

TechBlaze

Innovation - Our Passion



VOL.- 5, 2020



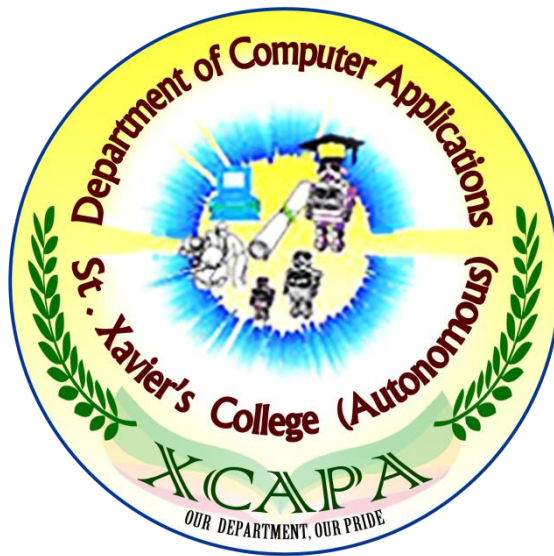
DEPARTMENT OF COMPUTER APPLICATIONS
ST. XAVIER'S COLLEGE
(Autonomous)



(Awarded 'College with Potential for Excellence' by UGC)
(Accredited by NAAC at A++ Grade with a CGPA of 3.66 out of 4 in IV Cycle)
PALAYAMKOTTAI - 627002, TAMILNADU, INDIA.

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THE EDITORIAL

**Education is not the learning of facts,
but the training of the mind to think.**

- Albert Einstein

In the modern world, the information technology is a vital element which greatly influence the development of the society. Technology is defined as “the application of knowledge to extend human capabilities by equipment or a technique for performing a particular activity”. Recently, the rapid advancement in technology has incorporated more sophisticated ways of transmitting and analyzing information.

Technology is omnipresent in our daily lives. Today’s technology is a booming market full of exciting and innovative gadgets and new learning opportunities. It has facilitated communication between two machines and communication among men and machines. Data Science is also truly commendable.

Stephen Hawking has said: “Success in creating AI (Artificial Intelligence) would be the biggest event in human history”. Artificial Intelligence leads us to hyper automation to deliver work. As rightly said by Henry David Thoreau, “Men has become the tools of their tools”. Nowadays it becomes inevitable for everyone to survive with internet.

Internet has drastically changed the lifestyle of human world. The novel technologies that have emerged in hands with internet make tremendous progress in human life. The latest spectacular technological trends such as Augmented Reality, 3D Printed Eyes, Padrone Ring, Clicbot, Circlet Bracelet, Internet of Things, Phree - Virtual mobile input device, Autonomous Driving and etc. have been capsuled in this magazine.

Certainly the readers of this magazine will experience an incredible visual treat.

**Mrs. L. Sujatha, M.C.A., NET., SET.,
Assistant Professor**

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SECRETARY'S MESSAGE



“Education is the foundation upon which we build our future.”

I am extremely happy that the Department of Computer Applications is bringing out yet another magazine, which contains the aspiration and innovation of the student community. Our College does not believe in merely producing degree holders rather it trains them with all the skills needed to face the realities of the present global situation.

I would like to congratulate the faculty members of the department particularly the Head of the Department, Dr. S. Chidambaranathan for his dedication and commitment in the upliftment of the students through seminars and workshops by the experts from I.T Companies and arranging campus interviews for placements. I would like to congratulate the editorial team of “TechBlaze” for their determined effort. I wish my dear students success in all future endeavors.

**Rev. Dr . Alphonse Manickam, S. J.,
Secretary**

MESSAGE FROM HOD



“The goal of education is the advancement of knowledge and the dissemination of truth”.

- John Fitzgerald Kennedy

Vision is the true creative rhythm. Having a clear vision enables us to accomplish our goals. I feel immense pleasure in bringing out the fifth volume of our department magazine this year. In the aeon of Information Technology, our magazine depicts the trending ideas and innovations in the modern technical world.

I am very much confident that our magazine enables to bring creative talents and achievements of the students of our department. All this has happened with the great support and arduous involvement of the management, experienced faculty members and also the fervent support of the students.

On this wonderful moment, I would like to convey my hearty wishes to our sincere students as well as our diligent faculty members to attain success in all their endeavours.

**Dr. S. Chidambaranathan, M.Sc., M.C.A., M.Phil., Ph.D.,
Head of the Department**



ABOUT THE DEPARTMENT

Master of Computer Applications was started with AICTE norms in the year 2000 with 2 teaching staff. In the year 2001, it started functioning as a separate department as per the AICTE recommendations. Now the Department has 5 faculty members. They are Dynamic, NET/SET qualified, patent published and resourceful. Among them two have got their Doctoral Degree. Dr. S. Chidambaranathan is the Head of the Department.

The Department has infrastructure facilities like Department Library, Seminar Hall, well equipped Computer Lab with Internet facility etc. The growth of the department is admirable. As another feather to our cap, the BCA programme has also been started in the academic year 2019-20.

The Department has established a Student Training Forum named Xaverian Computer Applications Professionals' Association (XCAPA), which conducts Orientation Programmes, Seminars, Conferences, Workshops on Communication Skill, Aptitude and Reasoning, Personality Development and recent trends in IT sector.

The Department conducts ICAPO (Innovative Computer Application Professionals Ordeal) an Inter-Collegiate Tech Meet every year in which nearly 20 teams from various colleges participate and enjoy the technical feast.

The Department has produced more than 500 students who have been placed in various MNCs, Colleges and Universities. The Department becomes more reputed due to the placements obtained by our students in well recognized MNCs like IBM, HCL, TCS, CTS, Tarento Technologies, Stradegi, Chain-Sys, Centizen Inc. (US based), etc.

A Newsletter and a Department Magazine titled "Tech Blaze" are being released annually. The students also actively take part in STAND activities, an outreach programme in the college and also in various competitions in and out the campus and bring laurels to the Department.

OUR DEPARTMENT, OUR PRIDE

FACULTY MEMBERS



Dr. S. Chidambaranathan, M.Sc., M.C.A., M.Phil., Ph.D.,
Head of the Department and Associate Professor



Dr. S. Saraswathi, M.C.A., M.Phil., Ph.D.,
Assistant Professor



Mrs. L. Sujatha, M.C.A., NET., SET.,
Assistant Professor



Mrs. R. Geetha, M.C.A., M.Phil., M.E.,
Assistant Professor



Mrs. A. Regita Thangam, M.C.A., M.Phil., SET.
Assistant Professor

ASSOCIATION REPORT FOR THE ACADEMIC YEAR 2019-2020

The inauguration of XCAPA was held on 19th July, 2019 in the MCA Seminar Hall. The XCAPA was inaugurated by our Secretary Rev. Dr. Alphonse Manickam, S.J. The keynote address was delivered by the Chief Guest Mr. R. AyeraJothi, Managing Partner, Stradegi Solutions, Singapore. The felicitation was given by our Secretary Rev. Dr. Alphonse Manickam, S.J. The presidential address was given by our Principal Rev. Dr. S. Mariadoss, S.J. The Association Annual Plan for the year 2019-2020 was read by our Association's Secretary Mr. G.Maharaja of III MCA.

In order to train our II MCA students to enhance their hardware and programming skills, 2 Value Added Courses on “ Hardware Management and Networking”, “ Python Programming” are conducted in the timings being scheduled by our association. They are 30 hours programme which are conducted from 11.30 am to 1.00 pm. They commenced on 17th July, 2019 and 6th Jan 2020 respectively. The cross major students are highly benefited by these programmes.

A Programme on “HOW TO FACE INTERVIEWS?” was arranged for our students on 5th August 2019 by our association. It was lead by our alumni Mr. Ramanathan, who is working as a Programmer in “CENTIZEN Inc.”, Tirunelveli and Mr.Mahendran is working as Software Analyst in “CHAIN-SYS TECHNOLOGIES”, Chennai. The students made use of it very well and got some valuable tips from them.

On 6th September, 2019, a Campus Interview was conducted by “CENTIZEN Inc.”, (An American based Company) Tirunelveli in our MCA Seminar Hall. Nearly 20 students participated in the interview and one student has been selected.

The Quiz Competition was held on 11th September, 2019 to enrich the intellectual Knowledge of BCA students, which was conducted by III MCA students.

On 20th September, 2019, a Campus Interview was conducted by “JI-JI TECHNOLOGIES”, Tirunelveli in our MCA Seminar Hall. Two students have been selected.

On 27th September, 2019, St. Joseph's College, Tiruchirappalli organized an International Colloquium on the “Challenges of Higher Education in the 21st Century” anchored by Anthony de Sa, IAS (Retd). The Faculty and students of our Department witnessed that webinar through Video Conference in our MCA Seminar Hall.

The Paper Presentation Competition was held on 3rd October, 2019 to improve the presentation skills and knowledge of BCA students, which was organized by II MCA students.



On 11th October, 2019, a Campus Interview was conducted by “CHAIN-SYS TECHNOLOGIES”, Chennai in our MCA Seminar Hall. Nearly 36 students participated in the interview and two students have been selected.

On 21st October, 2019, a Campus Interview was conducted by “TECHSOMO”, Tirunelveli in our MCA Seminar Hall. Nearly 15 students participated in the interview and two students have been selected.

On 6th November, 2019, a Campus Interview was conducted by “BEVYWISE NETWORKS LLP”, Tirunelveli in our MCA Seminar Hall. Nearly 12 students participated in the interview and three students have been selected.

On 29th November, 2019, a Seminar on “Data Science in Real World” was conducted by Livewire Technologies, Tirunelveli. It was held by Ms. V. Mahalakshmi, Livewire Engineer, she threw lights on Data Science and R-Programming, which is the current trending technology of the IT world.

A Seminar titled “How to protect yourself from Fraudulent Credit Card Transaction?” was held by our alumni Mr. David, Senior Analyst, Marshall Trading and Equipment Limited, Dubai on 8th January, 2020. Students gained knowledge about the security issues during online transaction.

On 9th January, 2020, an Orientation Programme on “How to face the interviews assertively?” was conducted in by Mr. B. Subramani, our alumni, who is a consultant at Tarento Technologies, Bangalore. It was carried out as an interactive session, in which students shot out various questions and got clarified.

On 24th January, 2020, Competitions like Pencil Sketching, Flip-flop and Essay Writing (English / Tamil) were conducted for the BCA students. They actively took part and the participants were judged by the faculty from other departments.

Motivational Programmes are planned to be conducted during the free hours to the students. As per this, a programme was organized to I BCA students on 25th January, 2020 by our faculty Mrs. R. Geetha. Some motivational videos were shown to energize them.

A Two Day Workshop on “Communication Skills and Personality Development” was organized on 12th and 13th of February, 2020 to the MCA students and the eminent resource person was Mr. A. Sesudasse, Founder and CEO, Inspire Career Development Center, Pondicherry. It was fully activity-based, thought provoking and motivated the students to a great extent.



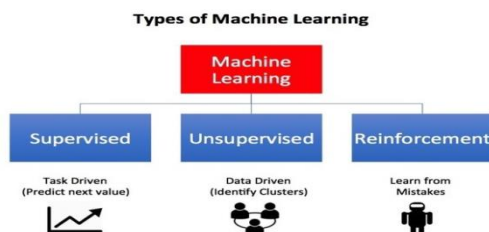
Machine Learning Algorithms

The use of Machine Learning and its prowess had grown exponentially over the last few years. The things our grandparents thought could only be done by an intellectual human are now being done by machines without human interference. That is the power of Machine Learning. Machine learning algorithms are programs that can learn from data and improve from experience, without human intervention.

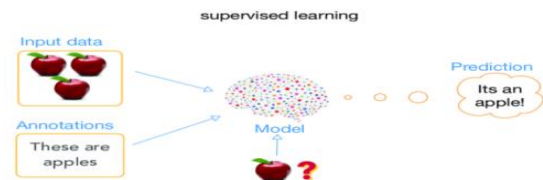
The basic process of machine learning is to give *training data* to a *learning algorithm*. The learning algorithm then generates a new set of rules, based on inferences from the data. This is in essence generating a new algorithm, formally referred to as the machine learning model. By using different training data, the same learning algorithm could be used to generate different models.

There are 3 types of machine learning (ML) algorithms:

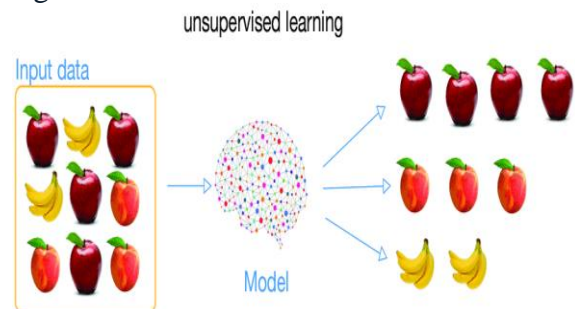
- ✓ Supervised Learning Algorithms
- ✓ Unsupervised Learning Algorithms
- ✓ Reinforcement learning



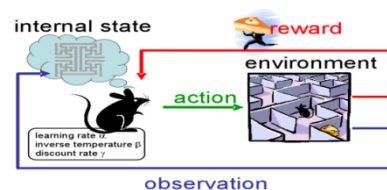
Supervised Learning: The learning algorithm is given labelled data and the desired output. For example, pictures of dogs labelled “dog” will help the algorithm identify the rules to classify pictures of dog.



Unsupervised Learning: The data given to the learning algorithm is unlabeled, and the algorithm is asked to identify patterns in the input data. For example, the recommendation system of an e-commerce website where the learning algorithm discovers similar items often bought together.



Reinforcement Learning: Reinforcement learning is a type of machine learning algorithm that allows an agent to decide the best next action based on its current state by learning behaviors that will maximize a reward. Reinforcement algorithms usually learn optimal actions through trial and error. Imagine, for example, a video game in which the player needs to move to certain places at certain times to earn points.



**Mrs. S. Saraswathi, M.C.A.,
M.Phil., Ph.D.,
Assistant Professor**



Top 5 Future Technologies to learn in 2020

Here are the latest tech skills that will be in the highest demand for jobs in 2020

1. Hyper-Automation

Gartner's first prediction in the 'Top 10 Strategic Technology Trends for 2020' is hyper-automation—"a combination of multiple machine learning (ML), packaged software and automation tools to deliver work." Hyper-automation builds on RPA, combining business process management (BPM), AI, ML and data science to seamlessly automate multiple processes within a coherent organizational context.

For instance, in a hyper-automated logistics company, trucks can be dispatched automatically based on traffic or weather predictions of the journey. FedEx is experimenting with something similar to hyper-automation — combining autonomous tugs, motion sensors, computerized maps, 3D cameras, high-speed camera tunnels, and data analytics engines etc. for end-to-end automation at scale.

In 2020, existing automation professionals must leverage their tech skills like C, C++, Selenium, and Cucumber, RestSharp etc, and BPM experience to move into more holistic hyper-automation projects, for more meaningful and impactful careers.

2. Artificial Intelligence (AI) and Machine Learning (ML)

A group of researchers at Saarland University, Germany, are building an artificial intelligence-based system that can predict local thunderstorms more precisely than before - potentially saving hundreds of life from natural disasters. In business too, indigenous start-ups

like Lily AI and Vue are in progress. Experts believe that AI will create 23 million potential jobs all over the world by 2020. Improving the foundational knowledge of AI and earning certification can help in building a career in AI.

AI and ML are bringing never-seen-before efficiencies across industries. Skilled professionals in Python Programming, Data Mining, Statistical Analysis, Predictive Modelling etc. are in great demand. Yet, in India alone there are over 4000 AI jobs lying vacant due to lack of suitable candidates for over a year, finds a study by Analytics India Magazine. Machine learning is rapidly being deployed in all industries, creating a huge demand for skilled workers. ML is expected to grow to \$8.81 billion by 2022.

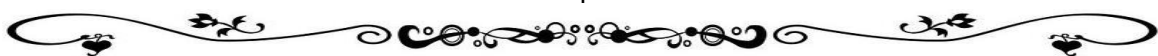
3. Data Science and Analytics

"Data is the voice of the customer, data science is the interpretation of that voice," said Riley Newman. Data scientists have come a long way from being numbers nerds; they are now collaborating strongly and meaningfully in digital product development. In the near future, data science will no longer be a reactive 'analysis' process, but a proactive and predictive process, fundamentally impacting the business itself.

At that point, there will be a great demand for people with data science skills - Analytics India Mag predicts that there will be over 200,000 Data Science jobs in India in 2020. Skills in Database Querying, Programming with R and Python, Data Wrangling with Pandas, Data Manipulation with Map reduce, Statistical Inference, Correlation and Regression, will be in demand.

4. Cyber Security

The threat of hacking is more real and immediate today than ever before. More recently, security cameras were



hacked to launch a distributed denial of service (DDoS attack). As business and governments alike are going digital, cyber security is a fast-growing and inevitable need.

