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CHALAPATHI INSTITUTE OF ENGINEERING & TECHNOLOGY
(Approved by AICTE, Affliated to Acharya Nagarjuna University)
Accredited by NAAC with A Grade
ISO Certified Institute
A
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## EDITORIAL BOARD

"Every great and worthy human accomplishment which finds engraved in letters of gold in the pages of history depicting human civilization and progress, was in the first instance sprouted as a mere thought or conceived just as an idea by someone".

It is the profound sense of gratitude and immense pleasure that we place in the hands of our well-wishers, friends and benefactors, this Year Book. We have always felt as students of this great institution we should always Endeavour to make mark in the college's prestigious history.

Our modest Endeavour to bring out this Year Book this year is born out of enthusiasm to provide the students an opportunity to discover their dormant talents and to give vent to their feelings and imaginations and also exhibit their creativity. This little idea of a magazine became a reality entirely due to the enthusiastic response from the students. The content of this magazine covers a range of topics which are informative, thought provoking, humorous, and imaginative.

A heartfelt thanks to all the contributors of articles and coordinators and most appropriately all the generous hearts, without whose support, we could not have undertaken this monumental work.

As a team, we dedicate this magazine to the well wishing and beloved seniors 2017-2021 batch, who here been the strength and are part of its plans and actions, guiding throughout their times with us. We expect the same guiding, cooperation and support from them throughout their lives.

ALL THE BEST.....

**EDITORIAL BOARD**



# CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

## ABOUT COLLEGE

CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS) was established in the month of June, 2007. The college is **Affiliated to Acharya Nagarjuna University** and recognized by ALL INDIA COUNCIL FOR TECHNICAL EDUCATION (AICTE), New Delhi. It offers four year B.Tech courses in Computer Science and Engineering, Computer Science and Engineering (Artificial intelligence), Computer Science and Engineering (Data Science), Computer Science and Information Technology, Electronics and Communication Engineering, Electrical and Electronics Engineering and M.Tech courses in Computer Science and Engineering, VLSI & ESD.

At this the burning objective of the college is to promote flowery education which is indispensable and useful for the society with professional and ethical values through the divine centers of excellence. Unique in its structure, amazing methods and goals, the college is strongly rooted in a philosophy of training and research that emphasizes the intimate relationship between knowledge and its application and seeks to promote the creation of an ideal society.

It is packed up with green belt, free from pollution and it is very near to the Historical place Amaravati at the banks of river Krishna where Kalachakra was held and this is the place where we got sculptures of Buddha, Situated in Chalapathi Nagar, Lam, Guntur. An ideal place for higher learning, it is just a stone's throw away from the heart of Guntur town. The taught are exposed to congenial atmosphere for diligent academic pursuit in Chalapathi Institute of Engineering and Technology.

### INSTITUTE VISION

**To emerge as an Institute of Excellence for Engineering and Technology and provide quality education, entrepreneurial and research opportunities to the students in catering the needs of society.**

### INSTITUTE MISSION

**To be a student centric institute imbibing experiential, innovative and lifelong learning skills with academic rigor.**
**To Produce graduates who are knowledgeable, innovative and empathetic.**
**To inculcate entrepreneurial attitude and values amongst Learners.**

### QUALITY POLICY

**Chalapathi Institute of Engineering and Technology is committed to achieve appropriate standards and excellence of teaching, research and consultancy by ensuring creative environment with challenging and entrepreneurial opportunities.**

## ABOUT DEPARTMENT

The commencement of the department of CSE was accomplished in 2007-08 and had successfully integrated the years of excellence and still incomparable. The Department offers, B.Tech Program in Computer Science and Engineering with an annual intake of 180, Computer Science and Engineering with Data Science with an annual intake 60, Computer Science and Engineering with Artificial Intelligence with an annual intake 60, M.Tech program in Computer Science and Engineering with an annual intake of 18.

The department has strategically gained experienced faculty members who expertise in various subjects makes academic excellence.

The department has engaged in training students towards industry needs with necessary software exposure right from the day of its establishment. The department has acquainted in conducting guest lectures, workshops, student paper presentation and conferences.

The department of CSE encourages students to participate in various extra-curricular activities and competitions held by other universities and colleges within the state and out- side the state. The students also have won laurels to the college by winning prizes in various competitions

Department of CSE has an association named TECHWINGS for the students and by the students which works for the overall development of the students.

### DEPARTMENT VISION

**To produce professionally competent, research oriented and socially sensitive engineers and technocrats in the emerging technologies.**

### DEPARTMENT MISSION

**DM 1: State of art laboratories to meet the needs of the continuous change.**
**DM 2: Provide a research environment to meet the societal issues.**
**DM 3: Facilitating collaborations/MOU'S towards emerging technologies.**

# TECHWINGS ASSOCIATION


*Techwings is a student association in the department of CSE.*

*The main objective of the association is to serve the society and to bring out inner talents of the students.*

**Sri. Y.V.ANJANEYULU**

**FOUNDER & CHAIRMAN,**
**CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,**
**GUNTUR.**

## MESSAGE

I am greatly honored to serve the society as **President** of CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY. Students of CSE are doing a good job in keeping the students involved in academics as well in co-curricular and extra curricular activities. It helps them to get knowledge beyond academics.

As production, software and service industries are shifting to India, our country needs lakhs of Engineers to fulfill the demand. These Engineers need to be creative in thinking, innovative in execution, proficient in oral and written communication, able to work for longer hours effectively in teams, on multi – disciplinary projects.

In fact, these are our core teaching values at our CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY.

**Sri. Y. SUJITH KUMAR, B.Tech., M.B.A.(USA)**
**SECRETARY & CORRESPONDENT**
**CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,**
**GUNTUR.**

## MESSAGE

I am greatly honored to serve the society as **Secretary & Correspondent** of CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY. This magazine is the desire of CSE students to share their creations, articles and views among themselves. This magazine is a perfect blend of information.

The best environment we can provide for our students are the ones that lead them to take responsibility for their learning. What a difference it makes in a student's mind knowing that they've discovered the answer for themselves, or been able to create it if it wasn't there.

I congratulate the editors for their efforts in bringing out the magazine.

**Dr. B. RAVEENDRA BABU,**
**PROFESSOR & CEO**
**CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,**
**GUNTUR.**

## MESSAGE

A college magazine is a mirror of the college life. It reflects the literary, educational and sports activities going on in the college. It projects the important events celebrated in the college during a certain month or year. It also contains news about the college.

As a teacher, you're the most important part of a young student's life. Your love of learning can be infectious and inspiring to any student you teach. Remember how you nurture the courage in a pupil's heart. You are a tutor, an enabler, a caregiver combined; you can and will make a difference.

I congratulate the team for bringing an excellent magazine.

**Dr. M. CHANDRASEKHAR B.E, M.Tech, Ph.D, MISTE, PRINCIPAL**
**CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,**
**GUNTUR.**

## MESSAGE

It is great pleasure to note that the Department of Computer Science & Engineering is releasing an Annual Magazine. The college magazine is a comprehensive magazine as it contains valuable articles from the college professors and from the ex-students, who want to convey about their successful career and about their interesting experiences. Thus a college magazine plays an important role in the life of college students. For old students, it revives their memories.

Teaching & Learning process is effective, unparallel and effectively implemented by the dynamic Head of the Department with the support of the respective faculty members.

We provides amenities like training for placement, internet, hostel for boys and girls, medical facility, additional training to the hostel students, transport from every corner of the district, canteen and parent interaction cell for continuous information and guidance.

**Prof. K. KIRAN KUMAR**
**HOD, Dept of CSE,**
**CHALAPATHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,**
**GUNTUR.**

## MESSAGE

It is great pleasure to note that the Department of Computer Science &Engineering is releasing an Annual Magazine which briefs the activities of the association, brings out the hidden talents of the students of CSE.

It gives me immense pleasure to lead the department of CSE .The department offers B.Tech CSE and M.Tech CSE. The aim of the department is to provide high quality education along with training the students with all the new advancements in computer science. The excellent infrastructure, the teaching faculty of the best kind of the department institute quality education.

# STAFF BOARD

| S.No | Faculty Name | Designation | Qualification |
|---|---|---|---|
| 1. | Prof. B.Raveendra Babu | Professor & CEO | Ph.D |
| 2. | Prof. K.Kiran Kumar | Professor & HOD | Ph.D |
| 3. | Prof. P.SubbaRao | Professor | MS |
| 4. | Prof. K.R.R Mohan Rao | Professor | Ph.D |
| 5. | Dr.P.Ratna Babu | Associate professor | Ph.D |
| 6. | Dr.Y.Rokeshkumar | Associate professor | Ph.D |
| 7. | Smt. K.Aruna Kumari | Assistant Professor | M.Tech(Ph.D) |
| 8. | Sri. G.Bharath Kumar | Assistant Professor | M.Tech(Ph.D) |
| 9. | Sri.P.Sudheer | Assistant Professor | M.Tech(Ph.D) |
| 10. | Sri. G.Ramachandra Rao | Assistant Professor | M.Tech |
| 11. | Sri. J. Bhargav | Assistant Professor | M.Tech |
| 12. | Sri. N.Srikanth | Assistant Professor | M.Tech |
| 13. | Smt.G.Pavani | Assistant Professor | M.Tech |
| 14. | Sri. Sk.JohnSydulu | Assistant Professor | M.Tech |
| 15. | Sri P Venkata Siva | Assistant Professor | M.Tech |
| 16. | Smt M Asha Aruna Sheela | Assistant Professor | M.Tech |
| 17. | Smt.D.NagaVardhani | Assistant Professor | M.Tech |
| 18. | Sri.G.venkateswara Rao | Assistant Professor | M.Tech |
| 19. | Sri K Madhu Kiran | Assistant Professor | M.Tech |
| 20. | Sri K Sasikanth | Assistant Professor | M.Tech |
| 21. | Sri A.Sri Harsha | Assistant Professor | M.Tech |
| 22. | Mrs K.Tejaswi | Assistant Professor | M.Tech |
| 23. | Mrs. B. Rajyalakshmi | Assistant Professor | M.Tech |
| 24. | Miss Sk. Raziya Sultana | Assistant Professor | M.Tech |
| 25. | Sri P.Satish Kumar | Assistant Professor | M.Tech |
| 26. | Sri K.Nagendra Prasad | Assistant Professor | M.Tech |
| 27. | Mrs D.Sureka | Assistant Professor | M.Tech |

# STAFF ACHIEVEMENTS

## FUNDING PROJECTS SANCTIONED

| S.No | Name of the faculty | Name of the Project | Name of the Funding Agency | Amount |
|---|---|---|---|---|
| 1 | Prof. K.Kiran Kumar | SPICES | AICTE | Rs. 1,00,000 |
| 2 | Prof. K.Kiran Kumar | Business Incubation Center | MSME | Upto Rs. 1 Crore |

## PATENTS PUBLISHED

| S. No | Name of the faculty | Patent topic | Publishing No | Date |
|---|---|---|---|---|
| 1 | Prof. K.R.R.Mohan Rao<br>Dr P.Ratna babu | Recognizing human facial emotional and detection utilizing deep learning | 202111006194 | 19/02/2021 |
| 2 | Dr Y. Rokesh Kumar | A novel method of power reduction in modified AES using bit encryption and decryption transition scheme on FPGA | 202141006425 | 19/02/2021 |

## AWARDS RECEIVED

| S. No | Name of the faculty | Name of the Award | Agency |
|---|---|---|---|
| 1 | Prof. K.Kiran Kumar | Research excellence award for best young achiever 2020 | IJMTST |
| 2 | Prof. K.Kiran Kumar | Global Best Teacher Award 2021 | Youth for Universal Voluntary Action |
| 3 | Prof. K.Kiran Kumar | Certificate of Appreciation | Coursera for Campus-L4G |
| 4 | Prof. K.Kiran Kumar | Young Educator and Scholar Award 2020 | National Foundation for Entrepreneurship Development (NFED) |
| 5 | Prof. K.R.R Mohan Rao | Senior Researcher Award 2020 | IJMTST |

