a speech-processor, this could be a direct link to the speech centers of the brain.



LaxmiPriya
IT 3rd Year

Distributed ledger technology

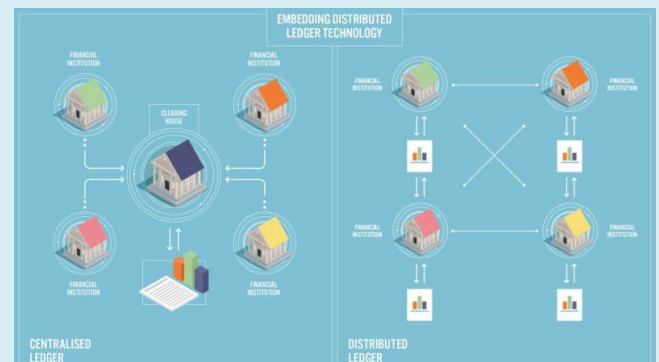
A distributed ledger is a consensus of replicated, shared, and synchronized digital data geographically spread across multiple sites, countries, or institutions. There is no central administrator or centralized data storage. A peer-to-peer network is required as well as consensus algorithms to ensure replication across nodes is undertaken. One form of distributed ledger design is the blockchain system, which can be either public or private. The distributed ledger database is spread across several nodes (devices) on a peer-to-peer network, where each replicates and saves an identical copy of the ledger and updates itself independently.

A blockchain, originally blockchain, is a growing list of records, called blocks, that are linked using cryptography. Each block contains a cryptographic hash of the previous **block**, a timestamp, and transaction data. The primary advantage is the lack of central authority. When a ledger update happens, each node constructs the new transaction,

and then the nodes vote by consensus algorithm on which copy is correct.

Once a consensus has been determined, all the other nodes update themselves with the new, correct copy of the ledger. Security is accomplished through cryptographic keys and signatures.

Distributed ledgers may be permissioned or permissionless. This determines if anyone or only approved people can run a node to validate transactions. All Blockchain is considered to be a form of DLT. But there are also Distributed Ledger Tables that are not Blockchain.



These non-Blockchain DLT's can be in the form of a distributed Cryptocurrency or they may be the architecture on which private or public data is stored or shared.

The main difference being that while Blockchain requires Global Consensus across all nodes a DLT can achieve consensus without having to validate across the entire Blockchain.

T.Anupama
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AWARDS AND ACHIEVEMENTS





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