Cyber security, today, includes data security, architecture planning, network security, application security, disaster recovery etc. A typical cyber security job expects skills in forensic concepts, testing and troubleshooting tools, crypto-algorithms etc. It would be an additional boost if professionals stay abreast of the latest conversations and philosophies in cyber security like ethical security, ML model theft, etc.

5. User Experience Design

In 2020, user experience (UX) design will go far beyond developing websites and mobile apps. Augmented reality technology is coming to life: heads-up displays (HUD) and their driver assistance applications are being beta-tested; Apple recently announced their roadmap for an AR headset. Jobs will be aplenty for UX designers with multi-disciplinary skills across customer psychology, visual design and research to build engaging digital applications using tools/programmes such as Adobe XD, Sketch, In Vision, HTML, CSS, and JavaScript etc.

From multinational enterprises such as Amazon, Cognizant, and IBM etc. to start-ups like Automation Anywhere and UiPath, companies in India are in constant need of skilled technology professionals. Without the formal education system to teach these technologies, and the lack of time in the industry to learn from experience, individuals are often expected to invest in themselves for up skilling either through personal projects, hackathons, or other online learning programs.

Reference

<https://www.in.springboard.com/blog/>

7 Richest Indian CEOs in the world

1. Thomas Kurian, Google Cloud – Rs. 10,600 crore

A force to reckon with in the tech space, Thomas Kurian amassed a net worth of Rs 10,600 crore in 2019. Kurian is presently the CEO of Google Cloud. He joined the platform in 2018, replacing Diane Green. Prior to this role, he was the President of Product Development at Oracle Corporation (from 1996 to 2018). Notably, Kurian holds his Bachelor's Degree from Princeton University and also holds an MBA from Stanford University.



2. Jayshree Ullal, Arista Networks – Rs. 9,800 crore

Jayshree Ullal is an Indian-origin billionaire aside from being one of the highest-paid CEOs in the world. She has been the president and CEO of Arista – a cloud networking company since 2008. According to Forbes, Ullal owns about 5% of Arista's stock, some of which is earmarked for her two children, niece and nephew. She is also currently one of America's wealthiest female executives.



3. Nikesh Arora, Palo Alto Networks – Rs. 6,000 crore

Born in Uttar Pradesh, Nikesh Arora started his career as a Google Executive and ended up becoming one of the highest-paid employees there. However, he quit this job and joined Softbank and held the position of President/COO/Representative Director. In 2018, he switched again and took on the role of CEO and Chairman at Palo Alto Networks, an American multinational cybersecurity company.



4. Ajay Banga, MasterCard - Rs 5,200 crore

A graduate of Delhi University and the Indian Institute of Management, Ahmedabad, Ajay Banga is not just the CEO of MasterCard but also President and also a member of its board of directors. And prior to MasterCard, he served as Chief Executive Officer of Citigroup Asia Pacific and also supervised the company's efforts in micro-finance. Notably, he is also a Padma Shri recipient and a founding Trustee of the U.S.- India Strategic Partnership Forum. One of the highest-paid CEOs in the world, he began his career at Nestle, India, where he worked for 13 years and then moved onto PepsiCo, while simultaneously crawling up the corporate ladder.

The President, Shri Pranab Mukherjee presenting the Padma Shri Award to Shri Ajaypal Singh Banga, at a



Civil Investiture Ceremony, at Rashtrapati Bhavan, in New Delhi on March 28, 2016.

5. Satya Nadella, Microsoft - Rs 5,100 crore

Originally from Hyderabad, Satya Nadella joined Microsoft in 1992 and held leadership roles in both enterprise and consumer businesses across the company before being named the CEO in 2014. Nadella is one of the most easily recognisable faces in the corporate space and is known for his transformative leadership skills. Notably, he holds a Bachelor's Degree in Electrical Engineering from Mangalore University, a Master's Degree in Computer Science from the University of Wisconsin – Milwaukee and a Master's Degree in Business Administration from the University of Chicago.



6. Shantanu Narayen, Adobe Systems - Rs 4,500 crore

Shantanu Narayen joined Adobe in 1998 as Vice President and General Manager of its engineering technology group. He became president and COO in 2005, CEO in 2007 and Chairman of the board in 2017. He holds five patents and has a Bachelor's Degree in Electronics Engineering from Osmania University, a Master's Degree in Computer Science from Bowling Green State University and a



Master's Degree in Business Administration from the University of California at Berkeley's Haas School of Business. Interestingly, he's also from Hyderabad and his continuous efforts have bagged him a spot on the Fortune Business person of the Year list multiple times and also a Padma Shri.

7. Sundar Pichai, Alphabet - Rs 3,300 crore

Madurai-born, IIT-educated Sundar Pichai needs no introduction. He broke the internet after being named the CEO of Alphabet Inc. and its subsidiary Google LLC recently. He also got \$242 million richer since the time his net worth was elaborated at Rs 3,300 crore in 2019, courtesy of the promotion. What makes Pichai's journey even more noteworthy is the fact that he began his career at Google as a Management Executive in 2004. He rose to subsequent ranks via his innovative ideas and hard work.



Reference: <https://www.gqindia.com/get-smart/content/>
Mrs. L. Sujatha, M.C.A.,
NET., SET.,
Assistant Professor



Interesting Facts about Global Tech Titans

Google

The name 'Google' is actually derived from the mathematical term 'googol' which is basically 1 with a 100 zeros following it, and the term 'Google'

Was Officially 'Verbified'. Initially the Co-founders Larry Page and Sergey Brin originally named Google 'Backrub' Google wanted to sell itself to online company Excite in 1999 for \$1 million, but the Excite CEO rejected the offer. Since 2010, Google has been acquiring an average of one company every week. Larry and Sergey's private planes have runways in NASA, where no other planes are allowed to land. No part of a Google office is allowed to be more than 150 feet away from some kind of food will receive 50% of their salary every year for the next decade

As part of their green initiative, Google regularly rents goats to mow the lawns of their mountain view HQ.

Google employees in the US get death benefits which guarantee that the surviving spouse.

Microsoft

Microsoft is one of the top patent holders in the U.S. Pizza is the favorite food at Microsoft campus. Microsoft Celebrates Anniversaries with M&Ms. Microsoft Asks Strange Interview Questions like 'Why manhole is circle in shape?'

Bill Gates was officially the youngest billionaire when he reached this astounding feat in 1987 at the humble age of 31.

Microsoft headquarters had 35 cafeterias with free candy and drinks for its employees with breakfast being served until 2pm. One Café; the Café Red west boasts an impressive 2,000 visitors a day.

The Hyphen in the company name, Micro-Soft, was removed after a decision was made in 1981.

Oracle

In the beginning, the company didn't have such an exciting name. It was

first called Software Development Laboratories (SDL).

Oracle nearly went bankrupt in the 1990s and had to lay off hundreds of employees due to several class-action lawsuits.

Larry Ellison, the founder of Oracle, owned several aircraft and two military jets while a licensed pilot himself. enjoys outdoor activities such as boat racing and mountain biking. He owns a 452-foot yacht which is the fourth largest in the world.

The wedding photograph for Larry Ellison and Malanie Craft was actually taken by the Apple founder, Steve Jobs.

The former site of Oracle's headquarters was the Marine World Africa USA amusement park.

About 21 tons of plastic, cans, paper, and bottles are recycled every year in the company's buildings.



Human rights campaign's equality index has given Oracle 100%.

Oracle has recruited hundreds of fresh graduates, instead of poaching from other companies. It believes in creating a fair, equal and flexible environment for the growth of employees.

IBM

The full form of IBM is, as you know, is "International Business Machines. This name came to be attached to the firm as its earlier name of International Business and Pleasure Machines" sounded puzzling and odd.

IBM even reached out to the moon! It got involved in the Apollo missions with 4,000 employees working on computer systems. With 4K of ram, the mission was a success.

Percentage of world's largest banks that use IBM products is 97%.

**Mrs. R. Geetha, M.C.A.,
M.Phil., M.E.,
Assistant Professor**



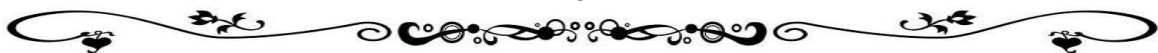
Deep Learning

It is a subfield of machine learning where concerned algorithms are inspired by the structure and function of the brain called artificial neural networks. All the value today of deep learning is through supervised learning or learning from labelled data and algorithms.

Deep learning is a machine learning technique that teaches computers to do what comes naturally to humans. Deep learning is a key technology behind driverless cars, enabling them to recognize a stop sign or to distinguish a pedestrian from a lamppost. It is the key to voice control in consumer devices like phones, tablets, TVs, and hands-free speakers. Deep learning is getting lots of attention lately and for good reason. It's achieving results that were not possible before.

Applications of Deep learning:

In deep learning, a computer model learns to perform classification tasks directly from images, text, or sound. Deep learning models can achieve state-of-the-art accuracy, sometimes exceeding human-level performance. Below is the list of specific applications of deep learning:



- Colorization of Black and White Images.
- Adding Sounds to Silent Movies.
- Automatic Machine Translation.
- Object Classification in Photographs.
- Automatic Handwriting Generation.
- Character Text Generation.
- Image Caption Generation.
- Automatic Game Playing.

Mrs. A. Regita Thangam,
MCA., M.Phil., SET.
Assistant Professor



APPLE TALK



Apple talk is a network operating system designed to connect apple computers, its components are built on mechanical operating systems.

There are two main versions of apple talk depending on how many years in the past the network was implemented. They are phase 1 and Phase 2 is the current installation as of about 2002. Apple talk/local talk networks make use of CSMA/CA a media access control method.

STP cabling is usually used. The network topology is a bus or tree. A local talk network is limited to 32 nodes. Local talk is the data link layer protocol originally used for Macintosh machines.

Apple talk was designed for small networks. Fortunately these small networks can be connected together. Each sub network is called a zone and has a name for identification.

Apple talk networks can be fairly directly connected to networks of other architecture such as Ethernet or token ring.

Apple talk includes an address resolution method much like TCP/IP's ARP. The primary network layer routing protocol in apple talk is the Datagram Delivery Protocol (DDP).

SECURITY

Apple talk like many network protocols makes no provisions for network security.

The design of the apple talk protocol architecture requires that security measures be implemented at higher application levels.

ADVANTAGES

Apple automatically includes apple talk in the Macintosh operating system. Easy to implement and configure.

DISADVANTAGES

It is not suitable for very large networks. It is very slow compared to other LAN links at 230.4 kbps.

By,
R. Pon Brindha
17MCA02

“VYOM MITRA”-THE ROBOT TO VISIT SPACE

Indian Space Research Organisation (ISRO) unveiled its first ‘woman’ astronaut at the inaugural session of the “Human Spaceflight and Exploration – Present Challenges and Future Trends” seminar on Wednesday (22 January) in Bangalore. The robot, powered by speech synthesis

software and artificial intelligence, was seated at a desk in a uniform and sported a custom-made ISRO identity badge with her name on it.

The half-humanoid robot will ride to space in the first test flight of the human space mission, Gaganyaan. Reportedly, two such trial flights without crew will take place with Vyom Mitra — the first around December 2020 and the second around July 2021. According to ISRO Inertial Systems Unit (IISU) Director D Sam Dayala Dev, **“Vyom Mitra is the result of the one year of hard work by IISU”**, Trivandrum.



BENEFITS

Vyom Mitra can simulate human functions required in space. She can converse, respond to their queries and can even recognize astronauts. It can also perform environment control and life support systems functions, handle switch panel operations and give environment and air pressure warnings.

By,
V. Harini
17MCA04

IQOO 3

IQOO has finally launched its first smart phone in India at a glittering event in Mumbai. The company introduced to the

world the IQOO 3 as India's second 5G enabled Snapdragon 865 smart phone. Apart from the chipset, the device also brings with itself some interesting features that should help compete against the likes of the OnePlus 7T Pro and the recently announced Realme X50 Pro 5G in the entry-level of the premium segment of the market.

Among the key highlights of the device is the fact that it brings to the table the promise of being 5G ready. There's also a massive 6.44-inch display and a 48-megapixel lens-based quad-camera set-up too for helping it stand tall against the competition. On the outside, IQOO 3 comes with a 6.44-inch Super AMOLED Full HD+ display which the company claims provides 180Hz of touch response. The display is HDR10+ ready and is primed for streaming content and playing games on it. For its protection, IQOO has used a sheet of Gorilla Glass 6 at the front and the back.



By,
M. Akila
17MCA05

FUJIFILM



Fujifilm is back with a new X100 series camera. Fujifilm has launched a new

camera as part of its X100 series, which is all about cameras that have a fixed lens with fixed focal length. The new camera is called Fujifilm X100V and it comes with a new 26-megapixel X-Trans image sensor and a 23mm fixed lens with aperture of F2.0. This is a compact camera, although its feature set means it is a premium offering aimed at casual photographers, particularly those who do landscape and street shooting. For now Fujifilm has not announced the price of the X100V in India.

Fujifilm X100V body has top and bottom plates made from single pieces of aluminium. It has retro looks, similar to most of the other Fujifilm cameras. The alumite satin coating on the camera's body makes it easy to grip and hold it comfortably, says Fujifilm. The new X100V is weather proof and this is the first camera from the Fujifilm X100 series to come up with this feature. You get a new two-way tilting LCD touch screen that sits at the back of the camera. The display supports touch controls. The Fujifilm X100V has a new hybrid viewfinder, which gives photographers quick option to choose between optical views finders or the 3.69M dot OLED electronic viewfinder.

By,
V. Gomathi Shanmuga Priya
17MCA06

XBOX SERIES X



Microsoft revealed some information about the Xbox Series X and ever since then, it has created some curiosity among console gamers. The next generation console from Microsoft is said to be more powerful than before and it is expected to outdo the Sony PlayStation 5 in terms of performance and features. While Sony's launch is yet to happen, Microsoft has gone ahead in revealing some more information regarding the Xbox Series X.

Microsoft has been hinting at a massive performance bump over the current Xbox One X and it has finally given some figures. The Series X will use a custom design processor that's based on AMD's latest Zen 2 and RDNA 2 architectures. When it comes to graphics performance, Microsoft claims up to 12 TFLOPS of GPU performance. This is almost twice than what the Xbox One X can achieve and more than eight times the original Xbox One. Microsoft says the Series X will deliver higher frame rates, larger, more sophisticated game worlds, and immersive experience unlike anything seen in console gaming.

Features

- ✓ Hardware accelerated DirectX ray tracing promising more dynamic environments with better reflections.
- ✓ With Dynamic Latency Input (DLI), Microsoft is optimizing the latency in the player-to-console pipeline starting with the Xbox Wireless Controller. Controls are even more precise and responsive.
- ✓ A new Quick Resume feature lets players continue multiple games from a suspended state almost instantly, returning to where the last session was left without long loading screens.

By,
B. Abirami
17MCA07

BEST PORTABLE HUMIDIFIERS FOR DRY SKIN, SINUS RELIEF AND SORE THROATS IN 2020

A portable humidifier is an effective way to help you combat the effects of exposure to the harsh dry air while travelling on a plane or staying in a hotel room. Dry eyes, dry skin, nosebleeds, dry sinuses and cracked lips are all telltale signs that the humidity level in your environs could be low.

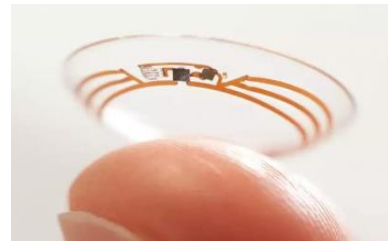


Adding a fine cool mist of water to the air while you sleep with a mini humidifier can significantly remedy these symptoms, often overnight.

With so many options available, it can be difficult to figure out what the difference is between an evaporative humidifier, an ultrasonic humidifier (complete with demineralization cartridge, so you don't have to only use distilled water to avoid mineral build up if you have hard water coming from your tap) and an essential oil diffuser. So to simplify your life, we went out and found some of the best portable humidifier options suitable for any smallish space, perfect for your hotel room, baby's nursery or travel.

By,
G. Maharaja
17MCA08

GOOGLE CONTACT LENS



Google invented a pair of smart contact lenses. The idea here is to help diabetics track their glucose levels. The lens consists of a wireless chip and a miniaturized glucose sensor. A tiny pinhole in the lens allows for tear fluid to seep into the sensor to measure blood sugar levels. Both of the sensors are embedded between two soft layers of lens material. The electronics lie outside of both the pupil and the iris so there is no damage to the eye.

There is a wireless antenna inside of the contact that is thinner than a human hair, which will act as a controller to communicate information to the wireless device. The controller will gather, read, and analyze data that will be sent to the external device via the antenna. Power will be drawn from the device which will communicate data via the wireless technology RFID. Plans to add small LED lights that could warn the wearer by lighting up when the glucose levels have crossed above or below certain thresholds have been mentioned to be under consideration.

By,
G. Nandhini
17MCA09

EDGE COMPUTING IN TELECOM

Edge computing in telecom, provides execution resources (compute and

storage) for applications with networking close to the end users, typically within or at the boundary of operator networks.