## NPTEL COURSES DONE

| S. No | Name of the Faculty | No. of course done |
|---|---|---|
| 1 | Prof. K.Kiran Kumar | 3 |
| 2 | Sri. P.Satish Kumar | 1 |

## BOOKS PUBLISHED

| S. No | Name of the Faculty | Book Title, Publisher & ISBN No |
|---|---|---|
| 1 | Prof.K.Kiran Kumar, Sri.Sk.John Sydulu, Sri. P.Venkata Siva | Cyber Security, Rudra Publications, ISBN : 978-93-89960-35-8 |
| 2 | Dr. P.Ratna Babu | Computer Network and Security, Jaya Lakshmi Publications, ISBN: 978-81-952589-1-8 |

## PAPERS PRESENTED IN CONFERENCES

| S.No | Name of the faculty | No. of Papers Presented |
|---|---|---|
| 1 | Dr.B.Raveendra babu | 1 |
| 2 | Prof. K.Kiran Kumar | 4 |
| 3 | Sri. G.Ramachandra Rao | 1 |
| 4 | Sri. P.Venkata Siva | 1 |
| 5 | Sri. Sk.John Sydulu | 2 |
| 6 | Smt. G.Pavani | 1 |
| 7 | Sri. K.Sasikanth | 1 |
| 8 | Sri. K.Madhu Kiran | 1 |
| 9 | Sri. A.Sri Harsha | 1 |
| 10 | Sri.G.Bharath Kumar, Sri.N.Srikanth, Smt.K.Aruna Kumari, Sri.G.Ramachandra Rao | 1 |
| 11 | Prof. K.Kiran Kumar, Sri.P.Venkata Siva, Sri.G.Ramachandra Rao | 1 |
| 12 | Prof. K.Kiran Kumar, Sri.G.Ramachandra Rao | 1 |

## INTERNATIONAL JOURNAL PAPERS PUBLISHED

| S. No | Name of the faculty | No. of Journals |
|---|---|---|
| 1 | Dr.B.Raveendra Babu | 1 |
| 2 | Prof. K.Kiran Kumar | 1 |
| 3 | Prof.K.R.R. Mohan Rao, Prof.P.Subba Rao, Smt.B.Rajyalakshmi | 1 |
| 4 | Prof. K.R.R. Mohan Rao, Prof.K.Kiran Kumar, Sri.G.Ramachandra Rao, Sri.P.Venkata Siva | 1 |
| 5 | Prof.K.R.R.Mohan Rao, Prof. K.Kiran Kumar , Prof.P.Subba Rao | 1 |
| 6 | Sri. J.Bhargav | 1 |
| 7 | Dr. P.Ratna Babu | 1 |

## AS RESOURCE PERSON FOR OUTSIDE COLLEGES

| Name of the Event | Resource Person | Date |
|---|---|---|
| One day webinar on Windows App Development Organized by Annamacharya PG College of Computer Studies | Prof K.Kiran Kumar, Prof & HOD, CSE Department, CIET. | 26/06/2021 |
| Three days WORKSHOP on “Applications of Cloud Computing” by JBIET, Hyderabad. | Dr.Y.Rokesh Kumar, Associate Professor, CSE Department, CIET. | 18/06/2021 |

# FDP/STTP/WEBINAR/TRAININGS ATTENDED

| S.No | Name of the Faculty | FDPs | | Training activities | | STTPs | Webinar |
|---|---|---|---|---|---|---|---|
| | | Inside | Outside | Inside | Outside | | |
| 1 | Prof. B.Raveendra Babu | | 2 | | | | 2 |
| 2 | Prof. K.Kiran Kumar | | 23 | 1 | 3 | | 12 |
| 3 | Prof. P.Subba Rao | 2 | 1 | 1 | | | |
| 4 | Prof. K.R.R Mohan Rao | | 1 | | | | 1 |
| 5 | Dr.P.Ratna Babu | | 2 | | | | |
| 6 | Dr.Y.Rokesh kumar | | 1 | | 1 | | |
| 7 | Smt. K.Aruna Kumari | 2 | 1 | | 1 | | 5 |
| 8 | Sri. G.Bharath Kumar | 2 | 7 | 4 | 1 | | 4 |
| 9 | Sri. G.Ramachandra Rao | 2 | 2 | 4 | 1 | | 1 |
| 10 | Sri. J. Bhargav | 1 | 10 | 2 | 2 | | 4 |
| 11 | Sri. N.Srikanth | 4 | | 3 | 2 | | 1 |
| 12 | Smt.G.Pavani | 2 | 5 | 1 | | | 3 |
| 13 | Sri. Sk.John Sydulu | 1 | 4 | 2 | 1 | | 2 |
| 14 | Sri P Venkata Siva | 1 | 7 | 2 | 3 | | 3 |
| 15 | Smt M Asha Aruna Sheela | 2 | 4 | 3 | 1 | 1 | |
| 16 | SmtD.NagaVardhani | | 1 | 3 | | | 1 |
| 17 | Sri K Madhu Kiran | 2 | 2 | 1 | | | 1 |
| 18 | Sri.G.Venkateswara Rao | | | 3 | 1 | | |
| 19 | Sri K Sasikanth | 2 | | 2 | 2 | | 3 |
| 20 | Sri A.Sri Harsha | 1 | | 2 | 2 | | 1 |
| 21 | Mrs K.Tejaswi | | | 2 | | | 3 |
| 22 | Mrs. B. Rajyalakshmi | 2 | 5 | 3 | 6 | 1 | 11 |
| 23 | Miss Sk. Raziya Sultana | 1 | 12 | 1 | 3 | 1 | 10 |
| 24 | Sri P.Satish Kumar | | | 3 | | 1 | |
| 25 | Sri K.Nagendra Prasad | | | 2 | | | |

# PLACEMENTS

## COMPANY NAME: TCS

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1203 | B.Naga Kavya |
| 2 | Y17CS1244 | K.Naga Venkata Sai Keerthana |
| 3 | Y17CS1253 | K.Madhu Sudha Sri |
| 4 | Y17CS1299 | S.Seshagiri |

## COMPANY NAME: HCL

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1285 | P.Navya Sree |
| 2 | Y17CS1230 | G.Sandeep |
| 3 | Y17CS1269 | M.Anusha |
| 4 | Y17CS1302 | T.Supriya |
| 5 | Y17CS1299 | S.Seshagiri |

## COMPANY NAME: INFYTQ

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1299 | S.Seshagiri |

## COMPANY NAME: INFOSYS

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1222 | G.Srilaxmi |
| 2 | Y17CS1232 | J.Sai Priya |
| 3 | Y17CS1225 | G.Kavitha |
| 4 | Y17CS1302 | T.supriya |
| 5 | Y17CS1273 | N.Sandhya |
| 6 | Y17CS1314 | Y.Likitha |
| 7 | Y17CS1201 | A.Bhargavi |
| 8 | Y17CS1256 | M.Anthoni Jayasri |
| 9 | Y17CS1236 | K.Prudviraj |
| 10 | Y17CS1316 | Sk.Nidha Tanveer |
| 11 | Y17CS1230 | G.Sandeep |

## COMPANY NAME: EDWISOR

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1308 | V.Madhu Krishna |
| 2 | Y16CS1283 | P.Rishi Phaneendra |
| 3 | Y17CS1213 | D.Jagadeesh Chandra babu |

## COMPANY NAME: MAL TECH SOLUTIONS PVT LTD

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1288 | P.Rohit |
| 2 | Y17CS1312 | V.Chaithanya |
| 3 | Y17CS1222 | G.Srilaxmi |
| 4 | Y17CS1302 | T.Supriya |

## COMPANY NAME:REVATURE

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1299 | S.Seshagiri |
| 2 | Y17CS1230 | G.Sandeep |
| 3 | Y17CS1223 | G.L.Tejaswi |
| 4 | Y17CS1295 | S.Aparna |
| 5 | Y17CS1249 | K.Srinu |

## COMPANY NAME:PENTOGON

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1273 | N.Sandhya |
| 2 | Y17CS1213 | D.Jagadeesh Chandra babu |
| 3 | Y17CS1275 | N.Ramu |
| 4 | Y17CS1274 | T.Narra |
| 5 | Y17CS1214 | D.Jagadeesh |
| 6 | Y17CS1300 | T.Hema |
| 7 | Y17CS1228 | G.Divya |
| 8 | Y17CS1233 | J.Joharika |
| 9 | Y17CS1297 | Sk.HaziHassain |
| 10 | Y17CS1264 | M.Venkatesh |
| 11 | Y17CS1254 | L.Manasa |
| 12 | Y17CS1250 | K.Sindhuja |

## COMPANY NAME: WIPRO

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1230 | G.Sandeep |
| 2 | Y17CS1292 | R.Navya |

## COMPANY NAME: Edwisely

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1230 | G.Sandeep |
| 2 | Y17CS1290 | Ganesh |

## COMPANY NAME: MAGNEQ

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1227 | G.Lakshmi Siva Sai Tanmay |
| 2 | Y17CS1230 | G.Sandeep |
| 3 | Y17CS1201 | A.Bhargavi |
| 4 | Y17CS1250 | K.Sindhuja |

## COMPANY NAME: ACCENTURE

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1252 | K Sai Teja Reddy |
| 2 | Y17CS1314 | Y.Likhitha |
| 3 | Y17CS1227 | G.Lakshmi Siva Sai Tanmay |

## COMPANY NAME: INNOLABZ

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1305 | U.Devika |
| 2 | Y17CS1239 | K.poojitha |
| 3 | Y17CS1252 | K.Sai Teja Reddy |
| 4 | Y17CS1258 | M.Purushotham |
| 5 | Y17CS1308 | V.Madhu Krishna |
| 6 | Y17CS1271 | N.Pavani |
| 7 | Y17CS1278 | P.Rahul |
| 8 | Y17CS1309 | V.Subhaprada |

## COMPANY NAME: KJSYSYTEMS

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1292 | R Navya |

## COMPANY NAME: Caliber Technologies

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1303 | Tirumalasetti Mahesh |

## COMPANY NAME: BDS

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1254 | L.Manasa |
| 2 | Y17CS1297 | SK.Hazi Hassain |
| 3 | Y17CS1295 | S.Aparna |
| 4 | Y17CS1303 | T.Mahesh |
| 5 | Y17CS1223 | G.Lakshmi Tejaswi |
| 6 | Y17CS1293 | K.Sai Surya Praneeth |
| 7 | Y17CS1238 | K.Raghavendra |
| 8 | Y17CS1260 | M.Priyanka |

## COMPANY NAME: Mindtree

| S.NO | REGD. NO | NAME OF THE STUDENT |
|---|---|---|
| 1 | Y17CS1244 | K.Naga Venkata Sai Keerthana |

## ****HCL, ACCENTURE, CAPGEMINI RESULTS AWAITING

## INTERNSHIPS DONE BY STUDENTS

| S. No | Name of the Company | No. of Students attended |
|---|---|---|
| 1 | Indian Servers | 27 |
| 2 | Brain O Vision | 9 |
| 3 | Swecha | 1 |
| 4 | Supraja Technologies | 5 |
| 5 | Rampro Solutions Pvt.Ltd | 1 |
| 6 | Analyticspath Soft tech Pvt.Ltd | 1 |
| 7 | AQUA Solutions | 6 |
| 8 | V2 value BIZ Solutions Pvt.Ltd | 1 |
| 9 | Volkphantom IP Solutions Pvt. Ltd | 1 |
| 10 | Vision Computers | 1 |
| 11 | Verzero | 1 |
| 12 | Techworld Solutions | 1 |