Edge computing can also be placed at enterprise premises, for example inside factory buildings, in homes and vehicles, including trains, planes and private cars. The edge infrastructure can be managed or hosted by communication service providers or other types of service providers.

The main benefits edge solutions provide include low latency, high bandwidth; device processing and data offload as well as trusted computing and storage.

The role of Edge in 5G

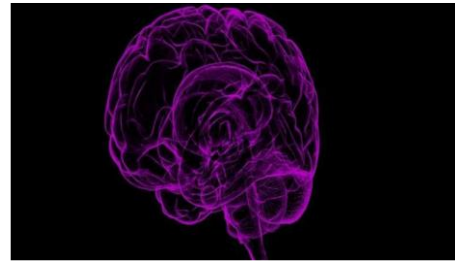
By 2023, 5G will make up around one-fifth of all mobile data traffic, where 25% of the use-cases will depend on edge computing capabilities.

The majority of the new 5G revenue potential is expected to come from enterprise & IoT services, of which many will rely on edge computing.

For consumers, new virtual reality (VR) and gaming applications will leverage the improved user experience that edge computing can enable. Therefore edge capabilities will be a fundamental technology as part of a 5G infrastructure for any service provider.

By,
M. Roshan
17MCA10

CRISPR TWINS MAY BE THE FIRST HUMANS WITH 'ACCIDENTALLY' ENHANCED BRAINS



Chinese twins, named Lulu and Nana, had their genes altered before birth with a gene-editing tool called CRISPR in order to make them immune to acquiring HIV that causes AIDS. Now, scientists believe that the twin girls, born last year, may have had their cognition and memory enhanced in the process.

A new research reveals that the same alteration introduced into the girls' DNA, not only makes mice smarter but also improves human brain recovery after stroke. This can also be linked to greater success in school at a later stage, MIT Technology Review reported.

It is due to the deletion or mutation of the gene called CCR5 that the researchers believe impacts memory and the brain's ability to form new connections. HIV requires the CCR5 gene to enter human blood cells.

When Chinese biophysics researcher Dr. Jiankui altered the gene of the human embryo he did not intend on creating the first Meta humans with enhanced brains. However, Alcino J. Silva, a neurobiologist at UCLA, believes, Dr. Jiankui may have inadvertently done so regardless of the intent.

While it remains to be proven if Lulu and Nana are actually the first humans with altered genes leading to enhanced brains, CRISPR remains a controversial use of science and technology regarded by the critics as 'irresponsible' and a potential reason for a biotechnology race between China and the US.

By,
G. Maria Arul Raj
17MCA11

MOVING COMMUNICATIONS TO CLOUD THE NEXT MOVE FOR IT LEADERS



Many IT leaders consider shifting communications to cloud risky. The reality is that not moving to cloud is riskier and will cause companies to fall behind. But what is most imperative is that leaders chose the best cloud model for their business.

Digital transformation (DX) has moved beyond buzzword level today. Digital advancements are creating new products, services and transforming business operations. These are enabling companies to enhance customer service, generate more revenue, reduce costs and achieve higher levels of efficiency to leapfrog ahead of competition. According to ZK Research 2019 IT Priorities Study,

90% of organizations have at least one digital initiative underway.

'Cloud' is broad, solutions can vary widely from vendor to vendor and there is no 'best' solution. Rather, the right decision will be the one that fits the organization's business model best. Smaller organizations with small IT teams may prefer to offload everything to a CCaaS/UCaaS provider. Very large companies that need to meet strict compliance mandates will seek to deploy a private cloud. The bulk of companies will want the best of both worlds; a hybrid approach.

By,
V. Anand Kumar
17MCA14

OPPO SMARTWATCH'S PURPORTED 3D GLASS SCREEN LIVE PHOTOS SURFACE



In December last year, Oppo said it would be investing a lot of money into R&D and also expanding its wearable portfolio, to include smart watches in 2020. We've been hearing rumors since then about Oppo's upcoming smart watch and we even have an official render of what it could look like, courtesy Oppo VP Brian Shen. The latest leak involves live photos of what's reported to be the 3D glass covering for the smart watch. The shape of the panel looks similar to the render shared previously, so there is a chance it could be

the real thing. Oppo's new smart watch should debut alongside the Find X2, which is reportedly launching on March 6.

Three images showing the new 3D glass was posted on Slash leaks, as reported by Gizmochina. The images show someone holding the rectangular glass panel with a thick black border around it. The 3D shape is visible from these photos and it looks very similar to the render shared by Oppo VP Brian Shen, back in January. Earlier this month, Shen teased another photo of the Oppo Watch this time, shrouded in darkness with just a portion of the display and the watch hands visible. He also mentioned that it would be a "game changer," that could hint at the 3D glass design of the watch. The poster of the images on Slash leaks mentioned that it would have the same hyperboloid screen as the upcoming Oppo Find X and that; such a screen was quite difficult and expensive to manufacture.

We think Oppo will unveil its smart watch during the launch of the Find X2. It was supposed to have taken place at MWC 2020, but has been pushed back to March 6 most likely. We might see more hardware announcements during the launch next month.

By,
J. Radha Mary
17MCA15

NTT DATA: DELIVERING INNOVATIVE TECHNOLOGIES FROM TOKYO TO LONDON

In June 2019 NTT DATA – one of the world's leading tech-services companies – committed to an investment of £68 million into the UK to accelerate innovation in the tech industry. UK businesses are delivering better employee and customer experiences by taking advantage of the potential of robotics, AI,

augmented reality and other fast-growing technologies, with the help of NTT DATA.



NTT DATA's Government Sector has successfully partnered with a leading provider of standards and auditing to redesign their global reaching website. It is a key tool promoting a great experience for countries interested in services delivered by the UK. The Department for International Trade (DIT) assisted NTT DATA's investment journey by providing specialist support and information about the UK's innovation ecosystem and the best locations for an innovation centre.

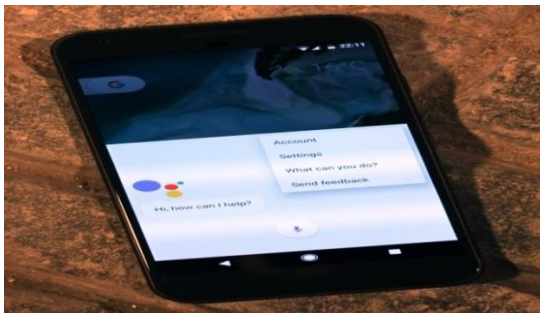
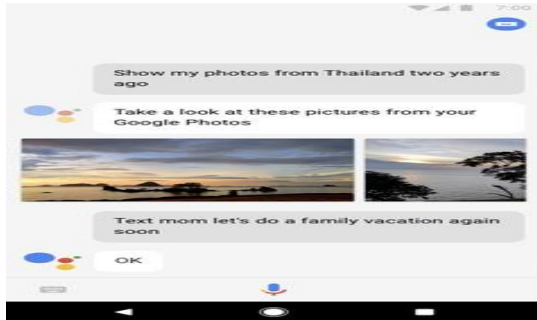
The UK is the largest IT services market in Western Europe, which made it an attractive destination for NTT DATA to expand its operations to. The UK's ecosystem of specialist start-ups, innovators and entrepreneurs make it a competitive market for companies from across the globe. Fuelled by strong demand in the public services, telecoms, financial services, and insurance industries, NTT DATA has grown at an exponential rate since entering the UK in 1995.

By,
G. Revathi
17MCA16

GOOGLE ASSISTANT

Google Assistant is an artificial intelligence-powered virtual assistant developed by Google that is

primarily available on mobile and smart home devices. Unlike the company's previous virtual assistant, Google Now, the Google Assistant can engage in two-way conversations.



Assistant initially debuted in May 2016 as part of Google's messaging app Allo, and its voice-activated speaker Google Home. After a period of exclusivity on the Pixel and Pixel XL smart phones, it began to be deployed on other Android devices in February 2017, including third-party smart phones and Android Wear (now Wear OS), and was released as a standalone app on the iOS operating system in May 2017. Alongside the announcement of a software development kit in April 2017, the Assistant has been, and is being, further extended to support a large variety of devices, including cars and third party smart home appliances. The functionality

of the Assistant can also be enhanced by third-party developers.

Users primarily interact with the Google Assistant through natural voice, though keyboard input is also supported. In the same nature and manner as Google Now, the Assistant is able to search the Internet, schedule events and alarms, adjust hardware settings gather visual information through the on the user's device, and show information from the user's Google account. Google has also announced that the Assistant will be able to identify objects and device's camera, and support purchasing products and sending money, as well as identifying songs.

At CES 2018, the first Assistant-powered smart displays (smart speakers with video screens) were announced, with the first one being released in July 2018. In 2020, Google Assistant is already available on more than 1 billion devices. Google Assistant is available in more than 90 countries; the Google Assistant now helps more than 500 million people every month.

By,
G. Chithirai
17MCA17

GOOGLE'S AUTOML



Google's AutoML Is a tool that simplifies the process of creating machine learning models and makes the technology accessible to a wider audience. Earlier this

year, IBM launched AutoAI, a platform for automating data preparation, model development, feature engineering, and hyper parameter optimization.

Google's AutoML system recently produced a series of machine-learning codes with higher rates of efficiency than those made by the researchers themselves. In this latest blow to human superiority the robot student has become the self-replicating master.

By,
Festo Daudi Mwaipopo
17MCA19

HTC TO LAUNCH ITS FIRST 5G PHONE IN 2020

HTC will release a 5G phone this year, the company's CEO Yves Maitre reportedly told a publication. In an interview, he shared that HTC will invest heavily in the 5G connected applications segment and as it sees many development opportunities in the Taiwan market. As of now, there are no details on the specifications of the phone or when it will be announced but it is being suspected that HTC will work with Qualcomm to make this possible. According to a report of Mashdigi, Yves did not clarify on what their plans for the 5G phone will be, so it is uncertain whether the company will launch a mid-tier 5G smart phone or multiple devices in different price segments.



Over a year ago, HTC worked with US wireless operator Sprint to get into the 5G network market after which it released its 5G hub.

HTC is also investing in virtual vision content that will be powered by 5G. Reportedly, the company will continue to focus on the current virtual vision applications with respect to the HTC Vive Cosmos series and the HTC Vive series. Along with that, it will work on its augmented reality applications. The company believes there is still room for growth when it comes to augmented reality applications so it will take its time with new launches of related applications.

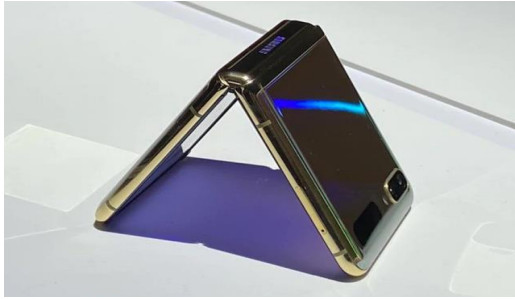
HTC is expected to be present at the Game Developers Conference (GDC) 2020 scheduled for March 16 in San Francisco. Its Vive unit will hold the Vive Developer Summit on March 17. It is expected that HTC Vive Cosmos Elite, Vive Sync, HTC Vive Cosmos Play and HTC Vive Cosmos XR will be present on the show floor. As of now, it seems that the company will still attend the event unlike Sony and Face book which chose to back out of the conference over corona virus concerns.

By,
M.Padhma
17MCA20

SAMSUNG GALAXY Z FLIP SELLS OUT WITHIN MINUTES DURING ITS FIRST PRE-ORDER SALE IN INDIA

Samsung's first pre-order sale for the Galaxy Z Flip happened on Friday. The foldable phones sell out within minutes of the sale. The brand will release the Galaxy Z Flip phone starting February 26. Read on

to find out the second pre-order sale for the Flip phone!



Samsung Galaxy Z Flip: Specs and Features

The Galaxy Z Flip comes with two screens in total. First is the main screen that measures 6.7-inch Dynamic AMOLED display with FHD+ resolution. Samsung calls it Infinity-O panel. Second is the tiny cover display that you see when the phone is folded. The cover display measures 1.1-inch and uses Super AMOLED panel.

For your information, the cover display is only to see notifications or time or you can accept or deny the call through.

The Galaxy Z Flip gets a SIM tray where you can insert a single nano SIM card. The phone supports e-SIM in case you want to use two phone numbers on it.

For the cameras, the Galaxy Z Flip features a dual rear camera system which includes 12-megapixel regular camera paired up with 12-megapixel ultra-wide angle camera. There's a 10-megapixel front shooter as well.

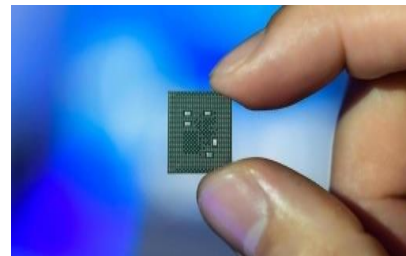
The Galaxy Z Flip is powered by Snapdragon 855+ chipset. It runs on Android 10 topped with OneUI 2.0 software. The phone comes in a single storage option, that is, 8GB of RAM paired with 256GB of internal storage.

Samsung Galaxy Z Flip phone gets 3300mAh battery with 15W fast charging system.

By,
R. Brightlin
17MCA21

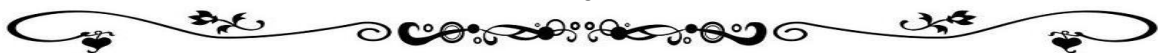
QUALCOMM SNAPDRAGON 865

Qualcomm's flagship Snapdragon 855 had a more powerful successor in the form of the Snapdragon 855 Plus and it convinced many to upgrade to the new models for gaining better performance, even though the gain was marginal. Qualcomm seems to have caught the idea for keeping the cash flow steady and this year too, we might have a Plus variant of the Snapdragon 865.



The Snapdragon 865 that we are about to witness in most premium phones this year promises big gains in performance. Hence, chances are that the Plus variant of this one will end up with slightly higher CPU performance and some notable gains the graphics performance. However, it will be interesting to see what modem configuration Qualcomm chooses for the Plus variant.

The Snapdragon 865 supports 5G but it does not have an embedded 5G modem. Hence, every phone using this chip will have to come with the Snapdragon X55 5G modem, which translates into more space requirement inside. Chances are that Qualcomm might embed the X55 in the 865 Plus for performance gains. Currently,



the only phones to make use of the Snapdragon 865 are the Samsung Galaxy S20 series and Xiaomi's Mi 10 series. Vivo's iQOO is set to launch an affordable gaming phone with this chip in a few days while Realme is also expected to announce its premium flagship phone.

By,
K. Ramajanani
17MCA22

'MAD' MIKE HUGHES DIES IN ROCKET CRASH



Mike Huges, the self-taught rocket scientist and self-avowed flat-Earth conspiracy theorist, died Saturday morning (Feb. 22) during an attempt to launch a homemade rocket outside Barstow in San Bernardino County, California, according to news reports.

"Mad Mike," as he called himself, was attempting to reach an altitude of 5,000 feet (1,500 meters) Saturday. He rode his rocket into the sky, but something went wrong and as he rocketed into the air on top of a column of steam, a green parachute seemed to rip off from the rocket, as seen in a video posted to Twitter by freelance journalist Justin Chapman; Hughes then fell to his death, said Darren Shuster, his public relations representative, as reported by the LA Times. This wasn't Hughes' first rodeo, as the self-taught engineer had made

two other attempts, the latest of which was supposed to launch in August 2019. That attempt was grounded by bad weather. Before that, the racketeer had a successful (albeit bumpy) launch in March 2018, when his homemade rocket reached 1,875 feet (572 m) in altitude over Amboy, California. During that launch, Hughes had to deploy two parachutes to save himself from smashing into the desert. Even so he plummeted back to Earth at 350 mph (563 km/h). He got out of that one with just a sore back, he said at the time.

And he knew that, saying he would need to soar past the so-called Karman line — where the sky ends and space begins, or roughly 62 miles (100 kilometers) above Earth — to see the curvature with his own eyes.

By,
J. Jegan
17MCA23

AUGMENTED REALITY (AR)



Virtual Reality for automotive engineering design/ Image: Susan Fortune for Interesting Engineering

Advances in Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR), all of which can be summarized in R+, will continue to be at the forefront of attention during 2019 with some fascinating new practical applications for industries.

R+, which once was only found in video gaming has been quickly advancing to become a useful tool in industries such

as engineering design, manufacturing, healthcare, space exploration, and many others.

In 2019, Virtual Reality is going to open up to innovative industrial applications that will change how people work and collaborate across geographies. Augmented Reality has been rising in the Virtual Reality's shadow for the past year. But in 2019, AR is set to grow exponentially.

By,
M. SivaRanjani
17MCA24

Global Internet of Things (IoT) security breach

Anything connected becomes vulnerable. Hackers never sleep. Everyone in the cyber security industry knows that. As long as you connect something to the Internet it immediately becomes vulnerable.

In the past years, we have seen how hackers have turned to unsecure Internet of Things (IoT) devices to create an extensive botnet which then they could use to push enough traffic to take down Dyn, the DNS provider. As a way to refresh your memory, here is how the DDoS attack using IoT devices happened in 2016.