# STUDENT ACHIEVEMENTS

| S.No | Event Name | Dates of the event | Name of the Student | Venue | Awarded |
|---|---|---|---|---|---|
| 1 | Short Film | Feb-2021 | V.Bhargavi | CIET | Second |
| 2 | Short Film | Feb-2021 | S.Nithin | CIET | Second |
| 3 | Short Film | Feb-2021 | G.Venkata Mani | CIET | Second |
| 4 | Short Film | Feb-2021 | K.Pujitha | CIET | First |
| 5 | Short Film | Feb-2021 | P.Deepthi | CIET | First |
| 6 | Short Film | Feb-2021 | A.Bindu Madhavi | CIET | Third |
| 7 | Short Film | Feb-2021 | B. Shanmuka Naga Sai | CIET | Third |
| 8 | Message Contest | 5th Sep-2020 | M. Sruthi | IBS Business School , Hyderabad | First |
| 9 | Message Contest | 5th Sep-2020 | L. Asritha Koushalya | IBS Business School , Hyderabad | Second |
| 10 | Message Contest | 5th Sep-2020 | Navya Ravipati | IBS Business School , Hyderabad | Third |
| 11 | Quiz (Technical) | 23 & 24 Feb-2021 | Ch. Gopi Krishna | CIET | Second |
| 12 | Online Quiz (Vigilance Awareness Week) | 28th Oct-2020 | K.Chandrika | Income Tax Department | First |
| 13 | Online Quiz (Vigilance Awareness Week) | 28th Oct-2020 | G.Lakshmi Tejaswi | Income Tax Department | Third |
| 14 | Online Essay Writing (Vigilance Awareness Week) | 28th Oct-2020 | T. Supriya | Income Tax Department | Third |
| 15 | Online Quiz (Engineers Day) | 15th Sep-2020 | P.Thippe Swamy | CIET | First |
| 16 | Online Quiz (Engineers Day) | 15th Sep-2020 | D.Akhila | CIET | Second |
| 17 | Online Quiz (Engineers Day) | 15th Sep-2020 | P.Raja Rajeswari | CIET | Second |
| 18 | Online Quiz (Engineers Day) | 15th Sep-2020 | J.Joharika | CIET | Second |
| 19 | Online Quiz (Engineers Day) | 15th Sep-2020 | K.Parvathi | CIET | Third |
| 20 | Online Quiz (Engineers Day) | 15th Sep-2020 | S.Seshagiri | CIET | Second |
| 21 | Essay Writing (Engineers Day) | 15th Sep-2020 | R.Navya | CIET | Second |

| | | | | | |
|---|---|---|---|---|---|
| 22 | International Conference on Emerging Research in Computing – Best Paper | 30th June-2021 | E.Sreemaurya | Annamacharya PG College of Computer Studies | Second |
| 23 | International Conference on Emerging Research in Computing – Best Paper | 30th June-2021 | K.Sanjana | Annamacharya PG College of Computer Studies | Third |
| 24 | International Conference on Emerging Research in Computing – Best Paper | 30th June-2021 | N.Prasanthi | Annamacharya PG College of Computer Studies | Second |
| 25 | Chess (Women's Day) | 8th March-2021 | L. Asritha Koushalya | CIET | Second |

## PAPERS PRESENTED BY STUDENTS IN CONFERENCES

| S.No | Name of the student | No. of Papers Presented |
|---|---|---|
| 1 | K.Pradeep | 1 |
| 2 | K.Hemanth | 1 |
| 3 | E.Sree maurya | 1 |
| 4 | N.Prasanthi | 1 |
| 5 | D.Siva Sai | 1 |
| 6 | T.Siva Surya | 1 |
| 7 | G.Mallikarjuna Rao | 1 |
| 8 | K.Sanjana | 1 |

## EVENTS CONDUCTED

| Name of the event organized | Resource Person | Date/ Period | No. of Students attended |
|---|---|---|---|
| 3 day FDP on Outcome Based Education | Dr.G.Vara Prasad, Associate Professor, CSE Department, BMS College of Engineering, Bangalore. | 09/07/2020 to 11/07/2020 | 262 |
| 6 Day workshop on "AI & ML" | Mr.Arpit Yadav from Keyway research | 13/07/2020 to 18/07/2020 | 3828 |
| 2 Day FDP on "Intellectual Property Right(IPR)" | Dr.K.K.Baseer,IPR Cell Coordinator & IIC Innovation Ambassador for IPR &TT, SVEC, Tirupathi | 08/08/2020 to 09/08/2020 | 125 |
| AICTE Sponsored National E-Conference on Recent Advances in Computer Science and Engineering 2020(NCRACSE-2020) | Mr. Kartikeya Kumar, Asst. Vice President, K3 Consultants, Hyderabad & Mr. T.Santhosh, TCS, Hyderabad | 28/08/2020 to 29/08/2020 | 43 selected out of 84 Papers received from 12 States |
| A webinar on campus to Corporate | Prof.J.Venkataratnam, IBS, Hyderabad | 31/08/2020 | 126 |
| One week National Level workshop on "AI and Applications" | Mr.N.Vidya Sagar, Sr.Manager, AI & ML, Sales Force India Pvt. Ltd. | 23/11/2020 to 27/11/2020 | 1620 |
| Two day Workshop on "Source code Management using Git and Github" | Ch.Swathi, Ch.Nandini, Y.Venkatesh, I.poojitha From APSSDC Developers | 02/02/2021 to 03/02/2021 | 109 |

| | | | |
|---|---|---|---|
| Two day Workshop on “Source code Management using Git and Github” | Ch.Swathi, Ch.Nandini, Y.Venkatesh, I.poojitha from APSSDC Developers | 10/02/2021 to 11/02/2021 | 107 |
| A Seminar on “Free software – An Alternate Perspective” | Mr.Sri Kalyan ,Thought works, Mr.Sripathi Ray, KLU and Mr.Sai teja | 26/02/2021 | 180 |
| Two day Workshop on “Source code Management using Git and Github” | K.Keerthi,K.V Vanitha, Ch.Swathi, M.Srilatha, P.Ambika, M.Bhavya APSSDC Developers | 18/03/2021 to 19/03/2021 | 180 |
| One day FDP on Outcome Based Education | Dr G.Vara Prasad , Associate Professor, CSE Department, BMS College of Engineering , Bangalore | 02/04/2021 | 85 |
| Short Term Program on Python for Engineer’s | Dr.B.Nagaraju, Asst. Prof. Dept of CSE, National Institute of Technology Nagaland | 15/05/2021-31/05/2021 | 210 |
| One Day Workshop on "Call for Code using IOT | C.Yuktesh ,Developer Advocate, IBM India Pvt. Ltd. | 27/05/2021 | 6950 |
| One Day Workshop on "AI Application Development using IBM Cloud | C.Yuktesh ,Developer Advocate IBM PVT.LTD | 9/06/2021 | 8159 |
| Webinar on “Exploring Internet and Innovation | Mr.Sai Sateeesh, Founder and CEO of Indian Servers | 18/06/2021 | 2922 |
| Two Days Hands-on Bootcamp on Robotic Process Automation (RPA) using Blue Prism | Mr.Manjunath,Blue Prism, Mr.JaiPrakash Netha, Smart Internz | 22/06/2021-23/06/2021 | 2562 |

## TECHWINGS EVENTS CONDUCTED

| Name of the event organized | Date | No. of Students attended |
|---|---|---|
| Short film contest on Anti online Gambling & online loans. | 26/12/2020 | 35 |
| Distribution of Blankets to needy people at Government Hospital, Guntur. | 10/01/2021 | 30 |
| "Technical Quiz" | 23/02/2021 | 85 |
| Groceries for one month distributed to Orphanage | 31/03/2021 | 25 |
| AICTE (SPICES) Sponsored Seminar on “UNLOCK YOUR POTENTIAL” | 13/06/2021 | 1102 |

# FACULTY ARTICLES

## Real-Time Embedded Object Detection And Tracking System In Zynq Soc

With the increasing application of computer vision technology in autonomous driving, robot, and other mobile devices, more and more attention has been paid to the implementation of target detection and tracking algorithms on embedded platforms. The real-time performance and robustness of algorithms are two hot research topics and challenges in this field. In order to solve the problems of poor real-time tracking performance of embedded systems using convolutional neural networks and low robustness of tracking algorithms for complex scenes, this paper proposes a fast and accurate real-time video detection and tracking algorithm suitable for embedded systems. The algorithm combines the object detection model of single-shot multibox detection in deep convolution networks and the kernel correlation filters tracking algorithm, what is more, it accelerates the single-shot multibox detection model using field-programmable gate arrays, which satisfies the real-time performance of the algorithm on the embedded platform. To solve the problem of model contamination after the kernel correlation filters algorithm fails to track in complex scenes, an improvement in the validity detection mechanism of tracking results is proposed that solves the problem of the traditional kernel correlation filters algorithm not being able to robustly track for a long time.

In order to solve the problem that the missed rate of the single-shot multibox detection model is high under the conditions of motion blur or illumination variation, a strategy to reduce missed rate is proposed that effectively reduces the missed detection. The experimental results on the embedded platform show that the algorithm can achieve real-time tracking of the object in the video and can automatically reposition the object to continue tracking after the object tracking fails.

**Faculty Name: Smt.M.AshaAruna Sheela**

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## Visual Growth Tracking For Automated Leaf Stage Monitoring Based On Image Sequence Analysis

We define a new problem domain, called visual growth tracking, to track different parts of an object that grow non-uniformly over space and time for application in image- based plant phenotyping. The paper introduces a novel method to reliably detect and track individual leaves of a maize plant based on a graph theoretic approach for automated leaf stage monitoring. The method has four phases: optimal view selection, plant architecture determination, leaf tracking, and generation of a leaf status report. The method accepts an image sequence of a plant as the input and automatically generates a leaf status report containing the phenotypes, which are crucial in the understanding of a plant's growth, i.e., the emergence timing of each leaf, total number of leaves present at any time, the day on which a particular leaf ceased to grow, and the length and relative growth rate of individual leaves. Based on experimental study, three types of leaf intersections are identified, i.e., tip-contact, tangential-contact, and crossover, which pose challenges to accurate leaf tracking in the late vegetative stage. Thus, we introduce a novel curve tracing approach based on an angular consistency check to address the challenges due to intersecting leaves for improved performance. The proposed method shows high accuracy in detecting leaves and tracking them through the vegetative stages of maize plants based on experimental evaluation on a publicly available benchmark dataset.

**Faculty Name: Smt.B.Rajyalakshmi**

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## AI Increasingly At The "Edge"

"In the cloud" – when we search on Google or flick through recommendations on Netflix, the complex, data-driven algorithms run on high-powered processors inside remote data centers, with the devices in our hands or on our desktops, as the algorithms become more efficient and capable of running on low-power devices, AI is taking place at the "edge," close to the point where data is

gathered and used. This paradigm will continue to become more popular in 2020 and beyond, making AI-powered insights a reality outside of the times and places where super-fast fiber optic and mobile networks are available. Custom processors designed to carry out real-time analytics on-the-fly will increasingly become part of the technology we interact with day-to-day, and increasingly we will be able to do this even if we have patchy or non-existent internet connections.

**Faculty Name: Smt.Tejaswini**

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## AI in Cyber Security

As hacking, phishing and social engineering attacks become ever-more sophisticated and themselves powered by AI and advanced prediction algorithms, smart technology will play an increasingly important role in protecting us from these attempted intrusions into our lives. AI can be used to spot giveaway signs that digital activity or transactions follow patterns that are likely to be indicators of nefarious activity, and raise alarms before defenses can be breached and sensitive data compromised. The rollout of 5G and other super-fast wireless communications technology will bring huge opportunities for businesses to provide services in new and innovative ways, but they will also potentially open us up to more sophisticated cyber-attacks. Spending on cyber security will continue to increase, and those with relevant skills will be highly sought-after.

**Faculty Name:G.Pavani**

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## IOsH (Internet of Smart Health)

Internet of Things (IoT) is an ecosystem of connected physical objects that are accessible through the internet. When devices/objects can represent themselves digitally, they can be controlled from anywhere. The connectivity then helps us capture more data from more places, ensuring more ways of increasing efficiency and improving safety and IoT security.

Internet of Things is transforming the healthcare industry completely by redefining how apps, devices and people interact and connect with eachother in delivering healthcare solutions. That is, IoT is constantly offering new tools as well as efficiencies that make up an integrated healthcare system with the view of ensuring patients are cared for better, health care costs are reduced significantly and treatment outcomes are improved.