A quick look at the news tells us that not much has been learned. However, the great number of security breaches occurred during 2018 should serve as an alert of what can happen at a global scale in 2019 if organizations don't take the necessary precautions.

Analyst firm Gartner forecasts that 20.4 billion connected things will be in use worldwide by 2020. I will call this the Internet of Autonomous Things (IoAT) there is a good chance that many of these things will show a certain level of weak security.

In 2019, it will be paramount for IoT manufacturers and all of their supply chain to dramatically increase the security in all the products that come out to market. It can be a connected refrigerator, a robot, a drone, a vehicle, or a health tracker.

Manufacturers must implement a level of security that keeps hackers at bay. Otherwise, there is a good chance we are going to witness a global IoT security breach in 2019.

By,
K. Suganthavenkateswari
17MCA25

SNAKE ROBOT



Today ever widening circles will take you on a little journey of possibility when it comes to pure ingenuity. Did you ever stop to

ask yourself why most of us envision the human form when we think of the word "Robot?"

What if the real potential of robotics lies with thinking outside that box? Here's your introduction to snake robotics! Having the flexibility and movements of a slithering reptile allows these robots to squeeze into spaces that their human-form, mechanical cousins, and we humans, haven't been able to explore.

They can do so much more! We will be able to identify structural problems in hidden places, perform minimally invasive surgery, and find survivors in fragile search and rescue missions (to name a few applications). This impressive innovation, which obviously has adopted its looks from a little friend in nature, is just one incredible example of bio mimicry; a growing field of science at the intersection of engineering, design, and biology.

By,
M. Arun Kumar Subash
18MCA01

CONTROLLING LIGHT WITH LIGHT

"Most computation right now uses hard materials such as metal wires, semiconductors and photodiodes to couple electronics to light," said Amos Meeks, a graduate student at SEAS and co-first author of the research. "The idea behind all-optical computing is to remove those rigid components and control light with light. Imagine, for example, an entirely soft, circuitry-free robot driven by light from the sun."

Here, researchers developed a fundamentally new material that uses reversible swelling and contracting in a hydro

gel under low laser power to change the refractive index.



"Self-regulated, adaptive materials capable of optimizing their own properties in response to environment replace static, energy-inefficient, externally regulated analogs. Our reversibly responsive material that controls light at exceptionally small intensities is yet another demonstration of this promising technological revolution."

By,
G. Arun Vishnu Kumar
18MCA02

FREE WI-FI TO ALL VILLAGES CONNECTED VIA BHARATNET TILL MARCH 2020: PRASAD



Wi-Fi services being provided through BharatNet in villages across India will be free of charge till March 2020, Telecom and Information Technology Minister Ravi Shankar Prasad said. "We have already connected 1.3 lakh gram panchayats through BharatNet optical fiber network. Our target is to take this to 2.5 lakh gram panchayats. To promote utilization of BharatNet services, we will provide Wi-Fi free in all villages

connected through BharatNet till March 2020," the minister said.

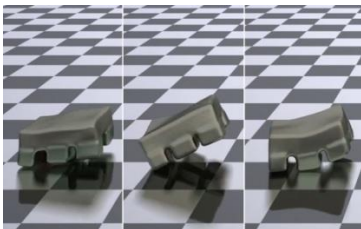
Currently, 48,000 villages connected under the BharatNet project have Wi-Fi access. The minister said all common service centers (CSCs) will offer banking services. As such, CSCs act as access points for delivery of digital services and the number of these centers has increased from about 60,000 in 2014 to 3.60 lakh currently.

Haryana itself has 11,000 CSCs offering an array of 650 services. CSC e-Governance Services India is implementing the Digital Village initiative in rural and remote areas of the country.

By,
K. Bala Sekaran
18MCA03

TOWARD MORE EFFICIENT COMPUTING, WITH MAGNETIC WAVES

MIT researchers have devised a novel circuit design that enables precise control of computing with magnetic waves with no electricity needed.



Computers rely on massive amounts of electricity for computing and data storage, and generate a lot of wasted heat. In search of more efficient alternatives, researchers have started designing magnetic-based "spintronic" devices, which use relatively little electricity and generate practically no heat.

Spintronic devices leverage the "spin wave" a quantum property of

electrons in magnetic materials with a lattice structure. This approach involves modulating the spin wave properties to produce some measurable output that can be correlated to computation. Until now, modulating spin waves has required injected electrical currents using bulky components that can cause signal noise and effectively negate any inherent performance gains.

By,
S. Muthulakshmi
18MCA04

LEAP MOTION



Multi-touch desktop is a (miserably) failed product due to the fact that hands could get very tired with prolonged use, but Leap Motion wants to challenge this dark area again with a more advanced idea. It lets you control the desktop with fingers, but without touching the screen.

It's not your typical motion sensor, as Leap Motion allows you to scroll the web page, zoom in the map and photos, sign documents and even play a first person shooter game with only hand and finger movements. The smooth reaction is the most crucial key point here. More importantly, you can own this future with just \$70, a price of a premium PS3 game title!

If this device could completely work with Oculus Rift to simulate a real-

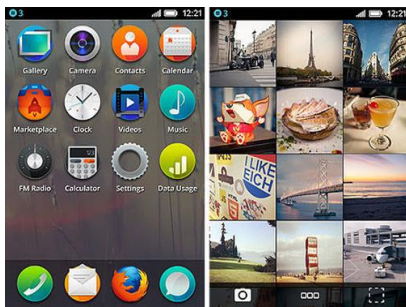
time gaming experience, gaming is going to get a major make-over.

By,
S. Esakkiammal@Backiya
18MCA05

FIREFOX OS

iOS and Android are great, but they each have their own rules and policies that certainly inhibit the creative efforts of developers. Mozilla has since decided to build a new mobile operating system from scratch, one that will focus on true openness, freedom and user choice. It's Firefox OS.

Firefox OS is built on Gonk, Gecko and Gaia software layers – for the rest of us, it means it is built on open source, and it carries web technologies such as HTML5 and CSS3.



Developers can create and debut web apps without the blockade of requirements set by app stores, and users could even customize the OS based on their needs. Currently the OS has made its debut on Android-compatible phones, and the impression so far, is great.

You can use the OS to do essential tasks you do on iOS or Android: calling friends, browsing web, taking photos, playing games, they are all possible on

Firefox OS, set to rock the smart phone market.

By,
M. Sankara Gomathi
18MCA06

BREAKTHROUGH TECHNOLOGIES



For the first time in its 18-year history, IT Tech Reviews 2019 breakthrough list has been picked by a contributing editor, Microsoft founder, and former CEO Bill Gates.

Gates correctly predicted the rise of the home computer, the graphical desktop operating system, and the internet, so he seems like natural choice for the esteemed publications first guest editor.

MIT Technology Review creates the list every year, highlighting where it feels technological developments will most impact on human life, during the coming year

The move towards using editor represent another paradigm shift in this year list rather than focusing on technologies that are likely to extend human life greater emphasis is put on those that could also improve it.

By,
J. Mary Disilva Princy
18MCA09

BRAIN-INSPIRED COMPUTING



While computers have become smaller and more powerful and supercomputers and parallel computing have become the standard, we are about to hit a wall in energy and miniaturization.

Now, researchers have designed a 2D device that can provide more than yes-or-no answers and could be more brain-like than current computing architectures.

"The human brain operates seamlessly on 20 watts of power," said Das. "It is more energy efficient, containing 100 billion neurons, and it doesn't use von Neumann architecture."

The researchers note that it isn't just energy and heat that have become problems, but that it is becoming difficult to fit more in smaller spaces.

By,
B. Dharrani
18MCA10

NEW-WAVE NUCLEAR POWER

Advanced fusion and fission reactors are edging closer to reality. New nuclear designs that have gained momentum in the past year are promising to make this power source safer and cheaper.



Among them are generation IV fission reactors, an evolution of traditional designs; small modular reactors; and fusion reactors, a technology that has seemed eternally just out of reach. Developers of generation IV fission designs, such as Canada's Terrestrial Energy and Washington-based Terra Power, have entered into R&D partnerships with utilities, aiming for grid supply (somewhat optimistically, maybe) by the 2020s.

Small modular reactors typically produce in the tens of megawatts of power (for comparison, a traditional nuclear reactor produces around 1,000 MW). Companies like Oregon's NuScale say the miniaturized reactors can save money and reduce environmental and financial risk.

By,
G. Sri Lakshmi
18MCA11

VIRTUAL REALITY (VR)

Virtual Reality (VR) immerses the user in an environment while Augment Reality (AR) enhances their environment. Although VR has primarily been used for gaming thus far, it has also been used for training, as with Virtual Ship, simulation software used to train U.S. Navy, Army and Coast Guard ship captains.

Both have enormous potential in training, entertainment, education, marketing, and even rehabilitation after an injury. Either could be used to train doctors

to do surgery, offer museum-goers a deeper experience, enhance theme parks, or even enhance marketing, as with this Pepsi MaxBusShelter.



According to an article at Monster.com, the demand for job candidates with VR knowledge is up 37 percent, but the potential employees are in short supply. That demand will only increase. There are major players in the VR market, like Google, Samsung, and Oculus, but plenty of start-ups are forming and they will be hiring or trying to, in light of the shortage. Getting started in VR doesn't require a lot of specialized knowledge. Basic programming skills and a forward-thinking mindset can land a job, although other employers will be looking for optics as a skill-set and hardware engineers as well.

By,
M. Maha Lakshmi
18MCA12

BLOCKCHAIN

The rate at which Block chain is growing has placed it at a pivotal point in the list of top technology trends 2020. Block chain technology is definitely here to stay. While prevalent in only a handful of industries right now, by 2020 the world will see its mass adoption.

A number of new elements and processes will be added in the present day's most disruptive technology. While there is a fair chance that ICOs won't stick around

that long as might see a fast death because of the stringent regulations.



Crypto currencies, the important Block chain element, will also find itself divided in a number of currencies and would be floated in the market just like fiat currencies. People who are currently unaware of what Block chain and Crypto currencies and where they can spend them, will start doing their everyday transactions with them – The future will see Block chain being explored beyond Crypto currencies.

By
S. Thangamani Santhosh
18MCA13

GOOGLE DRIVERLESS CAR



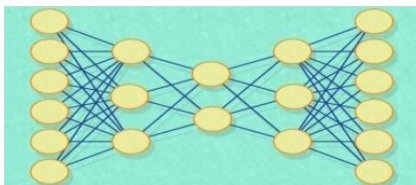
While the data source is still a secret recipe, the Google driverless car is powered by artificial intelligence that utilizes the input from the video cameras inside the car, a sensor on the vehicle's top, and some radar and position sensors attached to different positions of the car. Sounds like a lot of effort to mimic the human intelligence in a car, but

so far the system has successfully driven 1609 kilometers without human commands.

"You can count on one hand the number of years it will take before ordinary people can experience this." Google co-founder, Sergey Brin said. However, innovation is an achievement; consumerization is the headache, as Google currently face the challenge to forge the system into an affordable gem that every worker with an average salary could benefit from.

By,
B. Chockanathan
18MCA14

A NEW MACHINE-LEARNING SYSTEM FOR ANALYSIS METHOD



A new machine-learning system for analyzing materials "recipes" uses a variation auto encoder, which squeezes data (left-hand circles) down into a more compact form (center circles) before attempting to re-expand it into its original form (right-hand circles). If the auto encoder is successfully trained, the compact representation will capture the data's most salient characteristics. Image: Chelsea Turner/MIT.

Sparse and scarce

Like many of the best-performing artificial-intelligence systems of the past 10 years, the MIT researchers' new system is a so-called neural network, which learns to perform computational tasks by analyzing huge sets of training data. Traditionally,

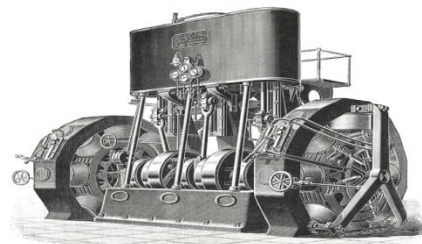
attempts to use neural networks to generate materials recipes have run up against two problems, which the researchers describe as sparsity and scarcity.

Artificial bottleneck

The purpose of the MIT researchers' network is to distill input vectors into much smaller vectors, all of whose numbers are meaningful for every input. To that end, the network has a middle layer with just a few nodes in it — only two, in some experiments. The goal of training is simply to configure the network so that its output is as close as possible to its input. If training is successful, then the handful of nodes in the middle layer must somehow represent most of the information contained in the input vector, but in a much more compressed form. Such systems, in which the output attempts to match the input, are called "auto encoders." During training, the weight that the network gives example recipes varies according to their similarity scores.

By,
S. Chockalingam
18MCA15

DYNAMO ENGINE



Electric generator

Electric generators transform kinetic energy into electricity. This is the most used form for generating electricity and is based

on Faraday's law. It can be seen experimentally by rotating a magnet within closed loops of conducting material (e.g. copper wire).

Electrochemistry

Large dams such as Hoover Dam can provide large amounts of hydroelectric power; it has 2.07 GW capabilities. Electrochemistry is the direct transformation of chemical energy into electricity, as in a battery. Electrochemical electricity generation is important in portable and mobile applications. Currently, most electrochemical power comes from batteries. Primary cells, such as the common zinc-carbon batteries. Osmotic power is a possibility at places where salt and fresh water merge.

By,
V. Girija
18MCA17

Edge Computing



One of the least talked about but one of the latest upcoming technologies will take the center stage the day IoT become a mainstream technology. While businesses are presently working comfortably in their Cloud setup, things are going to change pretty soon.

Edge computing is a computing element where everything from information processing, content collection and its delivery are situated close to the source of information.

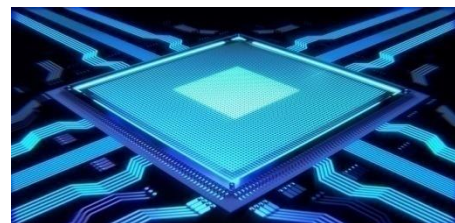
Enterprises, to be a part of the future technological trends should start using edge based design patterns in the infrastructure architectures, especially in those that come with notable IoT elements. For achieving this, the starting point can be using edge-specific and collocation networking abilities.

Being a prominent part of a new technology of 2020, we are expected to witness increased attention being paid to edge computing for enabling intelligent networks, in which the connected devices will be performing the necessary analytics right at the location and would use the results for performing the specific actions. It will all happen within a few milliseconds, as compared to a few hundred milliseconds – the time it takes today with cloud computing. The promise that edge computing comes with, makes it an important addition in the top technology trends 2020 list.

By,
P. Karthikeyan
18MCA18

TINY AI

AI has a problem: in the quest to build more powerful algorithms, researchers are using ever greater amounts of data and computing power, and relying on centralized cloud services. This not only generates alarming amounts of carbon emissions but also limits the speed and privacy of AI applications.



But a countertrend of tiny AI is changing that. Tech giants and academic researchers are working on new algorithms to shrink existing deep-learning models without losing their capabilities. These advances are just starting to become available to consumers.

Last May, Google 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.

All this could bring about many benefits. Existing services like voice assistants, autocorrect, and digital cameras will get better and faster without having to ping the cloud every time they need access to a deep-learning model. Tiny AI will also make new applications possible, like mobile-based medical-image analysis or self-driving cars with faster reaction times. Finally, localized AI is better for privacy, since your data no longer needs to leave your device to improve a service or a feature.

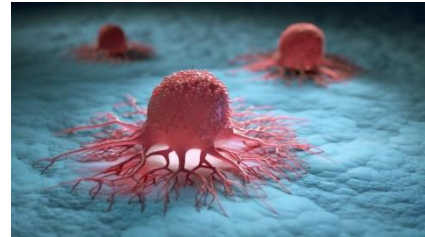
- **Key players:** Google, IBM, Apple, Amazon.

By,
J. Jeniraj
18MCA20

CANCER CAUSING CULPRITS WILL BE CAUGHT BY THEIR DNA FINGERPRINTS

Cancer is caused by genetic changes mutations in the DNA of a cell, allowing the cell to divide uncontrollably. Many

known causes of cancer, such as UV light and tobacco smoking, leave a specific fingerprint of damage in the DNA, known as a mutational signature. These fingerprints can help understand how cancers develop, and potentially, how they can be prevented. However, past studies have not been large enough to identify all potential mutational signatures.



Professor Steven Rozen, a senior author from Duke-NUS Medical School, Singapore, said: "Some types of these DNA fingerprints, or mutational signatures, reflect how the cancer could respond to drugs. Further research into this could help to diagnose some cancers and what drugs they might respond to."

Professor Gad Getz, a senior author from the Broad Institute of MIT and Harvard, and Massachusetts General Hospital, said, "The availability of a large number of whole genomes enabled us to apply more advanced analytical methods to discover and refine mutational signatures and expand our study into additional types of mutations. Our new collection of signatures provides a more complete picture of biological and chemical processes that damage or repair DNA and will enable researchers to decipher the mutational processes that affect the genomes of newly sequenced cancers."