**Advantages of smart health:** The major advantages of the Internet of Things in those healthcare organizations can take advantage of including the following:

**Decreased Costs:** Patient monitoring can be done on a real- time basis, thus significantly cutting down on unnecessary visits by doctors, hospital stays andre-admissions.

**Improved Outcomes of Treatment:** Connectivity of health care solutions through cloud computing or other virtual infrastructure gives care givers the ability to access real time information that enables them to make informed decisions as well as offer treatment that is evidence based.

**Disease Management:** When patients are monitored on a continuous basis and health care providers by accessing real time data, diseases are treated before they get out of hand.

**Reduced Errors:** Accurate collection of data, automated workflows combined with data driven decisions are an excellent way of cutting down on waste, reducing system costs and most importantly minimizing on errors.

**Enhanced Patient Experience:** The connectivity of the health care system through the internet of things, places emphasis on the needs of the patient like proactive treatments, improved accuracy when it comes to diagnosis, timely intervention by physicians and enhanced treatment outcomes result in accountable care that is highly trusted among patients.

**Enhanced Management of Drugs:** Creation as well as management of drugs is a major expense in the healthcare industry. Even then, with IoT processes and devices, it is possible to manage these costs better.

**Early intervention**. Healthy, active people can also get benefited by IoT-driven monitoring their daily activities for well-being. A senior living alone, for example, may want to have a monitoring device that can help to detect a fall or other interruption in blood pressure, blood sugar levels etc. in everyday activity and report it to any immediate responders or family members. For that matter, an active athlete such as a hiker or biker can obtain benefit from such a solution at any age, particularly if it's available as a piece of wearable technology.

**Risks of network connected healthcare devices:**


- Healthcare providers, whether hospitals, doctors' offices, or insurance companies, collect and maintain an enormous amount of data, which has to be carefully managed and protected. When a nurse or doctor is dealing with a patient's immediate health issue, IT policy is going to rank second to the care of the patient.
- Health Information Exchanges (HIEs), where healthcare information is exchanged electronically across organizations with in a region, community, or hospital system, is intended to help healthcare providers have access to important patient information – but again, simply through the exchange of information, such networks put that information at risk.
- As part of the digital evolution, patients now want to communicate with their healthcare providers via email, which is notoriously one of the riskiest activities on the Internet.
- Mobile apps and websites have begun to play a large part in doctor-patient interactions. Apps provide

convenient ways for healthcare providers and patients to exchange information and engage with each other. But speed and convenience come at a cost: attacks on mobile devices are increasing, and these apps are very hackable. Potentially, they can introduce a door into an organization's networks and systems, risking data theft, loss, or tampering. According to Arsan's State of Mobile App Security, 90% of Android Healthcare/Medical apps have been hacked, 22% of which are FDA approved.

- Digital patient profiles are becoming more widespread – profiles which, if stolen, can provide cybercriminals with a huge pay day.
- More and more healthcare information is stored or is passed through the cloud at some point in its lifecycle. While the cloud can offer a great deal of security, because cloud service providers must be able to offer a secure environment, a lack of attention to that issue in the cloud can increase rather than decrease vulnerability.

**Facutly Name: Dr.Y.Rokesh Kumar**

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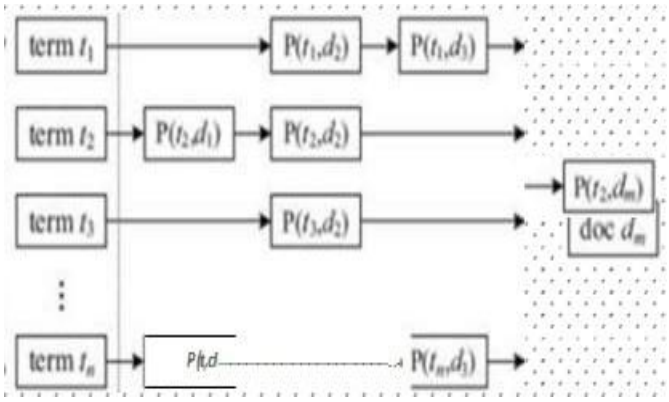
## Need Of Text Pruning In Ir Systems

Information Retrieval [IR] is a branch of computer science which deals with the retrieval of unstructured documents that should satisfy user's information need. To improve the efficiency of IR Systems, much of the attention has been given to retrieval efficiency, etc. Efficient Performance of IR system can be achieved by employing suitable data structure, policy driven memory caches and adequate algorithms to access these data structures. The most efficient data structure for implementation of IR system is inverted index.

**Inverted Index is described as a 3-tuple as follows:** The posting score is calculated through various approaches which also includes the particular IR scoring system. Conceptually, the inverted index can also be defined as a relation which consists of a list of terms as the cardinality and the document collection as the degree of the relation. Generally, it consists of only non-zero entries. A pictorial representation of an inverted index is shown in Fig




A key issue in the development of inverted index is to develop algorithms that reduce input output

bandwidths and storage overhead. The size of the index file determines the storage overhead imposed. Furthermore, large index files directly effects the processing times. In order to achieve efficiency, pruning methods are applied in the inverted index. Some posting lists entries maybe removed or pruned without significantly degrading precision. The user should not be able to recognize the difference in the results from an unpruned index and a pruned index. One of the most important aspects of pruning unimportant terms is to calculate the scores of the term based on the Chi-Square statistical method. The document score is computed based on the associated terms inside it. A document is pruned from the index if it falls below the specific threshold values. This is a lossy approach as it permanently discards some documents, thus subsequently postings entries. The method shows significant improvements of pruning at! eels of nearly 60% of the full inverted index did not significantly affect the precision.

**Faculty Name:P.Sathish**

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## 5G Mobile Transport and Computing Platform for Verticals

The support of 5G verticals service requires to design an efficient Mobile Transport and Computing Platform where transport, mobile and MEC must interact effectively. A novel architecture is proposed providing its mapping on ETSI NFV. Two relevant use cases, such as automotive and cloud robotics are presented to assess the novel architecture.

In particular, since the provider's NFVI is structured in several VIMs, the provider can offer the access to the service following two different types of interaction between the two administrative entities:

• Multiple Logical Point of Contact (MLPoC), where the consumer has the visibility of the different VIMs within the provider's administrative domain and communicate directly with each of them.

• Single Logical Point of Contact (SLPoC) , where the VIMs are hidden to the consumer and the provider's administrative domain contains a SLPoC function in charge of acting as a single unified interface offered to the consumer.

**LAYERED ARCHITECTURE FOR RADIO TRANSPORT AND IOT SERVICES**

According to the general architecture defined in 5G Transformer, the MTP has the main task to handle the infrastructure resources to manage suitably mobile and transport to provide the connectivity to the computation resources selected for the vertical services request.

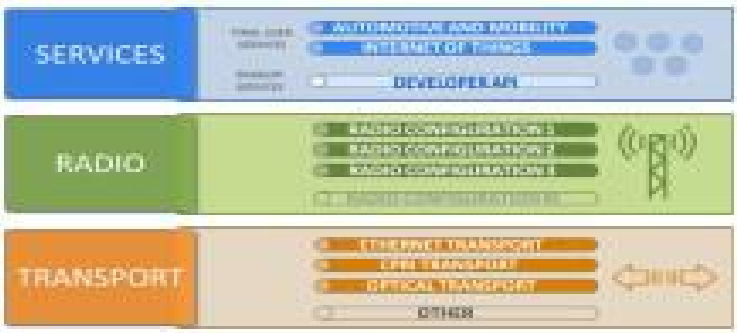


Fig. 2 Layered architecture for radio transport and IoT Services

**Faculty Name:Smt.D.Nagavardhani**

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## 5G Technology

The 5th generation of mobile networks, 5G is the evolution of the 4G networks of today. It has been created to meet and surpass the massive growth of data and connectivity of IoT, changing today's reality and paving the way for tomorrow.

Along with instantaneously connecting billions of devices and its exponentially faster connection speeds, capacity, and communication response times (known as latency). 5G will make an astonishing range of innovative new products and services possible.

5G is used for

**1.** Internet of Things: Connecting billions of machines and devices, the Internet of Things (IoT) is revolutionizing modern industrial processes and applications.

2. Real-time control: **Real-time control of devices**, vehicle to vehicle communications, autonomous driving and remote medical care are just a few examples of ultra-reliable low latency communications

**3.** Enhanced mobile broadband: Enhanced mobile broadband will feature dramatically faster data speeds, featuring fixed wireless internet for homes and greater connectivity for travelers.

**Faculty Name:G.Venkateswara Rao**

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## A Survey of Machine Learning Techniques Applied to Self-Organizing Cellular Networks

A survey of the literature of the past 15 years involving machine learning (ML) algorithms applied to self-organizing cellular networks is performed. In order for future networks to overcome the current limitations and address the issues of current cellular systems, it is clear that more intelligence needs to be deployed so that a fully autonomous and flexible network can be enabled. This paper focuses on the learning perspective of self-organizing networks (SON) solutions and provides, not only an overview of the most common ML techniques encountered in cellular networks but also manages to classify each paper in terms of its learning solution, while also giving some examples. The authors also classify each paper in terms of its self-organizing use-case and discuss how each proposed solution performed. In addition, a comparison between the most commonly found ML algorithms in terms of certain SON metrics is performed and general guidelines on when to choose each ML algorithm for each SON function are proposed. Lastly, this paper also provides future research directions and new paradigms that the use of more robust and intelligent algorithms, together with data gathered by operators, can bring to the cellular networks domain and fully enable the concept of SON in the near future.

**Faculty Name:Pullagura Sudheer**

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## Data Reduction &Techniques:- A Simple and Mammoth data

In today's data-heavy systems, where everything is captured for future use, you get a mammoth data (powerful ***data*** management) set on every load. This data set could be big in terms of observations or quite minuscule in terms of the number of features or columns, or both. Data mining becomes tedious in such cases, with only a few important features contributing to the value that you can take out of the data. Complex queries might take a long time to go through such huge data sets too. In such cases, a quick alternative is data reduction. Data reduction consciously allows us to categorize or extract the necessary information from a huge array of data to enable us to make conscious decisions.

In this article, I will explore

1. What is Data Reduction?

2. Data Reduction and Techniques?

1. What is Data Reduction?

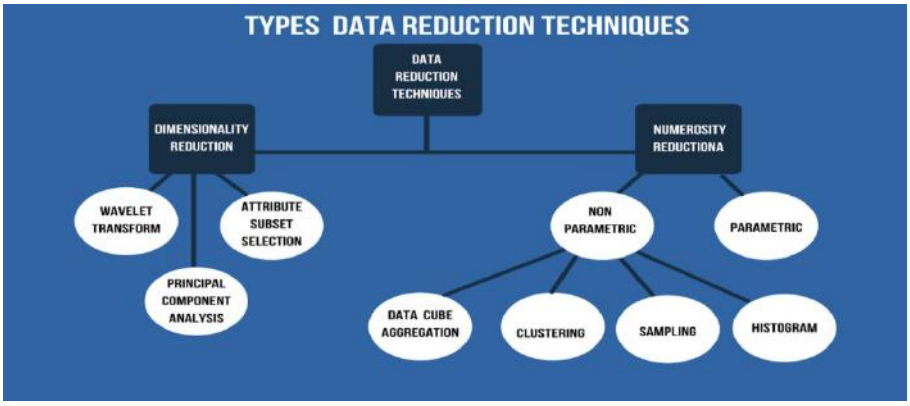
Data reduction is the transformation of numerical or alphabetical digital information derived empirically or experimentally into a corrected, ordered, and simplified form.
In simple terms, it simply means large amounts of data are cleaned, organized and categorized based on prerequisite criteria to help in driving business decisions.

2. Data Reduction and Techniques?

There are two primary methods of Data Reduction, Dimensionality Reduction and Numerosity Reduction.

A)Dimensionality Reduction.
B) Numerosity Reduction.
C) Histogram.
D) Clustering.
E) Sampling.
F) Data Cube Aggregation.
G) Data Compression.