Another study in the Pan-Cancer Project, published in Nature today, discovered that larger, more complex

genetic changes that rearrange the DNA could also act as mutational signatures, and point towards causes of cancer. Researchers from the Wellcome Sanger Institute and the Broad Institute of MIT and Harvard and their collaborators found 16 of these signatures that spanned from rearrangements of single genes to entire chromosomes.

The global Pan-Cancer Project is the largest and most comprehensive study of whole cancer genomes yet. The collaboration has created a huge resource of primary cancer genomes, available to researchers worldwide to advance cancer research.

By,
M.S. Mohudoom Mohamed
18MCA21

THE BIGGEST TECHNOLOGY TRENDS IN 2020

5G data networks:

The 5th generation of mobile internet connectivity is going to give us super-fast download and upload speeds as well as more stable connections. While 5G mobile data networks became available for the first time in 2019, they were mostly still expensive and limited to functioning in confined areas or major cities.



2020 is likely to be the year when 5G really starts to fly, with more affordable

data plans as well as greatly improved coverage, meaning that everyone can join in the fun.

Super-fast data networks will not only give us the ability to stream movies and music at higher quality when we're on the move. The greatly increased speeds mean that mobile networks will become more usable even than the wired networks running into our homes and businesses. Companies must consider the business implications of having super-fast and stable internet access anywhere. The increased bandwidth will enable machines, robots, and autonomous vehicles to collect and transfer more data than ever, leading to advances in the area of the Internet of Things (IoT) and smart machinery.

By
N. Vishnu Priya
18MCA22

HYPER AUTOMATION



Hyper Automation is the totality of an enterprise's automation efforts under one single encompassing umbrella. The term is used by Gartner to highlight that not one but multiple automation technologies, working in congruence, are needed to augment or replace human capabilities in the workforce: "As no single tool can replace humans, hyper automation today involves a combination of tools, including robotic process automation (RPA), intelligent business management software

(iBPMS) and AI, with a goal of increasingly AI-driven decision making.”

Hyper Automation encompasses both AI (analysis of historical data) and automation (rule-based action on real time data) technologies & tools. At Waylay, we’ve always argued that AI and automation (intelligence and action) are two sides of the same coin. with multiple technologies and tools being developed on both sides. It is this coin that now Gartner calls hyper automation.

Most enterprises looking at leveraging IoT opportunities today are first focusing on getting device connectivity and data collection right. Once that’s sorted, the focus turns to using analytics (or more recently, AI technology) to extract valuable business insights from the data. Finally, the last step is showing those insights to different stakeholders on domain-specific and use case-specific UIs.

By,
S. Muthu Lakshmi
18MCA23

DEEP LEARNING ENABLES REAL-TIME IMAGING AROUND CORNERS

Researchers have harnessed the power of a type of artificial intelligence known as deep learning to create a new laser-based system that can image around corners in real time. With further development, the system might let self-driving cars "look" around parked cars or busy intersections to see hazards or pedestrians.

The system can distinguish sub millimetre details of a hidden object from 1 meter away. The system is designed to image small objects at very high resolutions but can be combined with other imaging systems that

produce low-resolution room-sized reconstructions.



"Non-line-of-sight imaging has important applications in medical imaging, navigation, robotics and defense," said co-author Felix Heide from Princeton University.

By,
J. Sinthika Jomy
18MCA24

QUANTUM COMPUTING



Quantum computing is the area of study focused on developing computer technology based on the principles of quantum theory, which explains the nature and behaviour of energy and matter on the quantum (atomic and subatomic) level. Development of a quantum computer, if practical, would mark a leap forward in computing capability far greater than that from the abacus to a modern day super computer, with performance gains in the billion-fold realm and beyond.

The quantum computer, following the laws of quantum physics, would gain enormous processing power through the ability to be in multiple states, and to perform tasks using all possible permutations simultaneously. Current centers of research in quantum computing include MIT, IBM, Oxford University, and the Los Alamos National Laboratory.

By,
P. Narayanan
18MCA25

LIVING ROBOTS BUILT USING FROG CELLS



A book is made of wood. But it is not a tree. The dead cells have been repurposed to serve another need.

"These are novel living machines," says Joshua Bongard, a computer scientist and robotics expert at the University of Vermont who co-led the new research. "They're neither a traditional robot nor a known species of animal. It's a new class of artifact: a living, programmable organism."

In other words, "this study is a direct contribution to getting a handle on what people are afraid of, which is unintended consequences," Levin says -- whether in the rapid arrival of self-driving cars, changing gene drives to wipe out whole lineages of viruses, or the many

other complex and autonomous systems that will increasingly shape the human experience.

By,
K. Samson Morais
18MCA26

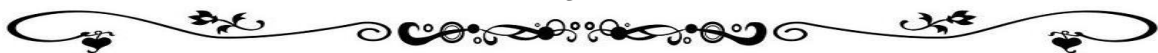
DIGITAL TWINS



A digital twin copies a physical product, process, or service through various IoT devices, pairing the virtual and real worlds. The idea of twins is nothing new. The concept was used as far back as NASA's pairing technology in the Apollo13 project. But digital twin technology will only be able to show its full potential after IoT devices become widespread and affordable.

Digital twins, however, shouldn't be confused with digitization. A digital twin does not substitute a physical item or process with a digital one to make it more accessible, efficient, or secure. It's a precise replica of the physical object and a means of testing and monitoring it without needing to access to or testing on the real thing. The three key factors that have made digital twin technology possible are:

- **Velocity.** IoT devices can relatively easily collect massive volumes of data and transfer it to a digital twin in almost real time.



- **Resolution.** Digital information helps us get a close look at the finest details of physical assets.
- **Learning.** Machine learning algorithms can analyze gathered data and make predictions, refining the digital twin based on gathered information and calibrating the general model and its details.

By,
P. Perachi Selvan
18MCA27

ROBOTIC PROCESS AUTOMATION (RPA)



RPA describes both the software which is used to robotize processes as the practice of defining processes and task that are best suited for RPA and the strategic approach to effectively design and apply the RPA script, macros and algorithms to the process.

Robotic Process Automation consists of 3 major components:

1. ROBOTIC - An entity which is capable of being programmed by computer for doing complex tasks is known as a robot in terms of RPA this task would be to mimic human actions.

2. PROCESS - A process is sequence of actions/activities or steps/tasks taken in order to achieve a particular end.

3. AUTOMATION - When a task an activity happens automatically without human intervention.

ADVANTAGES

1. Reducing the “pains” and costs of repetitive tasks.
2. Higher customer and employee satisfaction.
3. Enhanced quality, productivity and efficiency.

By,
S. Subashini
19MCA01

COGNITIVE CLOUD COMPUTING (CC)

A cognitive computer combines artificial intelligence and machine learning algorithms, in an approach which attempts to reproduce the behaviour of the human brain.

Cognitive computing is an attempt at making computers mimic the way the human brain works and process thoughts.

The need for it arises from the fact that despite tremendous developments in computers, they cannot perform some tasks that humans easily can.



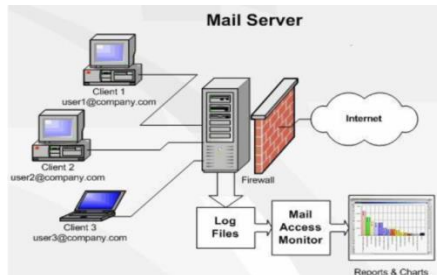
The goal of cognitive computing is to simulate human thought processes in a computerized model.

Using self-learning algorithms that use data mining, pattern recognition and natural language processing, the computer can mimic the way the human thoughts works.

By,
A. Subalakshmi
19MCA02

MAIL SERVER

A mail server (or email server) is a computer system that sends and receives email. In many cases, web servers and mail servers are combined in a single machine.



However, large ISPs and public email services (such as Gmail and Hotmail) may use dedicated hardware for sending and receiving email.

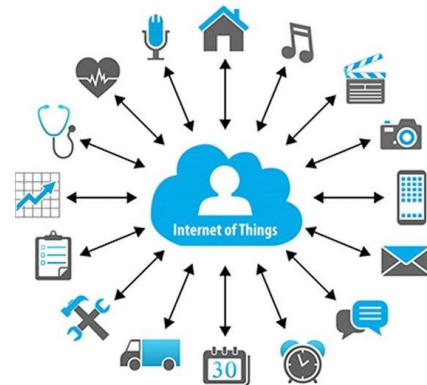
In order for computer system to function as a mail server, it must include mail server software.

By,
A. Gowsalya
19MCA03

INTERNET OF THINGS

The Internet of Things, or IoT, refers to the billions of physical devices around the world that are now connected to the internet, all collecting and sharing data. Thanks to the arrival of super-cheap computer chips and the ubiquity of wireless networks, it's possible to turn anything, from something as small as a pill to something as big as an aeroplane, into a part of the IoT. Connecting up all these different objects and adding sensors to them adds a level of digital intelligence to devices that would be otherwise dumb, enabling them to communicate real-time

data without involving a human being. The Internet of Things is making the fabric of the world around us smarter and more responsive, merging the digital and physical universes.



A light bulb that can be switched on using a smart phone app is an IoT device, as is a motion sensor or a smart thermostat in your office or a connected streetlight. An IoT device could be as fluffy as a child's toy or as serious as a driverless truck. Some larger objects may themselves be filled with many smaller IoT components, such as a jet engine that's now filled with thousands of sensors collecting and transmitting data back to make sure it is operating efficiently. At an even bigger scale, smart cities projects are filling entire regions with sensors to help us understand and control the environment.

The term IoT is mainly used for devices that wouldn't usually be generally expected to have an internet connection, and that can communicate with the network independently of human action. For this reason, a PC isn't generally considered an IoT device and neither is a smart phone -- even though the latter is crammed with sensors.

By,
T. Christina Zipporah
19MCA04

IOT SENSORS

IOT is an emerging array of software controlled sensors and other devices that allow machines to communicate with each other. Hence IOT sensors play an important role in IOT technology.



By IOT sensors, efficiency machine performance can be tracked and allows for predictive maintenance that avoids costly breakdowns or inefficient routine maintenance shut downs.

Furthermore, the rise in demand for consumer electronics such as smart devices (smart TV, smart phones, etc.) is further impelling the growth. Increasing sales of consumer electronics are fuelling the growth of the IOT sensors market worldwide.

The IOT sensors market has the enormous opportunity and scopes in the emerging market of Asia-Pacific and Rest of the world.

However, privacy and security issues are hampering the growth of IOT sensors market. This has led the increase in competitiveness in the IOT sensors market.

By,
M. Muthuselvi
19MCA05

GLAMOS



“BRING YOUR SCREEN TO LIFE WITH THE WORLD’S SMALLEST LiDAR MOTION SENSOR “

DETECTION

RANGESPECIFICATIONDETECTION

SPEEDCABLE m/3.2 ft radius 37x27x34 mm 40 Hz Micro USB

Smallest You’ve Ever Seen: The Smallest **LiDAR** motion sensor, Glamos fits perfectly In your pocket.

Use with Existing Devices: Use Glamos with all kinds of display screens, tiny or large.

Plug and Play: Simply plug to use. Glamos Pro provides Bluetooth Connection.

Lighting Speed: Glamos senses movements at 40Hz of speed.

By,
S. Soosai Amala Jothy
19MCA06

FACIAL RECOGNITION

Facial recognition system is a technology capable of identifying or verifying a person from digital image or a video frame from a video source



It is typically used to access control in security system and can be compared to other biometric technology such as fingerprint or eye.

It is widely adopted due to its contactless and non-invasive process. It's also described as Biometric Artificial Intelligence based application that can uniquely identify a person by analyzing facial textures and shapes.

It's based on many methods, but they work by comparing selected facial features from given images with faces within a database.

By,
M. Bala Vignesh
19MCA08

GEN Z TECHNOLOGY

Gen -Z is a new data access technology designed to provide high speed, low latency, memory-semantics access to data and devices via direct-attached, switched or fabric topologies.

It utilizes memory-semantic communications to move data from data

between memories on different components with minimal overhead.

Memory-semantics communication are extremely efficient and simple, which are critical to delivering optimal performance and power consumption.



Gen-Z components use low-latency read and write operations directly to access data, and use wide variety of advanced operations to move data.

Its goal is to provide building blocks to create high-performance, low-latency solutions. Gen-Z's open specification allows gen-z to be integrated into any solution free of charge and with no constraints on re-use.

By,
S. Shivani
19MCA09

INTELLIGENT APPS (I-APPS)

I-Apps are pieces of software written for mobile devices based on artificial intelligence, aimed at making everyday tasks easier.



- This involves tasks like organizing and prioritizing emails, scheduling meetings, logging interactions, content, etc. some familiar examples of I-Apps are catboats and virtual assistants.

As these applications become more popular, they will come with the promise of jobs and fat paychecks.

By,
M. Raja Sekar
19MCA10

ZUTA POCKET PRINTER

The wireless printer works for about an hour and is rechargeable via micro USB.

Users can print on all sizes of paper and it works without drivers and can print from Macs, PCs iOS and Android. It works by travelling across the surface of a piece of paper.



It was designed by Israel's Zuta Labs; the device is intended to provide users with a means of printing on the go. The printer is available in white and black colors. It comes with a print cartridge that is good for at least 100 pages. Additional cartridges are available for pre-order. Weighing only 350 grams this printer is light enough to carry in a bag and makes printing on the go a reality.

This will come in handy for students and other professionals who tend to find themselves unexpectedly looking for a place

to print documents during the day. The printer comes in two colors and will initially only print in grayscale. It's estimated that the inkjet will last for over 1000 pages and the battery for over an hour when fully charged.

By,
S. Beno
19MCA11

AUTONOMOUS AIR TAXI (AAT)

The Autonomous Air Taxi (AAT) is an 18-rotor drone taxi that took to the skies recently. The AAT comes as a partnership between Dubai and the German firm Volocopter. The company claims to be the world's first "self-flying taxi service." The drone flew upwards of 200 meters during its first public test. The Volocopter is the first manned, fully electric, vertical takeoff and landing aircraft. This vehicle is designed to carry two people.

The autonomous air taxi has a



variety of unique features highlighted by top security and safety standards, and multiple redundancies in all critical components such as propellers, motors, power source, electronics and flight controls.

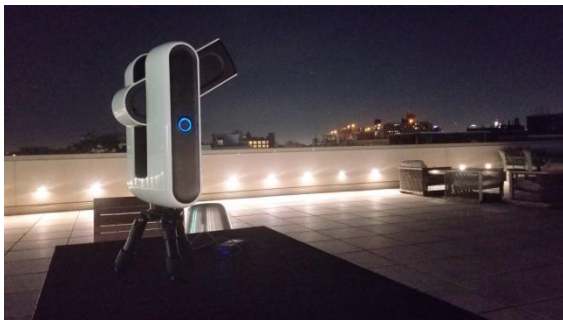
It is also fitted with a full aircraft emergency parachute, nine independent battery systems, battery quick-

change & plug-in system, and fast battery charging time of 40 minutes.

"The test run of the first Autonomous Air Taxi capable of carrying two passengers is in implementation of the directives of His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to transform Dubai into the smartest city worldwide," said Mattar Al Tayer, Director-General and Chairman of the Board of Executive Directors of Roads and Transport Authority (RTA).

By,
B. Ram Praveen
19BCA01

STELLINA SMART TELESCOPE MAKES ASTROPHOTOGRAPHY A BREEZE



The stellina smart telescope is a fully automated tabletop telescope that makes astrophotography a breeze. A swanky new telescope offers a whole new way to observe the cosmos. With automated controls and a Smartphone app instead of an eyepiece, the stellina smart telescope takes all the hassle out of sky watching-but it comes at a hefty price. Stellina is fully automated

astrophotography telescope about the size of backpack.

You can quickly and easily set it up anywhere, even in places with copious amounts of lights pollution, like New York City. When you turn this telescope on it, automatically aligns itself by looking around the sky and identifying objects in the star field.

The telescope has a fixed focal length of 15.75 inches (400 millimeters), which makes it well-suited for observing objects outside of the solar system, but it doesn't work as well for observing planets. If you try to photograph a planet using stellina, the resulting image will be quite small, though the resolution is good enough to make out the cloud banks of Jupiter.

By,
A. Karoline Shilpa
19BCA03

AUTONOMOUS DRIVING



We all have heard about companies like Tesla, Alphabet, and Waymo, and the one thing that is common among them is their aim, which is to craft impeccable autonomous vehicles. The idea of a driverless car in itself generates a considerable amount of excitement. Tesla chief Elon Musk already has the future design of autonomous vehicles and aims to go big in this industry. During an

interview, Elon has stated, "From our standpoint, if you fast forward a year, maybe a year and three months, but next year for sure, we'll have over a million Robo-taxis on the road."

Functions like automated braking, lane-changing, and automation of other in-car systems are on its way to being streamlined with the guidance of data capture and analytics.

Advantages of Autonomous Vehicles

- Reduced Accidents. ...
- Reduced Traffic Congestion. ...
- Reduced CO2 Emissions. ...
- Increased Lane Capacity. ...
- Lower Fuel Consumption. ...
- Last Mile Services. ...
- Transportation Accessibility.