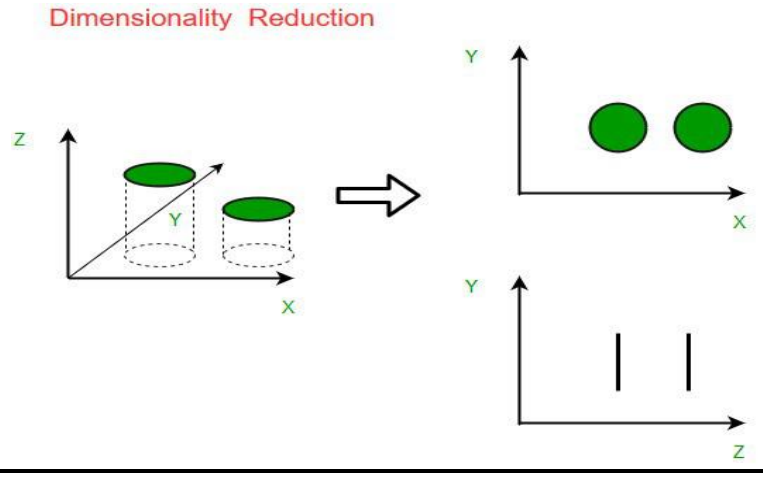
Data Reduction Techniques image




In above figure two primary methods of Data Reduction, Dimensionality Reduction and Numerosity Reduction.

1) **Dimensionality Reduction:**

Dimensionality reduction refers to techniques that reduce the number of input variables in a dataset. More input features often make a predictive modeling task more challenging to model, more generally referred to as the curse of dimensionality.



**Wavelet Transform in data mining:**
Wavelet Transform is a loss method for dimensionality reduction, where a data vector X is transformed into another vector X', in such a way that both X and X' still represent the same length. The result of wavelet transform can be truncated, unlike its original, thus achieving dimensionality reduction. Wavelet transforms are well suited for data cube, sparse data or data which is highly skewed. Wavelet transform is often used in image compression.

**What is Principal Component Analysis:** This method involves the identification of a few independent tuples with 'n' attributes that can represent the entire data set. This method can be applied to skewed and sparse data.

**Attribute Subset Selection data mining:** Here, attributes irrelevant to data mining or redundant ones are not included in a core attribute subset. The core attribute subset selection reduces the data volume and dimensionality. Numerosity Reduction data mining. This method uses alternate, small forms of data representation, thus reducing data volume. There are two types of Numerosity reduction, Parametric and Non-Parametric.

**Parametric:** This method assumes a model into which the data fits. Data model parameters are estimated, and only those parameters are stored, and the rest of the data is discarded. For example, a regression model can be used to achieve parametric reduction if the data fits the Linear Regression model.
Linear Regression models a linear relationship between two attributes of the data set. Let's say we need to fit a linear regression model between two attributes, x and y, where y is the dependent attribute, and x is the independent attribute or predictor attribute. The model can be represented by the equation y=wx b. Where w and b are regression coefficients. A multiple linear regression model lets us express the attribute y in terms of multiple predictor attributes. Another method, the Log-Linear model discovers the relationship between two or more discrete attributes. Assume, we have a set of tuples in n-dimensional space; the log-linear model helps to derive the probability of each tuple in this n-dimensional space.

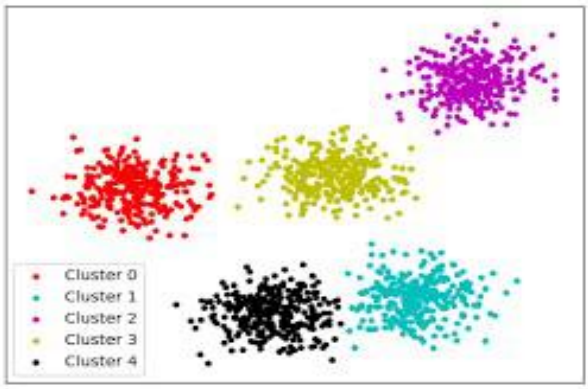
**Non-Parametric:** A non-parametric numerosity reduction technique does not assume any model. The non-Parametric technique results in a more uniform reduction, irrespective of data size, but it may not

achieve a high volume of data reduction like the Parametric one. There are at least four types of Non-Parametric data reduction techniques, Histogram, Clustering, Sampling, Data Cube Aggregation, Data Compression.
Histogram in data mining

A histogram can be used to represent dense, sparse, skewed or uniform data, involving multiple attributes, effectively up to 5 together.

**Clustering in data mining**

In Clustering, the data set is replaced by the cluster representation, where the data is split between clusters depending on similarities to each other within-cluster and dissimilarities to other clusters. The more the similarity within-cluster, the closer they appear within the cluster. The quality of the cluster depends on the maximum distance between any two data items in the cluster.




**Sampling data mining:**

Sampling is capable of reducing large data set into smaller sample data sets, reducing it to a representation of the original data set. There are four types of sampling data reduction methods.

- Simple Random Sample Without Replacement of sizes
- Simple Random Sample with Replacement of sizes
- Cluster Sample
- Stratified Sample

**Data Cube Aggregation data mining**

Data Cube Aggregation is a multidimensional aggregation that uses aggregation at various levels of a data cube to represent the original data set, thus achieving data reduction. Data Cube Aggregation, where the data cube is a much more efficient way of storing data, thus achieving data reduction, besides faster aggregation operations.

**Data Compression data mining**

It employs modification, encoding or converting the structure of data in a way that consumes less space. Data compression involves building a compact representation of information by removing redundancy and representing data in binary form. Data that can be restored successfully from its compressed form is called Lossless compression while the opposite where it is not possible to restore the original form from the compressed form is Lossy compression.

**Conclusion:**

Data reduction achieves a reduction in volume, making it easy to represent and run data through advanced analytical algorithms. Data reduction also helps in the deduplication of data reducing the load on storage and the algorithms serving data science techniques downstream. It can be achieved in two principal ways. One by reducing the number of data records, or the features and the other by generating summary data and statistics at different levels.

**Faculty Name: Dr.P.Ratna Babu**

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## Latest Technology Trends – Every Computer Science Student Must Know About!

More and more students enroll in computer science. There has never been a better time than this. The recent stats show that students graduating in computer science have the chance to start their career with the highest paying salaries as compared to other domains. They are high in demand, and they can afford to be picky about their industry to start with. Technology has been growing exponentially over the past decades, and industries are looking for fresh graduates in new technologies in computer science who can join their team and help them to transform their ideas in a better manner.

If you have an interest in computer science, then you should learn the latest technology in computer science to make a calculated move in your field. Before opting for the field of your choice, look for latest technologies for sale online to stay updated with everything happening in the tech world.Here are the five latest technologies in computer science which are storming the industry they are –

1. Big Data Analytics
2. Artificial Intelligence
3. Edge Computing
4. Cyber Security
5. Virtual Reality

**Faculty Name:Mr.G.Bharath Kumar**

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## The Integral Of Education Technology In The Society

Are there ways people can better utilize technology to suit their needs in the society of ours? It has been inferred that without technology, our lives would be miserable. The societal factors of using technology are an important area of the technical education system in the world. Are we really learning and using technologies to our advantage? Does technology provide the necessary ingredients or proper ways for the education of all in the society? A look into what constitutes the means and how technology education can be improved and be implemented is explored and emphasized in this work. The justification predicaments are discussed accordingly. The presumption as to how technology affects our lives is also confirmed. It is discovered that we learn by quantum thinking, which means by looking at the world in a new way; and learning in a safe and secure environment. It may also be inferred that people and not technology determine what is to be learned. Technology education creates a foundation for the success of professionals. The technology education of the professionals may be formal or informal. The combinations of formal and informal education are the major fundamental of professionalism. The education obtained through informal education is the day-to-day observations or scanning of the environment or societal activities of the population. Informal education maybe Classified as knowledge or education obtained out of the classroom or out of the congregation of people. It is the education acquired through the exploration of various paraphernalia of possible educational documentation or situations. The formal education obtained by many professionals is classroom-based; these may be through seminars or conferences. The basis for educating the professionals is to update their skills because of changes in the society: Thus; this shows the purpose and the need for strategic educational planning. With thorough explorations of various studies, we may conclude that the relationships between the time spent using technology, fatigue, or boredom is to justify the learning experience.

Faculty Name: **Smt.K.Aruna Kumari**

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## The Effects of Computer and Information Technology on Education

In the society of ours, is it true really that computers and information technology have contributed immensely to the way we learn? After observing and reading various educational paraphernalia and scanning the environment research has shown that the educational systems have greatly been impacted by computers and information technology. With the growth of technology, the ways we learn have been improved tremendously. Innovative technologies have contributed to the innovation of learning in the education arena and outside. The traditional ways of conveying instructions to learners have been augmented with the use of computers information technologies. The educational system of our institutions is mandated today to using computer technologies to teach. All subjects, be it History, Physics, Chemistry, Biology, English, Aviation, Real Estate, Economics, Political Science, Engineering, Business and the subject of Computer Science itself are being taught with the usage of computer technologies. It has come to past that traditional modes of conveying instructions and teaching are now opaque or in the dark perspectives. By using computers and information technologies in educating the populace, they allow us to convey instructions and ideas to people. It is found that globalization of technology entities comprising the learning processes is the configuration of computers in the facts. In education, computers are now being used to project information to people in the classrooms, churches, conference halls, homes, on the street and anywhere or any place education takes place. One can learn anywhere or anyplace, therefore the use of technology is a vigorous way of making things simple, ease and readily available.

**Faculty Name: Mr. Narne Srikanth**

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## Over-The-Air Firmware: The Critical Driver Of Iot Success

In the early days of IoT, updating remote devices often caused intermittent disruption and performance degradation. As IoT platforms have matured, they have embraced a novel way to remotely and reliably update connected devices with little to no disruption: over-the-air (OTA) firmware updates. Over-the-air firmware updates refers to the practice of remotely updating the code on an embedded device. The embedded hardware must be built with OTA functionality for this mechanism to work.

**WHY OTA FIRMWARE?**

Prior to OTA updates, you had to go out and retrieve the device, take it apart, connect it to your computer, reprogram it, put the device back together, and then take the device back.

However, this process is overly burdensome and unscalable for companies who have devices out on the field. Although, it hasn't stopped some from trying.

- In 2015, Chrysler was criticized for patching a software vulnerability via mailed USB drives. Chrysler's method put many consumers at risk because the USB drives could be intercepted, modified, and resent.

On the other hand,

- In 2016, Tesla drivers woke up to find substantial new features to their car after the company sent out an OTA firmware update. Consumers could now self-park their cars without having to manually update their vehicles.

You tell us which is the better headline.

## OTA FIRMWARE BENEFITS

- **Bugs and product behavior** can be continuously improved even after the device is in the hands of your consumers.
- **Companies can test new features** by sending updates to one or multiple devices.
- **Companies can save costs** by managing the firmware across their fleet of devices from a seamless, unified interface.
- **Developers can deploy frequently and reliably**, knowing that products will stay functional as updates are released.
- **OTA firmware augments scalability** by adding new features and infrastructure to products after they are released.

## OTA FIRMWARE & DEVICE MANAGEMENT

To send out OTA firmware updates, you need a device management system that can interface with microprocessors and local software on IoT devices. This is complicated to build because few companies have an IoT software and hardware ecosystem that can process OTA firmware updates and manage remote devices.

## IMPLEMENTING OTA FIRMWARE UPDATES

There are two options companies can take: you can build your own OTA firmware system or buy a managed OTA firmware system. For the build route, it is imperative that you research, plan, and consult domain experts to help you add OTA functionality to your hardware and software. Implementing the proper industry encryptions, finding the compatible hardware/software, and finding domain experts who can actually help you will be some of your biggest concerns.

However, due to the complexities of transmitting of the data and security concerns, you could harness a pre-built managed platform solution like Particle.

## GETTING STARTED WITH PARTICLE AND OTA FIRMWARE

Particle is a full stack IoT platform that offers the hardware and software tools to connect everyday electronics to the internet. Part of this platform, Particle cloud and console, also allows consumers to control fleets of devices and products with wireless firmware updates. Here are some of the benefits of using Particle for OTA firmware updates:

- **Future-proof your products** knowing that Particle is taking care of the infrastructure, hardware, and software.
- **OTA firmware updates are sent in chunks** so your device won't brick. If your device loses connection during the update process, it'll just resume when the connection comes back online.
- **Firmware updates are delivered quickly** because the update is just sent to the application layer and not the system layer. Particle only pushes parts of the application that have changed to the device.
- **Easily scale from sending OTA firmware updates** from 1 to 1,000 devices without hardware scalability or software issues.
- **Test application updates** by sending firmware updates to one or a controlled group of devices.
- **Deliver updates securely** knowing all communication channels between the device and Particle cloud are fully encrypted and authorized.

- **Document each release** thoroughly via Particle console to provide your team a comprehensive picture of what has changed in each version.
- **Devices can be set into safe mode** so it doesn't execute any application code, which can be useful if new application code contains bugs that stop the device from connecting to the cloud.

**Faculty Name: Ms. Sk.Raziya Sultana**

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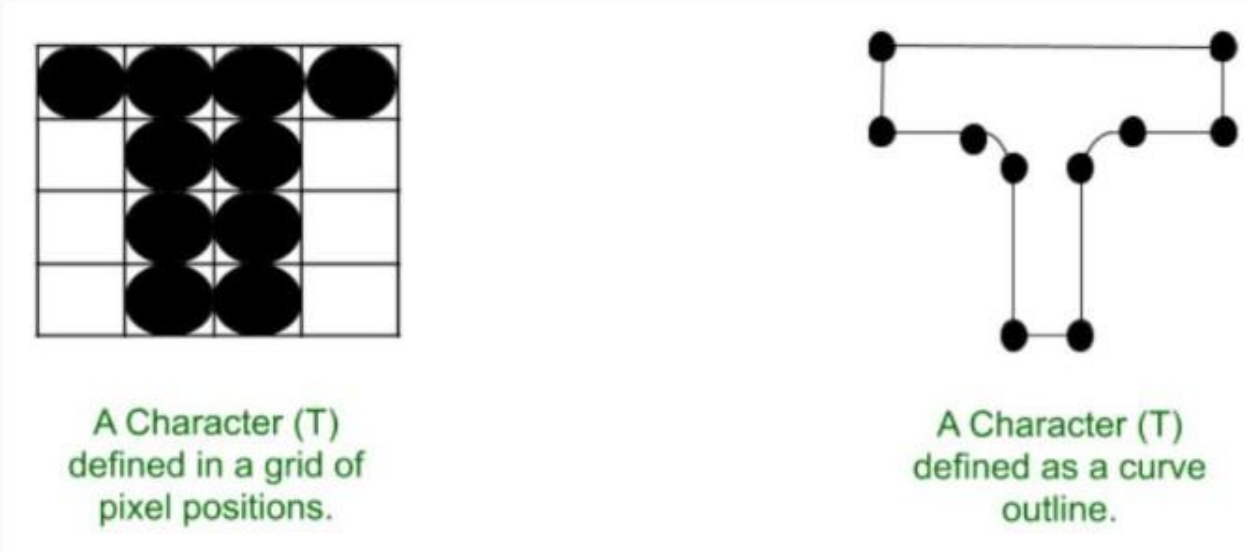
## Display Processor in Computer Graphics

**Display Processor** is the interpreter or a hardware that converts display processor code into picture. The Display Processor converts the digital information from CPU to analog values. The main purpose of the Digital Processor is to free the CPU from most of the graphic chores. The Display Processor digitize a picture definitions given in an application program into a set of pixel intensity values for storage in the frame buffer. This digitization process is called Scan Conversion.



A Character (T) defined in a grid of pixel positions.

A Character (T) defined as a curve outline.

**Silent features of Display Processor:**

- Display processors includes functions such as generating various line styles, displaying color area and performing transformations and manipulations on display object.
- Display Processor was used before the GPU (Graphics Display Processor).
- Video Controller is the most widely used Display device that is based on CRT (Cathode Ray Tube).
- In addition with the system memory, Display Processor have a separate memory area.

**Display Devices:**

There are large number of Display Devices available to free the CPU from graphic chores:

- Refresh Cathode Ray Tube
- Random Scan and Raster Scan
- Color CRT Monitors

**Faculty Name: Smt. D.Surekha**

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# STUDENT ARTICLES

## Life: The Precious one to Feel

Anybody guess what is the most expensive in the world.The most expensive thing in the world is our LIFE.

The worst thing is we guys really compare our self with the people who are better than ours and feeling bad, little bit jealous and thinking them selves as worst in the world. In my view comparing our selves is sometimes good and many times bad.

Why I was saying that sometimes good and many times bad is we need to be compared ourselves with the person who having always positive thoughts and positive vibes. And don't compare ourselves with the people who are really good at some financial status, and some economical status in the society. I also a person who compared myself with the people having always positive thoughts I was really jealous of them and I used to think that what can I eat to become like then…. But I have got an answer at some stage of my life …

And I think that people all are different and talented in their own ways. No one is compared to others in my view . We have made to realize our self-first means what the thing you have to do in the future and that thing makes us totally happy and feels better in our life then take that as your passion and make your passion As a goal and start race about to the goal. Life is really a simple. But in simple life we have found lot of amazing things like we found a family, we found friends.

At inter mediate of schooling we found a lot of friends and get some dare to bunk the college. At graduation time we apply that tricks what we have learn in inter.

This tricks are both applicable in studies and as well as in normal life .We guys really thinking that life is very simple, but when we checked our past life then we can find a lots memories and I think that these memories is also most expensive in the world this memories are unaffordable Sooo.

In my view our life is a most expensive than other things in the life .I was a person who always hate myself at stage of my schooling. And I am a person who thinks that I was waste and a garbage of the earth. And I always used to cry as like a silly girl. But at some stage of my life, I was realized that and that makes me to start a new and fresh start again.

The thing what I have realized is life is a most precious thing in the world if this day passes again we cant live in this same day and in same time so every day and every time in our life is so precious And the thing I want to say is don't hate yourself. Because if you hate yourself then nobody in world loves you. And you only self who travel with you to the death no one in the world come to company you. Only our self only company you and our shadow to leave you in the darkness like this nobody can help you when you are in hopeless situations. And we guys really used to think a solution for a problem in only a way but we have may directions and that directions are multi, If we search in multi directions then we really find a solution but that solution is not 100% accuracy, its just 80% by our smartness, hard work makes to 100%. Family, friendship, smartness, attitude, bravery, dare. These things makes a LIFE complete.

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## Manipulating the Human Mind- Social engineering " The Human Hacking"

**Introduction to Social Engineering: -**

Social Engineering is the art of manipulating human psychology to gain access to their system or to perform your desired work by manipulating his mind. For ages, Social engineering is being used everywhere in every other field. It has been proven that social engineering is the best way for criminals to get access to organizations or to perform their desired work.

It is the best tactic of gaining sensitive information by exploiting basic human nature such as:

- Trust
- Fear
- Desire to Help

**Social engineers mostly play with the human weakness: -**

1. People are usually the weaker link in the security chain
2. Social engineering is the hardest form of attack to defend against because it cannot be defended with hardware or software alone.
3. Hackers can attempt social engineering attack on office workers to extract office sensitive data such as

- Security policies
-Sensitive data
-Office network infrastructure
-Passwords


**Social engineering can be divided into two categories: -**

1.Human-based - Gathers information by interaction, Attacks of this category exploit trust fear and the helping nature of humans.

2.Computer-based - Social engineering is carried out with aid of computers.

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## The WIRED Guide to 5G

**THE FUTURE DEPENDS** on connectivity. From artificial intelligence and self- driving cars to telemedicine and mixed reality to as yet undreamt technologies, all the things we hope will make our lives easier, safer, and healthier will require high-speed, always-on internet connections. To keep up with the explosion of new connected gadgets and vehicles, not to mention the deluge of streaming video, the mobile industry has introduced something called 5G- so named because it's the fifth generation of wireless networking technology.

The promise is that 5G will bring speed so far arround10 gigabits per second to your phone. That's more than 600 times faster than the typical 4G speeds on today's mobile phones, and 10 times faster than Google Fiber's standard home broadband service-fast enough to download a 4K high-definition movie in 25 seconds, or to stream several at the same time. While US carriers have introduced 5G networks in dozens of cities, the first ones aren't nearly that fast.

At first many carriers began rolling out 5G by building atop their 4G or LTE networks, which produced lots of connectivity, but not at the speeds most associated with 5G. Gradually, the major American telecom carriers have introduced standalone versions of their networks, meaning they don't piggyback on existing infrastructure. T-M0bile's offering covers 1.3 million square miles, or 34 percent of the US. When T-Mobile acquired Sprint earlier this year, it picked up a substantial amount of wireless spectrum, which is now part of T-Mobile's network. Dish Network acquired some of Sprint's wireless assets as a condition of the merger, and the satellite company is now developing its own cellular service.

Early in its 5G efforts, AT&T marketed a network it described as 5G E, but experts called it a spiffed-up version of the company's current LTE network, and the National Advertising Review Board eventually recommended the company stop using that terminology, saying it was misleading consumers. The company says its 5G network reaches 205 million people and offers speeds that are similar to or faster than its LTE offering. In July 2020, AT&T announced that its 5G+ service, which runs in the faster millimeter wave spectrum (more on that shortly), is available in parts of 35cities.

Like AT&T, Verizon is using mmWave, the fastest part of 5G spectrum, for its network, which means customers can expect fast speeds but, so far, less broad coverage. The company says its 5G Ultrawide offering is available in 36 cities.Why are the availability and speeds so variable? It's because 5G service is offered in three different parts of the electromagnetic spectrum. Low-band, which operates below

1Ghz, can reach speeds of 250mbps. The trade-off for low-band's comparatively slower speeds is a broad reach, which means carriers can leave more distance between towers using this kind of equipment. Analysts call the mid-band of the 5G spectrum the sweet spot, as it has a broad geographic reach and is faster than low-band. Mid-band operates between 1 and 6 GHz and can achieve speeds upto 1Gbps. AT&T and T-Mobile's wide-reaching 5G networks operate in the mid-band.

To reach the top speeds associated with 5G, carriers need millimeter-wave (or mmWave) technology, which takes advantage of the very high end of the wireless spectrum. MmWave could enable those 10-Gbps speeds, but it comes with a trade-off: Millimeter-wave signals are less reliable over long distances and are easily disrupted by obstacles like trees, people, and even rain. To make it practical for mobile use, carriers need to deploy huge numbers of small access points in cities, instead of relying on a few big cell towers as they do today.

Of course, for mobile users to take advantage of these new 5G networks, they'll need new devices. Most major phone makers either offer 5G handsets now or expect to by the end of 2020. Samsung, LG, and Motorola sell 5G-compatible phones; Google is working on a 5G version of the Pixel, and a 5G-compatible iPhone is expected before the end of this year. To date about 4.6 million 5G-compatible phones have been sold, according to the consultancy M Science; that means fewer than 2 percent of Americans with cell phones can take advantage of 5G.

## The Race for 5G Dominance

The US has been keen to claim a leadership role in worldwide 5G deployment, but so far it hasn't fully succeeded. China-based Huawei is the world's leading maker of 5G network equipment, and while its equipment is deployed widely, the company has faced scrutiny from western nations for its alleged ties to the Chinese government. The Trump administration is intent on keeping Huawei technology out of American networks, and earlier this year the US Department of Justice accused the company of conspiring to steal American trade secrets. Another fear has been that if China is first to 5G, its burgeoning tech industry will create the next global mobile platform; 5G could also give China an edge in the AI race. More devices connected to networks would mean more data. More data with which to train algorithms could mean better AI applications. The US government has also said Huawei can't use

American-built technology in its networking chips. The UK, Australia, India, Japan, and Taiwan are among the countries that have banned Huawei equipment from their networks. The bans stand to benefit companies like Nokia, Ericsson, and Samsung-notably, none of them headquartered in the US-which also make 5Gequipment.