By,
M. Ponraj
19BCA04

PORT SOLAR CHARGER

The Port Solar Charger from XD Design allows gadget geeks to turn any window into a power outlet—simply attach the circular disk, and anytime you've got sunlight you'll be able to keep your devices charged.

The port solar charger includes its lightweight design and USB compatibility. We've reviewed in the pass are powerful, they're also quite bulky and require outdoor placement in direct sunlight. The port solar charger is light (about 3.8oz) and attaches directly to the window frame to avoid shadows cast by frames or window furniture.

Port is a compact portable battery that charges your phone using solar energy. All you need to do is attach it to any window in the house, car, or plane with a

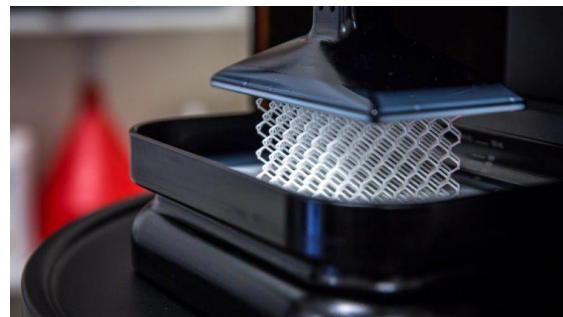
special suction cup. Harvested solar energy is stored in a 1000mAh rechargeable lithium battery.



As others have pointed out, this is a smaller capacity than XD Design's previous Window solar charger, which needed around 13 hours in bright sunlight to fully charge its battery. The reduced size of the port solar charger's battery mean it's better for top offs than full charges. Five LEDs on the charger indicate the amount of battery charge left.

By,
S. Simiyon Raja
19BCA07

FASTEST 3D PRINTER



The CLIP (Continuous Liquid Interface Production) technology was developed by Carbon 3D. The technology itself is based on 3D printing with light-curing resins at a speed that is 20-100 times higher than that of any other available 3D printing solution. Similar to the widely

known SLA technology, the models are printed layer by layer, however, it's a continuous process, since the technology harnesses oxygen as an inhibiting agent. This approach not only decreases production time, but also removes the layering effect in the print structure

The CLIP technology is based on a chemical process, in which oxygen and light are selectively used for resin curing. UV-light causes photo polymerization and starts the cross-linking process in liquid resin, which leads to solidification. Oxygen has the opposite effect. It stops polymerization of liquid resin and prevents curing in that particular area

During the printing process, the printer's build platform continuously rises as the object grows. It does not require any mechanical movements of the structure as in FFF and SLA printing. This way, the continuous sequence is projected and the object is printed without any stops, which makes it more high-quality, since the influence of kinematics on accuracy of layering is eliminated.



By,
R. Gomathi Nayagam
19BCA09

PHREE-MAKE THE WORLD YOUR PAPER

Phree is the world's first unrestricted, high resolution, write-virtually anywhere mobile input device.

We live in a world of screens. Phree lets you to write, draw, annotate, and express yourself in countless other ways. On virtually any surface.

It will easily to connect to all devices: phone, tablet, TV anything with a Bluetooth connection. And phree is compatible with software and apps like office, OneNote, EverNote, Acrobat, Google Handwriting Keyboard and more. When you get one, just write back and send.



INCREDIBLE FEATURES

- Jot down notes and numbers without pulling your phone out. Write messages and emojis with your own handwriting.
- Receive, write and send text messages using phree's display. Summarize, take notes and annotate documents.
- Text entry using handwriting in input in multiple languages.
- Bluetooth mouse, Bluetooth headset including dialling numbers.

By,
M. Sangeetha
19BCA10

ROBOTIC PROCESS AUTOMATION OR RPA

Like AI and Machine Learning, Robotic Process Automation, or RPA, is another technology that is automating jobs.

RPA is the use of software to automate business processes such as interpreting applications, processing transactions, dealing with data, and even replying to emails. RPA automates repetitive tasks that people used to do. These are not just the menial tasks of a low-paid worker: up to 45 percent of the activities we do can be automated, including the work of financial managers, doctors and CEOs.



Although Forrester Research estimates RPA automation will threaten the livelihood of 230 million or more knowledge workers, or approximately 9 percent of the global workforce, RPA is also creating new jobs while altering existing jobs. McKinsey finds that less than 5 percent of occupations can be totally automated, but about 60 percent can be partially automated.

RPA offers plenty of career opportunities, including developer, project manager, business analyst, solution architect and consultant. And these jobs pay well. SimplyHired.com says the average RPA salary is \$73,861, but that is the average compiled from salaries for junior-level developers up to senior solution architects, with the top 10 percent earning over \$141,000 annually. So, if you're keen on learning and pursuing a career in RPA, the Introduction to Robotic Process Automation (RPA) course should be the next step you take to kick-start a RPA career.

By,
M. Samir Mohamed Yoonus
19BCA12

CYBORG GRASSHOPPERS HAVE BEE ENGINEERED TO SNIFF OUT EXPLOSIVES



Move over, sniffer dogs: now there are explosive-sensing grasshoppers. Barani Raman and his colleagues at Washington University in Missouri have tapped into the olfactory senses of the American grasshopper, *Schistocerca Americana*, to create biological bomb sniffers.

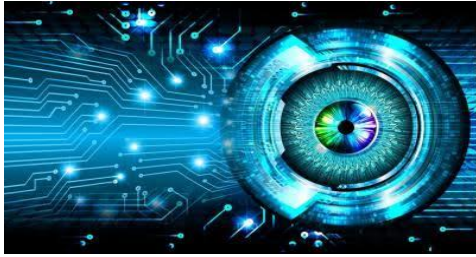
In insects, olfactory receptor neurons in their antennae detect chemical odours in the air. In turn, these neurons send electrical signals to a part of the insect brain known as the antennal lobe. Each grasshopper antenna has approximately 50,000 of these neurons.

To test bomb-sniffing ability, the team puffed vapours of different explosive materials onto grasshopper antennae, including vapours of trinitrotoluene (TNT) and its precursor 2, 4-dinitrotoluene (DNT). As controls, they used non-explosives such as hot air and benzaldehyde, the primary component in the oil of bitter almonds.

By implanting electrodes into the antennal lobes of grasshoppers, the researchers found that different groups of neurons were activated upon exposure to the explosives. They analysed the electrical signals and were able to tell the explosive vapours apart from non-explosives, as well as from each other.

By,
M. Stephen Ebanesar
19BCA14

COMPUTER VISION



Computer vision is an interdisciplinary scientific field that deals with how computers can be made to gain high-level understanding from digital images or videos. From the perspective of engineering, it seeks to automate tasks that the human visual system can do.

Computer vision tasks include methods, or acquiring, processing, analyzing and understanding digital images, and extraction of high-dimensional data from the real world in order to produce numerical or symbolic information, e.g. in the forms of decisions. Understanding in this context means the transformation of visual images (the input of the retina) into descriptions of the world that can interface with other thought processes and elicit appropriate action. This image understanding can be seen as the disentangling of symbolic information from image data using models constructed with the aid of geometry, physics, statistics, and learning theory.

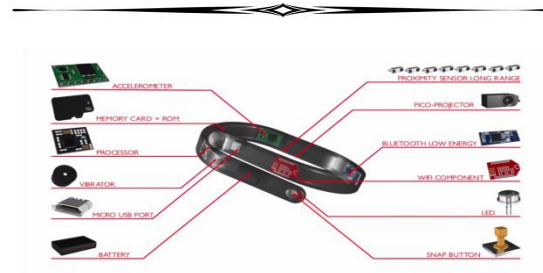
The scientific discipline of computer vision is concerned with the theory behind artificial systems that extract information from images. The image data can take many forms, such as video sequences, views from multiple cameras, or multi-dimensional data from a medical scanner. The technological discipline of computer vision seeks to apply its theories and

models to the construction of computer vision systems.

Sub-domains of computer vision include scene reconstruction, event detection, video tracking, object recognition, 3D pose estimation, learning, indexing, motion estimation, and image restoration.

By,
J. Anston Immanuel
19BCA16

Circlet Bracelet



The Circlet Bracelet is the device which one can wear on the wrist and can do everything which can be done on smart phone or tablet. The actual device can kept anywhere within the range of Bluetooth or wifi. The device is developed and distributed by company called circlet and the name. It is available in two size with memory options of 16GB and 32GB.

Reading news at anywhere; playing games; going through the maps while driving; checking the temperature or weather; stay connected on social media; receiving call while sitting at a distance from the actual physical device; checking mail and replying while taking bath.

How Circlet bracelet works

The Circlet Bracelet uses Pico project which projects smart phone interface on your arm itself.

The sensor sends the information back to the processor which is in the circlet bracelet.

The Circlet Bracelet uses wireless technologies such as Bluetooth low energy or wifi in order to communicate with actual smart phone or tablet device.

By,
S. Jency
19BCA18

USB KILLER

A USB Killer is a device that looks similar to a USB thumb drive that sends high-voltage power surges into the device it is connected to, which can damage hardware components. Its manufacturers claim the device has been designed to test components for protection from power surges and electrostatic discharge; however, there have been several instances of malicious use, and the device is not used for device testing by any major company. The device is often mentioned in articles warning readers against plugging in unknown USB drives.

The device collects power from the USB power source of the component it is connected to in its capacitors until it reaches a high voltage and then it discharges the high voltage onto the data pins. Versions 2 and 3 of the device may generate a voltage of 215 to 220 volts.



This device has been compared to the Ether killer, a family of cables that

feed mains electricity into low-voltage sockets such as RJ45. There are different models of the device, the latest being USB Killer v3. Earlier generations, including USB Killer v2, were developed by a Russian computer researcher with the alias Dark Purple.

Similar homemade devices have been constructed from USB air ionisers and camera flash parts both of which already feature high-voltage circuitry. A more recent version uses the piezo inverter transformer from a CCFL driver with a simple two transistor resonant Royer oscillator, one shot timer and a spark gap as a lightweight way to generate an 1800V sharp pulse more closely simulating a low power electrostatic discharge for mitigation and circuit testing purposes. The prototype has a countdown timer and ascending bleep warning to reduce the chances of accidental or malicious use.

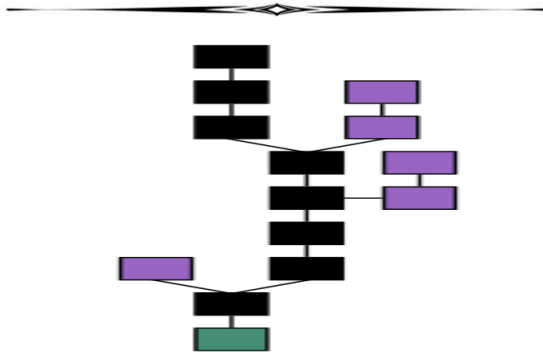
One author believes that the new cryptographic authentication protocol for USB-C authentication announced by the USB Implementers Forum would help to protect against this device by preventing unauthorized USB connections from being made, although some manufacturers now claim that they can bypass this protocol. Some developers of the device believe that an opt coupler can protect against the device but from later testing even applying a short rise time high voltage pulse to the case can damage some sensitive systems.

In April 2019, a 27-year-old Indian former student of the College of Saint Rose, Vishwanath Akuthota, pleaded guilty to destroying 59 computers in his college using a USB killer, resulting in over \$50,000 in damages. He also destroyed seven computer monitors and computer-enhanced podiums. He was sentenced to 12 months in prison,

followed by a year of supervised release for doing so, in August 2019. He was also ordered to pay \$58,471 as restitution charge.

By,
R. Vignesh
19BCA19

BLOCK CHAIN



A block chain originally block chain, 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 (generally represented as a Merkle tree).

By design, a block chain is resistant to modification of the data. It is "an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way". For use as a distributed ledger, a block chain is typically managed by a peer-to-peer network collectively adhering to a protocol for inter-node communication and validating new blocks. Once recorded, the data in any given block cannot be altered retroactively without alteration of all subsequent blocks, which requires consensus of the network majority.

By,
M.S. Siva Subramaniam
19BCA20

INSTA-RING

World's first ring with camera to make photos and 4k videos.



INSTA_RING is a high quality 12 mega pixel photo camera closed in a body of a ring. Once you make picture with INSTA_RING you can immediately transfer it directly to your smart phone (iOS or Android) and post it on your social media. It has 32GB flash storage memory and it's always ready for action.

A tiny space houses some of the most sophisticated technology. Wireless charging. Water and dust resistance and so you can dive up to 50 meters- even in salt water. Sapphire glass on the camera and aerospace grade aluminium on minimalistic and elegant body design defines INSTA_RING as a premium.

With INSTA_RING you can be always ready to make every picture-perfect moment yours.

By,
G. Balasubramaniam
19BCA21

SOLAR ROAD WAY

Solar Roadways is exactly what you're thinking after reading the name. These are solar panels which can be used to pave roads, driveways, sidewalks, or any

surface meant for walking. Solar wafers protected under thick layers of shatter-proof Gorilla Glass can be used to generate electricity from any surface.



These modules come in hexagonal panels which makes replacement super easy. Additionally, Solar Roadways panels can be programmed electronically to show specific markings on the road. The panels can generate enough heat to melt the snow and thus ensure easy walking or driving over them during winters. All of this while saving the Earth and Earth-dwellers from succumbing to the damage caused by greenhouse gases.

By,
J. Siva Subramanian
19BCA24

VIRTUAL PIANO

A virtual piano is an application (software) designed to simulate playing a piano on a computer. The virtual piano is played using a keyboard and/or mouse and typically comes with many features found on a digital piano. Virtual Piano was initially developed online in 2006 when broadband speeds allowed music notes to load and play swiftly. A wide variety of online virtual pianos have now been developed.



Virtual player piano software can simultaneously play MIDI / score music files, highlight the piano keys corresponding to the notes and highlight the sheet music notes.

By,
S. Subash Arumugam
19BCA28

PEOPLE WILL BE ABLE TO FEEL THINGS IN VIRTUAL REALITY

Virtual reality and augmented reality made a big splash in the last decade, but things will only get more interesting from here, starting with the ability to touch and feel the things we see through all the various kinds of computer-generated imagery. While experiments of this sort have been tried in the past, the results were often very bulky and required a ton of power, necessitating large batteries to be attached.

Now new technologies are allowing for tactile “skins” that are far thinner and require far less power. One of these is developed by John A. Rogers and his team at North Western University. Their skin uses tiny, thin discs to create vibrations instead of bigger actuators you might find in a gaming controller or phone, which use a lot more power. What’s more, they’re thin enough they can be charged using near-field technology, meaning less reliance on large batteries, according to Scientific American.



Meanwhile, Swiss researchers at the Ecole Polytechnique Federal de Lausanne (EPFL) have developed their own tactile skin, which works similarly, but uses pneumatic actuators instead and can provide very delicate amounts of tactile feedback all the way up to one Newton of force. These aren't the only two groups working on this, either, so it's likely there will be hepatic feedback patches all the way up to clothing like gloves and, someday, entire suits of second skin.

By,
S. Paravthi
19BCA30

CLICBOT

Anki's true legacy in robotics will only be sufficiently determined over the course of a few years. But a while the start-ups' vision for coxmo ultimately failed, I suspect we'll see its take on the category of home robotics leaving a lasting legacy.

The keyi Tech representative I spoke to at CES was quick to deflect a comparison to the company mostly on the bases that its own modular robots are designed for STEM learning, rather than coxmo's friendly home companion vibe. But the animation –inspired characterization is clear front and center with clicbot. In fact, keyi says it even followed in Anki's footsteps by hiring a Kick starter animator to create the single, cycloptic eye in the middle of its cylindrical head. And,

indeed, it goes a way toward giving the product a warm, lifelike appearance.



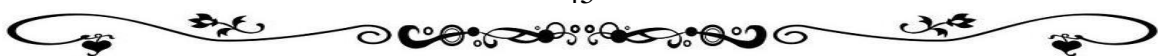
Demos were limited at the show, though a row of clicbots were lined up ,performing a choreographed dance to Redbone's "Come and Get Your Love ". It's a jam, for sure. Not sure if it's licensed or not, but it's all over the promo videos the company issued ahead of CES. Again there are big differences between the divises, their claims and what sector of the market they intend to fill. The product is modular and designed to built according to a connected app .Once built, it can do things like serve coffee, but nowhere does it claim to be the kind of autonomous robotic pet anki was shooting for.

By,
M. Shanmugalakshmi
19BCA33

SAMSUNG BALLIE ROBOT

It's Ballie, a new spherical robot from Samsung. ... Kim described Ballie as "Samsung's vision of a robot as a life companion." According to the company, Ballie can patrol your home as a kind of security guard, act as a fitness assistant, and also function as a remote control for the smart devices in your home.

Ballie can patrol your home as a kind of security guard, act as a fitness assistant, and also function as a remote control for the smart devices in your home.



Ballie's smarts include a built-in camera that enables it to recognize its owner, so it'll follow you around like a pet dog if you want it to. Though, if you happen to have an actual dog in the home, you'll be wise to keep an eye on Ballie or it could soon find itself on the receiving end of a severe mauling.



The rolling robot uses artificial intelligence (AI) to perform a series of tasks that include the operation of a smart home, safety, and physical health aspects. You can talk with it and ask it to perform various tasks, and it performs some automatically if you make a schedule in advance.

**By,
S. Sathya
19BCA34**

BOSTON DYNAMICS ROBOT DOG

Spot, the internet-famous Boston Dynamics robot dog, just landed its first job at a Norwegian oil and gas company.

The robot will survey an oil and gas production vessel, according to Bloomberg.

Since last September, Boston Dynamics has been making Spot available for commercial lease. This looks to be the second organization to take the robotics company up on the offer, after a bomb squad in Massachusetts. Spot the Dog—the robotic viral sensation known for opening doors, climbing steps with ease and even

taking clean dishes out of the dishwasher has just landed a full-time gig as an inspector at an oil and gas company in Norway.

At some point this year, the Boston Dynamics robot will begin patrolling Aker BP's oil and gas production vessel at the Skarv field in the Norwegian Sea, Bloomberg reports. There, it will run inspections, look for hydrocarbon leaks, and put together reports based on the data it collects. The Boston Dynamics Robot Dog Joins a Bomb Squad



Aker BP, which is highly invested in digitizing the oil and gas industry, wants to use Spot to make offshore operations safer, the company said during a presentation of the robot in Oslo today. According to Bloomberg, Aker BP will run the tests with software controlled by its parent company.

**By,
G. Dinesh Kumar
19BCA35**

PADRONE RING – COOLEST MOUSE EVER

No matter how sophisticated the track pads on our laptops get, mice are still irreplaceable because of the high freedom of movement and speed they offer. Padrone Ring is a small and nimble finger ring which can be used as a computer mouse. This ring mouse connects to any device

over low-energy Bluetooth and supports a variety of clicking and scrolling gestures.

More importantly, it comes in 12 different sizes and is waterproof, which means you can continue wearing it anywhere you go without worrying about breaking it or frying the internals. There is really no difference in using the touchpad of your laptop and using the ring of Padrone. The video shows that such a ring lets you work exactly like you had an unlimited touchpad on your desk. It works on a desk or on any somewhat hard surface. The ring is worn on the index finger of the left hand or right hand. The wrist stays mostly on the same spot on the table. Most people hold their hand in this position anyway when they are relaxed.

Bluetooth low energy

The ring connects via Bluetooth to your computer, so no software installation required just slide it on and connect to any Bluetooth-enabled PC, Mac, Windows tablet or Android device. Most computers have Bluetooth hardware nowadays. If you can connect any Bluetooth mouse to your computer, the ring works as well. This also means that you don't need a USB port and latency is comparable to any Bluetooth mouse.



Move the mouse pointer

As soon as your index finger touches the table, the mouse pointer starts following your fingertip. When you lift

again your fingertip, the mouse pointer stops moving.

Left click: -Tap with your index finger on the table.

Right click: Tap with your middle finger on the table.

Scrolling: Move your index finger and middle finger simultaneously up or down.

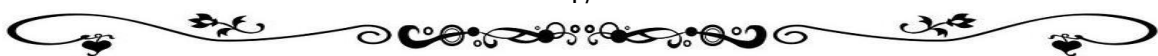
By,
P. Ashok Babu
19BCA38

SMOOTH-TALKING AI ASSISTANTS

New techniques that capture semantic relationships between words are making machines better at understanding natural language. We're used to AI assistants Alexa playing music in the living room, Siri setting alarms on your phone—but they haven't really lived up to their alleged smarts. They were supposed to have simplified our lives, but they've barely made a dent. They recognize only a narrow range of directives and are easily tripped up by deviations.



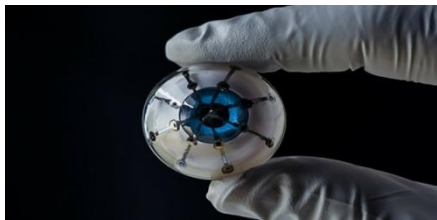
But some recent advances are about to expand your digital assistant's repertoire. In June 2018, researchers at OpenAI developed a technique that trains an AI on unlabeled text to avoid the expense and time of categorizing and tagging all the data



manually. A few months later, a team at Google unveiled a system called BERT that learned how to predict missing words by studying millions of sentences. In a multiple-choice test, it did as well as humans at filling in gaps. These improvements, coupled with better speech synthesis, are letting us move from giving AI assistants simple commands to having conversations with them. They'll be able to deal with daily minutiae like taking meeting notes, finding information, or shopping online

By,
P. Sujith Namashivayam
19BCA40

3D PRINTED EYES



One of the industries that benefit the most from Additive Manufacturing technologies is for sure the medical sector. 3D printing can lead to breaking news and discoveries with a combination of new materials, lab assistance such as 3D scanners, and abilities of 3D printers to produce structures impossible to achieve before.

Deficient organs: 3D printed Cornea The transplant market is always lacking organs and researchers are constantly looking for new ways to find a solution to that. One of the transplant organs that are very much needed, is a cornea, the first layer of our eyes that the light goes through. It also has a protective feature. There are millions of people whose cornea was damaged, which

leads to partial or even total blindness. They require eye surgery after suffering from burns, lacerations, abrasion or disease and 3D bio-printing is coming with a rescue.

By,
M. Saroj Narayanan
19BCA43

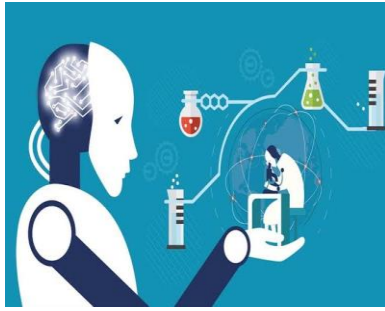
AI HELP IN SEARCH FOR POWERFUL NEW ANTIBIOTIC

In a world first, scientists have discovered a new type of antibiotic using artificial intelligence it has been heralded by experts as a major breakthrough in the fight against the growing problem of drug resistance a powerful algorithm was used to analyze more than one hundred million chemical compounds in a matter of days. The newly discovered compound was able to kill 35 types of potentially deadly bacteria, said researchers.

'A new age'

"In terms of antibiotic discovery, this is absolutely a first," said Regina Barzilay, a senior researcher on the project at the Massachusetts Institute of Technology (MIT).

The discovery was made using an algorithm inspired by the architecture of the human brain. Scientists trained it to analyse the structure of 2,500 drugs and other compounds to find those with the most anti-bacterial qualities that could kill E. coli.



They then selected around 100 candidates for physical testing before discovering halicin.

"I think this is one of the more powerful antibiotics that has been discovered to date," said James Collins, a bioengineer on the team at MIT.

"We wanted to develop a platform that would allow us to harness the power of artificial intelligence to usher in a new age of antibiotic drug discovery."

Dr Peter Bannister, chairman of the Institution of Engineering and Technology healthcare panel, said the method used was already "well established" within medical research.

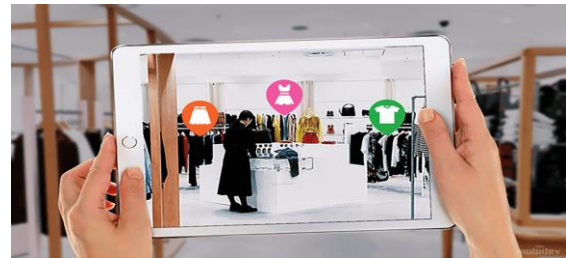
"The same approach has gained popularity in the development of new therapeutics, such as pharmaceuticals and, in the case of this research, antibiotics where pattern recognition including deep learning can help sort through the vast numbers of molecules," he told the BBC.

Researchers added that the use of the machine to accelerate drug discovery could help bring down the cost of generating more antibiotics in future.

By,
C. Suthish Kumar
19BCA48

AUGMENTED REALITY (AR) AS A NOVEL WAY OF SHOPPING

Based on a report from Gartner at least 100 million users were expected to utilize AR-enabled shopping technologies by 2020, which is one of the hottest retail trends of this year.



A BRP report indicated that 48% of consumers said that they'd be more likely to buy from a retailer that provided AR experiences. Several companies have gotten out in front of consumer demand for AR shopping. American Apparel, Uniqlo and Lacoste have deployed showrooms and fitting rooms that provide try-before-you-buy options in augmented reality spaces. Smart mirror technologies that scan RFID tags also offer the ability to bring recommendations to the brick-and-mortar shopping experience. IKEA customers have access to an app that permits them to point their phones at spaces and see what different products would look like in their own homes.

Makeup, fashion and lifestyle brands all stand to gain significant appeal with customers by using technologies that handle facial recognition, adapt to local lighting conditions and provide personalized advice.

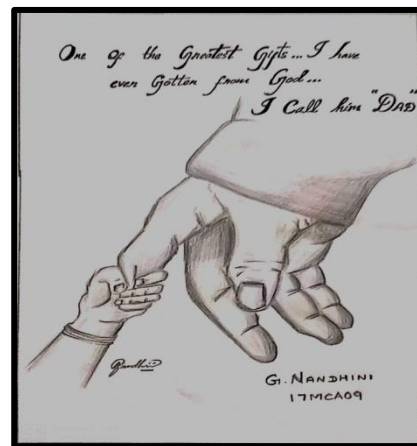
Virtual assistants will also significantly change the shopping experience.

By,
U. KEERTHANA
19BCA51

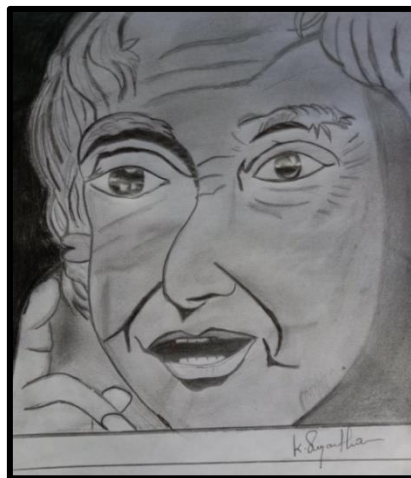
STUDENT ART



Art by : G. Nandhini, 17MCA09



Art by : G. Nandhini, 17MCA09



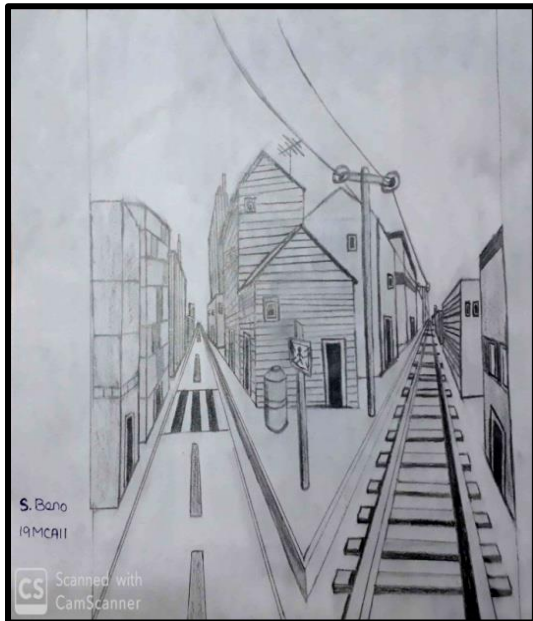
Art by : K. Sugantha Venkateswari, 17MCA25



Art by : J. Jeniraj, 18MCA20



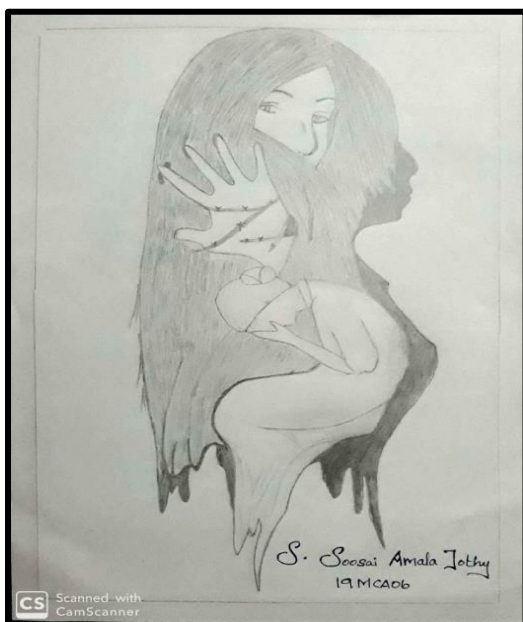
Art by : S. MuthuLakshmi, 18MCA04



Art by : S. Beno, 19MCA11



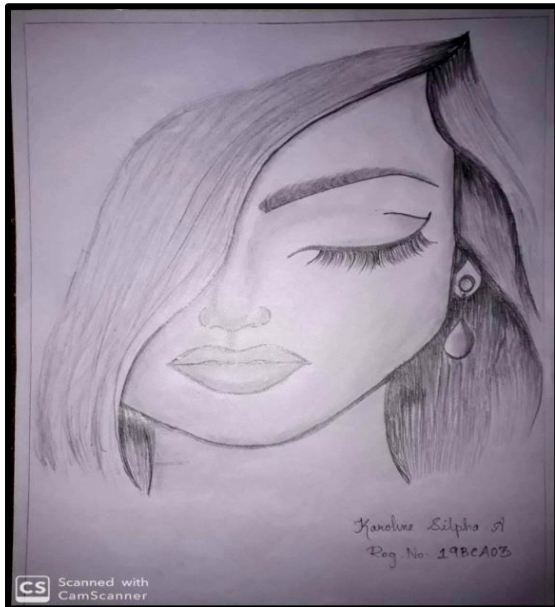
Art by : M. Bala Vignesh, 19MCA08



Art by : S. Soosai Amala Jothy, 19MCA06



Art by : M. Bala Vignesh, 19MCA08



Art by : A. Karoline Silpha, 19BCA03



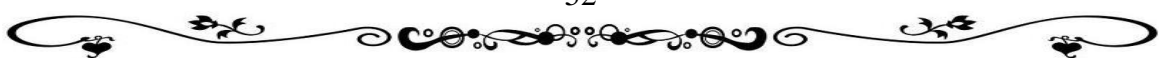
Art by : M. Stephen Ebanesar, 19BCA14



Art by : M. Ponraj, 19BCA04



Art by : R. Esakki Pandi, 19BCA41



TEACHERS' PARTICIPATION IN ORIENTATION / REFRESHER COURSES IN OTHER COLLEGES (2019-2020)

S.No.	Name of the Faculty	Orientation / Refresher	Sponsor	Venue	Date
1	Dr. S. Saraswathi	Presentation Skills Level 2	ICT Academy	Sarah Tucker College	28-05-2019 to 29-05-2019
2	Dr. S. Saraswathi	Machine Learning (ML)	IIT, Madras	Through Online	April, 2019
3	Mrs. L. Sujatha	Block chain Architecture Design and Use Cases	NPTEL-AICTE, MHRD, Govt. of India	Through Online	29-07-2019 to 18-10-2019
4	Mrs. L. Sujatha	Joy of Computing Using Python	IIT, Madras	Through Online	April, 2019
5	Mrs. L. Sujatha	Designing Learner-Centric MOOCs	IIT, Bombay	Through Online	March, 2019
6	Mrs. L. Sujatha	Introduction to Automata, Languages and Computation	IIT, Kharagpur	Through Online	April, 2019
7	Mrs. L. Sujatha	Presentation Skills Level 2	ICT, Academy	Sarah Tucker College	28-05-2019 to 29-05-2019
8	Mrs. A. Regita Thangam	Presentation Skills Level 2	ICT Academy	Sarah Tucker College	28-05-2019 to 29-05-2019
9	Mrs. A. Regita Thangam	Developing Soft Skills	IIT Kanpur	Through Online	August, 2019
10	Mrs. A. Regita Thangam	Data Base Management System	IIT Kharagpur	Through Online	August, 2019



PATENTS RECEIVED (2019-2020)

S.No.	Name of the Staff	Purpose	Agency	Date
1	Dr. S. Chidambaranathan	Smart Food Storage System	Allinnov Research and Development Private Limited, India.	26-04-2019
2	Dr. S. Chidambaranathan	Crop Disease Detection and Monitoring System	Allinnov Research and Development Private Limited, India.	26-04-2019

**AWARDS / DISTINCTIONS / HELD POSITION IN STATE / NATIONAL / INTERNATIONAL ORGANISATION
(2019-2020)**

S.No.	Name of the Teacher	Name of the Award / Post	Awarded by Organisation
1	Dr. S. Chidambaranathan	Best Researcher in Computer Science	Vedant Academics Bangkok Awards, Kasetsart University, Bangkok
2	Dr. S. Chidambaranathan	Young Scientist	Vedant Academics Bangkok Awards, Kasetsart University, Bangkok
3	Mrs. L. Sujatha	NPTEL Discipline Star	NPTEL/SWAYAM
4	Mrs. L. Sujatha	NPTEL Motivated Learner	NPTEL/SWAYAM