As the US struggles to lead on the network side, it's also behind in 5G from a speed perspective. A recent report from the UK-based research firm Opensignal analyzed the speeds that users typically get and found that Saudi Arabia had the fastest 5G

download, topping out at 144.5 Mbps, with Canada ranking second at 90.4 Mbps. (The consultancy didn't include China in its analysis.) South Korea has the highest rate of 5G adoption, with 10 percent of users on 5G, and its networks ranked third; the US, with an average speed of 33.4 Mbps, ranked 11th. Users are connected to 5G 20 percent of the time or more in only four countries, Open signal found; the US, where users connected to 5G 19.3 percent of the time, ranked fifth. "The US is much

higher ranked on 5G availability than on average download speed because the low-band spectrum is ideally suited to enable great 5G reach and allow users to spend more time connected than in countries

with higher frequency 5G spectrum," Open signal wrote. In recent tests both Open signal and PC Magazine found in tests that Verizon offered the fastest 5G speeds among American cell phone carriers. The top download speeds the surveys found varied considerably (an average of 494.7 Mbps from Open signal and 105.1 Mbps from PC Magazine), but the results suggest that exponentially faster cellular networks aren't just on the horizon; they're here.

**How We Got From 1G to 5G**

The first generation of mobile wireless networks, built in the late 1970s and 1980s, was analog. Voices were carried over radio waves unencrypted, and anyone could listen in on conversations using off-the-shelf components. The second generation, built in the 1990s, was digital which made it possible to encrypt calls, make more efficient use of the wireless spectrum, and deliver data transfers on par with dialup internet or, later, early DSL services. The third generation gave digital networks a bandwidth boost and ushered in the smartphone revolution.

(The wireless spectrum refers to the entire range of radio wave frequencies, from the lowest frequencies to the highest. The FCC regulates who can use which ranges, or "bands," of frequencies and for what purposes, to prevent users from interfering with each other's signals. Mobile networks have traditionally relied mostly on low- and mid- band frequencies that can easily cover large distances and travel through walls. But those are now so crowded that carriers have turned to the higher end of the radio spectrum.)

The first 3G networks were built in the early 2000s, but they were slow to spread across the US. It's easy to forget that when the original iPhone was released in 2007 it didn't even support full 3G speeds, let alone 4G. At the time, Finnish company Nokia was still the world's largest handset manufacturer, thanks in large part to Europe's leadership in the deployment and adoption of 2G. Meanwhile, Japan was well ahead of the US in both 3G coverage and mobile internet use.

But not long after the first 3G-capable iPhones began sliding into pockets in July 2008, the US app economy started in earnest. Apple had just launched the App Store that month, and the first phones

using Google's Android operating system started shipping in the US a few months later. Soon smart phones, once seen as a luxury item, were considered necessities, as Apple and Google popularized the gadgets and Facebook gave people areas on to stay glued to their devices. Pushed by Apple and Google and apps like Facebook, the US led the way in shifting to 4G, leading to huge job and innovation growth as carriers expanded and upgraded their networks. Meanwhile, Nokia and Japanese handset makers lost market share at home and abroad as US companies set the agenda for the app economy.

**The Future of 5G**

Now, after years of promises and years of waiting, 5G is finally arriving in consumers' pockets. The US Federal Communications Commission has held several auctions for 5G spectrum. In August the Trump administration said it will sell off more sections of the mid-band spectrum to spur 5G adoption.
There's more to 5G than mobile phones; 5G technologies should also be able to serve a great many devices nearly in real time. That will be crucial as the number of internet- connected cars, environmental sensors, thermostats, and other gadgets accelerates in coming years. For example, 5G

could help autonomous cars communicate not only with one other a kind of, “hey, on your left!”set of exchanges but also, someday, roads, lights, parking meters, and signals. And 5G’s low latency means that 5G could enable remote surgeries, allowing physicians in one location to manipulate network-connected surgical instruments thousands of miles away; medical providers may also be able to rely on 5G to rapidly transmit high-resolution images for use in diagnosis and treatment. Manufacturers can use 5G networks to monitor production lines remotely and maintain video feeds of their factory floors. Some companies are licensing their own bit of 5G spectrum and are replacing their Wi-Fi networks with private 5Gnetworks. And even though 5G remains far from universally available, the telecom industry is already looking forward to the next big thing, the technology that will take advantage of areas of the wireless spectrum above 100 Ghz: 6G.

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## Kotlin

Google’s been encouraging Kotlin use for Android development. “Android programming is about Java and Kotlin.” “These two JVM languages will be trending.” Kotlin is widely used for Android native app development. Android apps can be developed using Java 8, Kotlin is now the preferred language for most developers. Kotlin is a JVM-based language, and it supports all Java libraries. So, developing backend services using Kotlin .Built on the JVM, Kotlin’s portability gives the language large breadth, from mobile to server-side Kotlin can operate in a variety of environments. Some developing features are null safety, co-routine support, and the mix of procedural and functional programming features.”

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## Artificial neurons recognize bio-signals in real time:

Neuromorphic engineering is a promising new approach that bridges the gap between artificial and natural intelligence. A chip based on neuromorphic technology is reliably and accurately recognizes complex biosignals. This technology is used to successfully detect previously recorded high-frequency oscillations (HFOs). These specific waves, measured using an intracranial electro encephalogram (iEEG), have proven to be promising biomarkers for identifying the brain tissue that causes epileptic seizures.

Algorithm that detects HFOs by simulating the brains natural neural network: a tiny so-called spiking neural network (SNN). The second step involved implementing the SNN in a fingernail-sized piece of hardware that receives neural signals by means of electrodes and is massively energy efficient. This makes calculations with a very high temporal resolution possible, without relying on the internet or cloud computing. Our design allows us to recognize spatiotemporal patterns in biological signals in real time.

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## Contemporary Art Melt-Down

Indian art walked much ahead of corporate India before world took notice of vibrant Indian economy and began believing in Indian capacity to consistently maintain two-digit annual growth. Indian contemporary artists who were confined mostly to Indian sub-continent and ignored by western media and art world reached Europe and America even before IT professionals began crowding many international airports. Though , not noticed by Indian media or Indian establishments, Indian art helped to change the stereotype image of India into a vibrant country of immense possibilities. Today , Indian

art is witnessing exponential growth both culturally and commercially. Despite meltdown, it is considered as the fourth most buoyant art market in the world.

During last decade when India was making strides and became confident of its bright future , Indian art was making a silent statement across the globe. Over the years , Indian art has seen transition periods – ancient art of temple and sculptures , art by darbar artists in courts of kings , Mughal and British periods and post independence period . It has grown without giving up its own uniqueness and the same time striking a cord at the international level. Artists by and large are now expressing concerns and aspirations of the nation as a whole in their own styles.

Two major milestones during post independence period. The emergency during which art world realized that its basic right to freedom of expression was fundamental to its existence and growth . Secondly, the process of globalization which began in early 1990s, helped it to move on with more confidence without any baggage from the past. It was not abrupt change but gradual awareness of its global relevance.

If one observes closely the trends in Indian art over the years, it has explored its own past , delved deeply in symbols and expressions available in our own culture to take further its journey to impress and impact art world at international level. Indian artists have also taken shelter behind philosophical thought that the " absolute " cannot be created nor destroyed but it can only be felt and understood . Universal language of abstraction ism is also not new to the India. Using traditional abstract form of expression on canvas , Indian art has really become global . As a result ,Indian masters are being appreciated by major art auction houses , curators and art lovers from West.

Just to give a few examples, Jogen Chowdhry, Bhupen Khakhar, F.N.Souza , Gaitonde , Prabhakar Kolte are dominating art auctions world over . They stand out for one reason, they not only link with the Indian way of life but at the same time create modern myths based on their own personal interpretations. Author Ranjit Hokote, poet Gieve Patel, and other curators are putting Indian art with proper perspective for West to understand it in more meaningful manner.

During last decade art works from Indian artists including Subodh Gupta, T V Santosh, Jitish Kallat Thukral and Tagra are figuring quite prominently at Christie's Autumn sales of contemporary art in Hong Kong. A few years ago , it would not have been possible.

Indian artist Francis Newton Souza has fetched a world auction record price of 1,273,250 pounds at the Christie's auction in London.Amongst the masterpieces offered by the auction house ,Souza's 'Birth´ (1955) realized maximum price for the work , setting a new world auction record for the artist and for any Indian Modern and Contemporary work of art. It was possible only because , world had began taking note of vibrant India ,its people and art. Christie's global clients have began taking keen interest in works by leading modern and contemporary Indian artists. Syed Haider Raza's key work 'La Terre´ is part of Christie's London Post War and Contemporary Art Evening. Raza was member of progressive artists group which was set up in early 1950s at the Artists Centre at Kalaghoda in art hub of Mumbai.

It is not only multi-million tag which is being talked about Indian art abroad but consistency with which Indian art is dominating discussion and debate about art in any forum. It is not merely region specific or style representative, but it is being taken seriously as a part of contemporary global art. If one merely takes a look at the price tag of some of the serious Indian art work, one will realize impact Indian art has on the art world. Contemporary art from the country has fetched record prices at various auctions conducted during last decade, especially during last year. As mentioned , the total auction market size of

Indian art has jumped from $5 million in 2003 to nearly $150 million last year. Apart from appreciation of Indian masters, number of Indian artists are finding place of recognition across the continents.

Recently, a group of 25 Indian artists had a group show at Serpentine Gallery in United Kingdom and attracted art lovers, collectors, artists , critics alike . These developments and new found place for Indian art is very encouraging for young artists from the subcontinent. It is heartening to note that while art markets in the America and Europe have taken a beating as a result of bubble burst, Indian art together with its Chinese counterpart have been able to keep its head above. No doubt it has slowed down sales and brought down prices of art work, it is actually blessings in disguise as only good and serious work and artists will survive while pseudo artists and their supporters would vanish from the scene.

History of Indian Art is as old as the Indian civilization and no wonder the strides made by Indian art is making every Indian proud . It is not merely number of Indian artist who have been dominating art world , or being sold at higher price tags , but the fact that it largely represents Indian way of understanding life and complexities of nature that provides confidence to the nation, standing at a cross roads. India has been a melting pot of different cultures and Indian art has been influenced and yet survived its uniqueness by blending new influences.

Contemporary Indian art shows rare kind of maturity and high degree of sophistication. It is showing readiness to imbibe global trends without fear of losing its inherent strength and willing to experiment. Indian artist is also no more confined to one single medium of oil on canvas or water colour on paper , but is neither afraid nor against using all or mix of available mediums. If one takes a close look at contemporary Indian art , one will not find any distinction between paintings, assemblages, installations, collages and sculptures as Indian artists with new level of energy is exploring all available mediums.

As a result of globalization of world economy during last decade, support base for Indian art has also got transformed. Apart from supporting business houses, government agencies, and royal rich families, discerning Indian middle class which also benefited from economic growth has been supporting Indian art in a big way. This new found love for art has given immense sense of identity and pride to globe trotting professional Indians during first decade of the 21st century. We can hope that Indian art will be more at ease in experimenting and breaking new grounds in coming years.

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## How Technology is shaping the Future

As a We are living in an age where technology is running the world. There are numerous innovations that are being aimed at improving the efficiency of life. Since the beginning of the internet era, new technologies have been invented at a rate that no one ever conceived. Now that people understand the capabilities that technology can bring, they are using their time to work on innovations that can shape the future of our world. Starting from education, businesses, fashion, design, marketing, and even the automotive industry, inventions are being made that streamline every aspect in these areas. Even in the field of medicine, researchers and doctors are using technology to solve problems that were believed to be insurmountable. Below are some of how technology is shaping the future.

**1. Artificial Intelligence**

We've all seen sci-fi movies about an AI that threatens to overturn the human race and take over after developing a mind of its own, but that's not quite the reality of it. AI has been around for decades. Today, it's being used in applications such as video games, fraud protection, and spam detection in your emails.