5	Mrs. L. Sujatha	Topper (Top 5%) & Elite with Gold Medal in NPTEL/SWAYAM Online Certification on Joy of Computing Using Python	IIT Madras
6	Mrs. L. Sujatha	Elite with Silver Medal in NPTEL/SWAYAM Online Certification on Designing Learner-Centric MOOCs	IIT Bombay
7	Mrs. L. Sujatha	Topper (Top 2%) & Elite with Gold Medal in NPTEL/SWAYAM Online Certification on Introduction to Internet of Things	IIT Kharagpur
8	Mrs. A. RegitaThanam	Topper (Top 5%) & Elite with Silver Medal in NPTEL/SWAYAM Online Certification on Database Management Systems	NPTEL/SWAYAM
9	Mrs. A. Regita Thangam	Elite with Silver Medal in NPTEL/SWAYAM Online Certification on Developing Soft Skills and Personality	NPTEL/SWAYAM

**PAPERS PRESENTED IN SEMINARS / CONFERENCES / WORKSHOPS
(2019-2020)**

S.No.	Name of the Faculty	Title of Paper Presented	Name of the Seminar	Publisher / College & Place	State / National & International Date
1	Dr. S. Chidambaranathan	The Survey Prediction of Potential	International Conference on Recent Trends	Sarada College, Tirunelveli.	23-02-2019



		Fishing Zone	in Advanced Computing and its Applications		
2	Dr. S. Chidambaranathan	Comparative Study of Kidney Disease Prediction Using Classification Algorithms	International Conference on Recent Trends in Multi-Disciplinary Research (ICRTMDR-2020)	A.P.C. Mahalakshmi College for Women, Thoothukudi, Tamil Nadu	27-02-2020 to 28-02-2020
3	Mrs. A. RegitaThangam	A Comparative Study of Query Processing and Optimization Techniques	International Conference on Recent Trends in Advanced Computing and its Applications	Sri Sarada College For Women, Tirunelveli.	23-02-2019

PAPERS PUBLISHED IN BOOKS / PROCEEDINGS / JOURNAL (2019-2020)

S.No.	Name of the Faculty	Title of the Paper	Facts of Publication / Title of the Book etc.	Year of Publication
1	Dr. S. Chidambaranathan	Clustered Interfaced Objective Function for Decision Tree Classifiers for Mining Data with Uncertainty	International Journal of Innovative Technology and Exploring Engineering	Vol.8(6S4), April 2019, pp.1554-1559; ISSN : 2278-3075
2	Mrs. A. Regita Thangam	A Comparative Study of Query Processing and Optimization Techniques	Proceedings of International Conference on Recent Trends in Advanced Computing and its Applications	Research Centre, Department of Computer Applications, Sri Sarada College for Women, Tirunelveli. 2019
3	Mrs. A. Regita Thangam	A Comparative Study of Query	International Journal of	IJCSE , 2019



		Processing and Optimization Techniques	Computer Sciences and Engineering	
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**SEMINARS / CONFERENCES / WORKSHOPS / ATTENDED
(WITHOUT PAPER PRESENTATION) (2019-2020)**

S.No.	Name of the Teacher	Title	Sponsor	Venue	Date
1	Mrs. A. Regita Thangam	Role of Higher Education in Rural Development: Innovations and Best Practices	Department of STAND	St. Xavier's College, Palayamkottai.	30-01-2019
2	Mrs. A. Regita Thangam	Machine Learning	Department of Computer Science and Research Centre	UGC	13-03-2019

**NPTEL/SWAYAM ONLINE CERTIFICATIONS COMPLETED BY FACULTY MEMBERS
(2019 – 2020)**

S.No.	Name of the Faculty	Course Name	Organized By	Month and Year of Completion
1	Dr. S. Saraswathi	Machine Learning (ML)	IIT Madras	April, 2019
2	Mrs. L. Sujatha	Designing Learner-Centric MOOCs	IIT Bombay	March, 2019
		Joy of Computing using Python	IIT Madras	April, 2019
		Introduction to Automata, Languages and Computation	IIT Kharagpur	April, 2019
		Block chain Architecture	IIT Madras	August, 2019

		Design and Use cases		
3	Mrs. A. Regita Thangam	Developing Soft Skills and Personality	IIT Kanpur	August, 2019
		Data Base Management System	IIT Kharagpur	August, 2019

**NPTEL/SWAYAM ONLINE CERTIFICATIONS COMPLETED BY STUDENTS
(2019-2020)**

S.No.	Reg. No	Name of the Student	Course Name	Organized By	Month and Year of Completion
1	17MCA06	V. Gomathi Shunmuga Priya	Joy of Computing Using Python	IIT, Madras	April, 2019
2	17MCA10	M. Roshan	Data Base Management System	IIT, Kharagpur	April, 2019
3	17MCA11	G. Maria Arul Raj	Data Base Management System	IIT, Kharagpur	April, 2019
4	17MCA14	V. Anand Kumar	Data Base Management System	IIT, Kharagpur	April, 2019
5	17MCA21	R. Brightlin	Joy of Computing Using Python	IIT, Madras	April, 2019
6	17MCA22	K. Ramajanani	Joy of Computing Using Python	IIT Madras	April, 2019
7	17MCA23	S. Jegan	Data Base Management System	IIT Kanpur	August, 2019
			Developing Soft Skills and Personality Development	IIT Kharagpur	August, 2019
8	17MCA25	K. SuganthaVenkateswari	Cloud Computing	IIT, Kharagpur	October, 2019



9	18MCA05	S.Esakkiammal @ Backiya	Introduction to Internet of Things	IIT, Kharagpur	October, 2019
10	18MCA11	G. Sri Lakshmi	Introduction to Internet of Things	IIT, Kharagpur	October, 2019
11	18MCA27	P. Perachi Selvan	Joy of Computing Using Python	IIT, Madras	April, 2019

STUDENTS WHO HAVE APPEARED FOR THE NET/SET EXAMINATIONS

S.No.	Reg.No	Name of The Student	NET/SET	Month and Year of Appearance
1	17MCA04	V. Gomathi Shunmuga Priya	NET	June, 2019
2	17MCA07	B. Abirami	NET	June, 2019
3	17MCA09	G. Nandhini	NET	June, 2019
4	17MCA16	G. Revathi	NET	June, 2019
5	17MCA22	K. Ramajanani	NET	June, 2019
6	18MCA05	S.Esakkiammal @ Backiya	NET	December, 2019
7	18MCA06	M. Sankara Gomathi	NET	December, 2019
8	18MCA10	B. Dharrani	NET	December, 2019
9	18MCA11	G. Sri Lakshmi	NET	December, 2019

INTER-DEPARTMENTAL COMPETITION WINNERS (2019-2020)

S.No.	Date	Reg.No.	Name	Event Name	Sponsoring agency	Prize
1	26-09-2019	19BCA30	S. Parvathi	Paper Presentation	Department of Computer Applications	I
		19BCA10	M. Sangeetha			



		19BCA28	S. Subash Arumugam			II
		19BCA01	B. Ram Praveen			
		19BCA17	M. Gerwin Niraj			III
		19BCA12	M. Samir Mohamed Yoonus			
2	26-09-2019	19BCA13	R. Arul Bala Singh	Quiz	Department of Computer Applications	I
		19BCA12	M. Samir Mohamed Yoonus			
		19BCA16	A. Anston Immanuel			II
		19BCA29	A. Selvin			
		19BCA01	B. Ram Praveen			III
		19BCA15	P. Rufas			
3	17-12-2019	18MCA01	M. Arun Kumar Subash	Tableau	INDECO	I
		18MCA02	G. Arun Vishnukumar			
		18MCA03	K. BalaSekaran			
		18MCA13	S. Thangamani Santhosh			
		18MCA14	B. Chockanathan			
		18MCA15	S. Chockalingam			
		18MCA18	P. Karthikeyan			
		18MCA21	M.S. Mohudoom Mohamed			
		18MCA25	P. Narayanan			
		18MCA26	K. Samson Morasis			
		18MCA27	P. Perachi Selvan			
		19MCA11	S. Beno			



4	18-12-2019	18MCA25	P. Narayanan	Mime	INDECO	II
		19BCA01	B. Ram Praveen			
		19BCA02	S. Albert			
		19BCA05	A.Bharath Arun			
		19BCA12	M. Samir Mohamed Yoonum			
		19BCA16	J. Anston Immanuel			
		19BCA19	R. Vignesh			
		19BCA35	G. Dinesh Kumar			
		19BCA42	P. Manikandan			
		19BCA46	M. Thanga Kalyani			
		19BCA47	S. Nambi Rajan			
5	11-01-2020	17MCA22	K. Rama Janani	Pongal Kolam Competition	Students Council	II
		18MCA04	S. Muthulakshmi			
		18MCA22	N. Vishnu Priya			
		19MCA09	S. Shivani			
6	09-01-2020	18MCA02	G. Arun Vishnu Kumar	Badminton Tournament	Department of Physical Education	I
		18MCA26	K. Samson Morais			
7	28-01-2020	19BCA12	M. Samir Mohamed Yoonus	Essay Writing (English)	Department of Computer Applications	I
		19BCA16	J. Anston Immanuel			II
		19BCA27	U. Muppindari Sutharson			III
8	28-01-2020	19BCA09	R. Gomathi Nayagam	Pencil Sketching	Department of Computer Applications	I
		19BCA29	A.Selvin			II
		19BCA41	R. Esakki Pandi			III
9	29-01-2020	19BCA30	S. Parvathi	Essay Writing (Tamil)	Department of Computer Applications	I
		19BCA18	S. Jency			II
						III

		19BCA32	G. Velayutham			
10	24-01-2020	19BCA12	M. Samir Mohamed Yoonus	Flip Flop	Department of Computer Applications	I
		19BCA28	S. Subash Arumugam			II
		19BCA46	M. Thangakalyani			III

ORIENTATION PROGRAMMES / GUEST LECTURES
XCAPA EVENTS 2019-2020

S. No.	Date	Name of the Event	Resource Person
1	19-07-2019	XCAPA Inauguration	Mr. R. AyeraJothi, Managing Partner, Strategy Solutions, Singapore
2	17-07-2019	Value Added Course	G. Maharaja
3	05-08-2019	A programme on "How to Face Interview?"	Mr. Ramanathan, Centizen Inc, Tirunelveli and Mr. Mahendran, Chain-sys Technologies, Chennai
4	06-09-2019	Campus Interview	Centizen Inc, Tirunelveli
5	11-09-2019	Quiz Competition	III MCA Students
6	20-09-2019	Campus Interview	Ji-Ji Technologies, Tirunelveli
7	27-09-2019	International Colloquium on the "Challenges of Higher Education in the 21 st Century"	Anthony de Sa, IAS (Retd)
8	03-10-2019	Paper Presentation Competition	II MCA Students
9	11-10-2019	Campus Interview	Chain-sys Technologies, Chennai



10	21-10-2019	Campus Interview	TechSomo, Tirunelveli
11	06-11-2019	Campus Interview	Bevywise Networks LLP, Tirunelveli
12	29-11-2019	Seminar on Data Science in Real World	Livewire Technologies, Tirunelveli
13	08-01-2020	Seminar on “How to Protect Yourself from Fraudulent Credit Card Transaction?”	Mr. David, Senior Analyst, Marshall Trading and Equipment Limited, Dubai
14	09-01-2020	Orientation Programme on “How to Face Interviews Assertively?”	Mr. B. Subramani, Our Alumnus, Tarento Technologies, Bangalore
15	24-01-2020	Competitions like Pencil Sketching, Flip-Flop, Essay Writing (English/Tamil)	Our Department Faculty Memebers
16	12-02-2020 to 13-02-2020	A Two Day Workshop on “Communication Skills and Personality Development”	Mr. A. Sesudasse, Founder and CEO, Inspire Career Development Center, Pondicherry

STUDENTS WHO HAVE ATTENDED THE SEMINARS / WORKSHOPS / COMPETITIONS

S.No.	Date	Reg. No.	Name of the student	Name of the event	Topic/ Name of the Competition	Name of the Organizer and Location
1	05-03-2020	19MCA02	A. Subalakshmi	Impact Lecture Session	“Intellectual Property Rights”.	Institution Innovation Council, Sri Sarada College for Women, Tirunelveli.
		19MCA04	T. Christina Zipporah			
		19MCA05	M. Muthuselvi			
		19MCA06	S. Soosai Amala Jothy			
		19MCA09	S. Shivani			
2	05-03-2020	19BCA06	R.L. Selva Deeshani	Technical Symposium EXCELSIO	Paper Presentation	PG and Research Dept. of
		19BCA51	U. Keerthana			

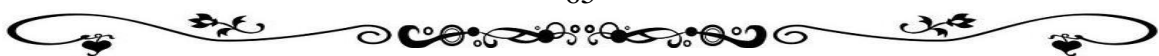
				R 2020		Computer Science, Sadakathulla Appa College, Tirunelveli.
3	05-03-2020	19BCA30	S. Parvathi	Technical Symposium EXCELSIOR 2020	Debugging	PG and Research Dept. of Computer Science, Sadakathulla Appa College, Tirunelveli.
4	05-03-2020	19BCA10	Sangeetha	Technical Symposium EXCELSIOR 2020	Quiz	PG and Research Dept. of Computer Science, Sadakathulla Appa College, Tirunelveli.
		19BCA33	M. Shanmugalakshmi			
5	05-03-2020	19BCA03	A. Karoline Silpha	Technical Symposium EXCELSIOR 2020	Software Marketing	PG and Research Dept. of Computer Science, Sadakathulla Appa College, Tirunelveli.
		19BCA06	R.L. Selva Deeshani			
		19BCA18	S. Jency			
		19BCA30	S. Parvathi			
		19BCA51	U. Keerthana			

PLACEMENT RECORDS

S.No.	Reg.No	Name of the student	Name of the Organization
1	17MCA02	R. Pon Brindha	TechSomo, Technopark, Tirunelveli
2	17MCA05	M. Akila	Ji-Ji Technologies, Tirunelveli



3	17MCA06	V. Gomathi Shunmuga Priya	Bevywise Networks LLP, Tiruenveli
4	17MCA07	B. Abirami	Bevywise Networks LLP, Tiruenveli
5	17MCA08	G. Maharaja	Centizen Inc, (US Based), Tirunelveli
6	17MCA09	G. Nandhini	Chainsys, (Oracle Group), Chennai
7	17MCA14	V. Anand Kumar	Chainsys, (Oracle Group), Chennai
8	17MCA21	R. Brightlin	Ji-Ji Technologies, Tirunelveli
9	17MCA19	Festo. D. Mwaipopo	TechSomo, Technopark, Tirunelveli
10	17MCA23	J. Jegan	Bevywise Networks LLP, Tiruenveli



Class Toppers



V. Harini
III MCA



G. Sri Lakshmi
II MCA



M. Bala Vignesh
I MCA



B. Ram Praveen
I BCA

XCAPA Inauguration



XCAPA Activities

CAMPUS INTERVIEWS



CRIB
Competition



STAND



KOLAM COMPETITION



Placement Achievers



G. Maharaja
Centizen Inc., (US Based)
Tirunelveli



V. Ananda Kumar
Chain-Sys, (Oracle Group)
Chennai



G. Nandhini
Chain-Sys, (Oracle Group)
Chennai



M. Akila
Ji-Ji Technolgies,
Tirunelveli



R. Brightlin
Ji-Ji Technolgies,
Tirunelveli



Festo. D. Mwaipopo
Techsomo, Technopark,
Tirunelveli



R. Pon Brindha
Techsomo, Technopark,
Tirunelveli



J. Jegan
Bevywise Networks LLP,
Tirunelveli



B. Abirami
Bevywise Networks LLP,
Tirunelveli



V. Gomathi
Shunmuga Priya
Bevywise Networks LLP,
Tirunelveli

DEPARTMENT OF COMPUTER APPLICATIONS

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Master of Computer Applications was Started with AICTE norms in the year 2000 with 2 teaching staff. In the year 2001, it started functioning as a separate department as per the AICTE recommendations. Now the Department has 5 faculty members. They are dynamic, NET / SET qualified, patent published and resourceful. Among them two have got their Doctoral Degree. **Dr. S. Chidambaranathan** is the Head Of the Department.

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OPPORTUNITIES**

OUR STUDENTS
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TOP MOST MNCs

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- Career Guidance
- Aptitude training
- Softskill training
- GD Session
- Mock Interview
- Communication Skill Development
- Workshop on recent tools
- Orientation programme on recent technologies

ACADEMIC ACTIVITIES



Facilities

Our department has a well equipped separate computer lab with the internet facility

- Internet Lab
- 4 Servers
- 75 Client Systems
- Demo Lab
- 5 LCD Projectors
- Wifi Facility
- Language Lab
- Well equipped class rooms with Smart Board

A Separate Seminar hall and library with 3000 books have been significant in the holistic development of our students.

Eligibility for MCA

Passed BCA / Bachelor Degree in Computer Science or equivalent Degree / Passed B.Sc., / B.Com., / B.A., with Mathematics as one of the course @ 10 +2 level or @ Graduation Level.



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