There is self-execute and practical use for AI. It's now evolving faster than ever through numerous applications that improve the lives of individuals and streamline business operations. From your virtual assistants like Apple's Siri or Google's Home, to Netflix's movie suggestions for you, web support chat bots, or tracking the ETA of your Uber Eats, these systems help to answer your questions, field your requests, and make your life easier. Designed to learn more about you in order to make better, more accurate suggestions for you, these AI need to collect data from search histories, products purchased, or even overheard conversations, to discover your preferences. Considering bigger developments, autonomous vehicles (AVs) have been in development for a while. Operational AVs aren't as far away as you might think. Google, for example, is already working on an algorithm that allows an AI to learn to drive through experience—just as humans do. Autonomous vehicles are expected to bring about a number of benefits including fewer road accidents, more efficient fuel consumption, and reduced traffic congestion. Healthcare is also seeing numerous possibilities of integrating AI into existing systems. One impactful application of AI in healthcare involves connecting an AI with an amputees brain so that they're better able to communicate with and control the attached prosthesis. While the future applications of AI are anticipated to help make our lives easier and more efficient, there is caution among some of not only the reliance on this technology, but the number of jobs that will replace humans. Some of these are already integrated into everyday life, including self-serve checkouts, online support, and other roles that can adequately be handled at a much smaller cost using AI. However, not all see the growth of this industry as 'humans vs. AI', instead they see the integration of both to create a better us and a better world.

**2. Blockchain**

Blockchain is an application of distributed ledger technology that's taken the world by storm over the last few years. It's set to disrupt most industries worldwide. Blockchain was developed through its first

application, Bitcoin, as a way to disrupt the banking industry, in which ledgers are by definition highly centralized in a given bank or consortium of banks. Blockchain served the purpose of establishing a trustless economy through its cryptographic and decentralized components, rendering the need for third parties of traditional financial transactions useless. Blockchain's three key features:

• Decentralization

• Transparency

• Security

These three features aimed to make financial transactions more secure while reducing fees charged by greedy banks. The goal was to facilitate faster transactions that are free from control and the risks of a single point of authority. However, Blockchain technology has become much more than just a solution for financial services. The same features that are improving the deficits of the financial services industry have the potential to resolve the inefficiencies of many other industries. Not only has blockchain allowed us to digitize money, which isn't a new concept; we can now also place both physical and intangible assets such as copyrights, commodities, or land ownership rights on to the blockchain for secure proof of ownership and easier transferability. We're also seeing the redesign of supply chain management of food, retail, logistics, and construction industries, through transparent and immutable record keeping. Soon, a purchaser may be able to validate the quality and origin of the product they are buying. The implications for the healthcare industry are immense. Blockchain applications could help create a universal information system with easier, more compatible, and more secure access to records, research, and available therapies along with patients' data while minimizing administration time.

Smart contracts, an application of blockchain technology, are able to self-execute functions when certain conditions are met. This may remove the need for a lawyer or other intermediary who traditionally would facilitate 'trust' between parties. By eliminating the middleman, smart contracts could drive down costs in transactions. Blockchain is also enabling us to move from an **ownership economy to a shared economy**, in which we no longer need to own our own items but are able to share resources including cars, data storage, internet, solar energy and more. Although Blockchain is still in its infancy and requires further regulation, there's little doubt that this technology will continue to evolve, playing a significant role in transforming inefficient and outdated business practices and redistributing wealth and rights back to the people.

**3. Virtual/Augmented Reality**

The combined VR/AR market is expected to grow to 215 billion by 2021. These technologies are becoming increasingly popular within the entertainment industry. They're helping to blur the lines between physical and digital worlds. For the video game industry, significantly more interactivity has become possible through AR/VR. The huge success of Pokemon Go, which is perhaps one of the most widely-known AR applications, allows users to catch Pokemon on their mobile anywhere. Pokemon Go has

demonstrated that everyday people are willing and ready to use AR. Gaming companies are renting warehouses for interactive gaming, allowing players to fight against, for example, a Zombie apocalypse—all encapsulated within a VR headset. Tech giants are also developing VR/AR technologies to integrate into their own product offerings. For examples, confiser Apple's ARKit, Google's ARCore or VR Project Cardboard, Oculus' Rift, and PlayStationVR, just to name a few. A shift in the construction industry is also expected with the development of VR, AR, and MR (mixed reality), combining with existing software to help architects and 3D designers better understand and design their projects, showcasing them to their clients and shareholders in real time. Combining VR with software like BIM and big data practices will also enable construction to become more efficient through more accurate evaluations of the build by modeling behaviors.

**4. Internet of Things**

The internet of things (IoT) is an expansive network of "things" or devices that are connected to the internet, which facilitates their intercommunication. IoT is another technology that will help to bridge the gap between the physical and digital spheres. There were 17 billion connected devices in 2016 and the projection for 2020 spans anywhere from 28 to 100+ billion. The ability to connect devices to the internet is nothing new, but we're now connecting more "things" to the internet than ever before. Imagine your alarm going off in the morning and prompting your coffee maker to start brewing your morning cup before your selfdriving car drives you to a smart office environment in which your personal space is perfectly adapted to your needs. IoT will see new relationships develop between things and other things, things and people, and people and other people—all to make our lives easier, more efficient, and more effective. We already see this happening. For example, we can control smart thermostats from our phones so that the temperature is ideally suited to you when you enter your home. Future developments could see our cars connect with our calendars to navigate automatically to our destination along the optimal route, or our fridge ordering groceries when it detects a given food item is close to depletion. Of course, much of this is a long way off. It would require some of our existing infrastructure to be replaced. With a projected global worth of 6.2 trillion USD by 2025, we can expect most industries to be impacted by IoT, most notably the healthcare sector, which will see improvements in diagnoses, treatments, and predictive health monitoring.

**Our Digital Future**

While we can only predict what our future will look like, we can start to see that the possibilities are seemingly endless. And we are only beginning to see a small fraction of what may be to come. One thing of which we can be sure, however, is that these five technologies are going to change society as we know it. With so much of our lives expected to rely on emerging technologies, we must be aware of the vulnerabilities opened by so much of our data being stored in opaque, private enterprise databases on which non-transparent AI algorithms train. A digital, interconnected society poses a greater risk for a single hack to have drastic implications. There are many differing opinions on the future of technology and how it

will impact our lives. Some say it'll help drive us into the future, drive productivity, help us live longer, and increase efficiencies. Others see the emergence of these technologies as a destructive catalyst that'll fracture society as we know it. Although it's not a satisfying conclusion, reality rarely ends up on either side of a binary like good/bad. It's more likely that the these five most disruptive technologies will engender *both positive and negative* effects. It's up to us to shape the final outcome.

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## IOT connect with Machines

### INTRODUCTION

The Internet of things (IoT) describes the network of physical objects things that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet. This is a on demand future technology in every field of engineering. From huge companies to the small start-ups are looking up this technology and implementing in their work for good outcomes. People around World are more enthusiastic about developing this technology. Many Western countries like Europe, Philippines, Italy, Germany, America are implementing on their factories and making it to become more comfortable to use.

**Where this technology can be used?**

- Consumer applications
- Smart home
- Elder care
- Medical and healthcare
- Transportation
- V2X communications(vehicular communication systems,vehicle-to-everything)
- Building and home automation
- Industrial applications
- Manufacturing
- Agriculture
- Infrastructure applications
- Metropolitan scale deployments

This technology can be implemented in every field **from health industry to the infrastructure, from constructions to the smart Homes,** we can control everything with our finger tips and check their status and real-time data.

**What we need to learn to become a expert in IoT ?**

Here are six tips from IoT experts on how to break into a career developing connected devices.

**1. Gain a deep understanding of sensors:**

It's recommended that IoT developers have a background in computer science or electrical engineering,

Panetta said. However, IEEE and other professional organizations offer online courses on sensors and development in which you can make a project to show employers. And a number of inexpensive sensors and maker kits are available to practice skills on your own.

**2. Focus on user interface:**

When developing a commercial IoT product, it's important to hold yourself to high quality standards for user experiences, said Kit Klein, head of engineering at Wink. "Many customers depend on these products for critical tasks in their daily lives and are understandably intolerant of failures," Klein said. "As an industry, we need to ensure products delight a rapidly growing base of users who aren't necessarily tech savvy. Quality and reliability are paramount to this experience and need to be part of any developer's mentality."

**3. Learn JavaScript or Python:**

Working with new technology often means being motivated to work without documentation, code samples, or guidance other than the scant information provided by hardware manufacturers, said Rob Lauer, senior manager of developer relations at Progress. IoT developers tend to use common languages, including Python and JavaScript, with some Windows IoT-compatible devices using C#/.NET

**4. Play with a Raspberry Pi:**

without a computer science or electrical engineering degree, Elliot Schrock, founder and lead developer at Thryv, Inc., suggests demonstrating your aptitude to employers by completing projects on a Raspberry Pi."Raspberry Pis are very inexpensive, tiny computers, and are often employed in proof of concept IoT projects".

**5. Find a community:**

Involvement in the surrounding communities of makers, inventors, and entrepreneurs with whom one can explore, develop, and refine their ideas into a reality is an important factor for becoming an IoT developer, said Emily Rose, lead developer evangelist at Salesforce. "This may seem like a daunting prospect, but it can also be a tremendous advantage to those with an eye for exploration beyond the bounds of convention."

**6. Keep your skills cutting edge:**

Learning one platform or skillset isn't enough, according to IBM research scientist and master inventor Eli Dow. "The platform you write for this week will often be obsolete within 6 months to a year," Dow said. "Sensors will change, single board computers or other embedded platforms will continue to evolve, and you have to have the flexibility to adapt as platforms change at a blistering pace."

**What are the job opportunities in the future?**

Despite, of the fear of piracy and cyber attack the internet of things and IoT applications will grow much more faster in the coming years. Ultimately we can say the IoT future scope or the future of IoT is very bright. There will a lot of IoT devices which will be coming shortly.

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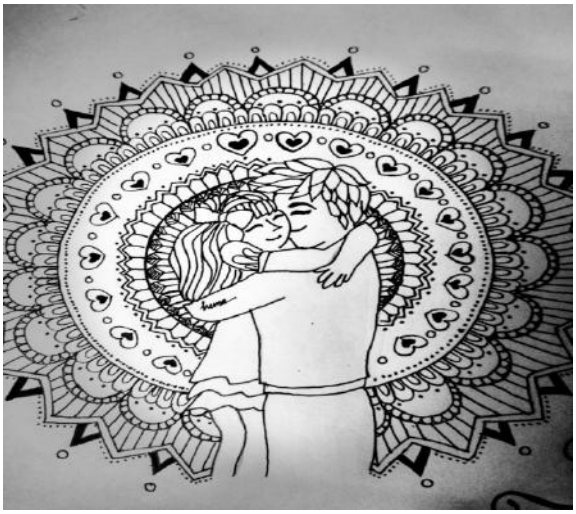
# PENCIL ART



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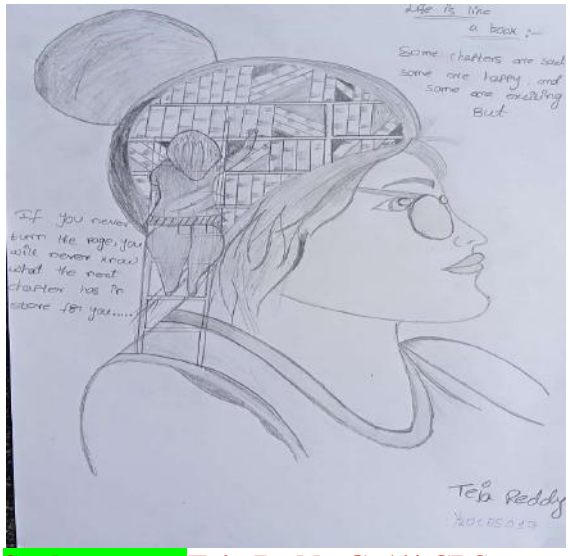


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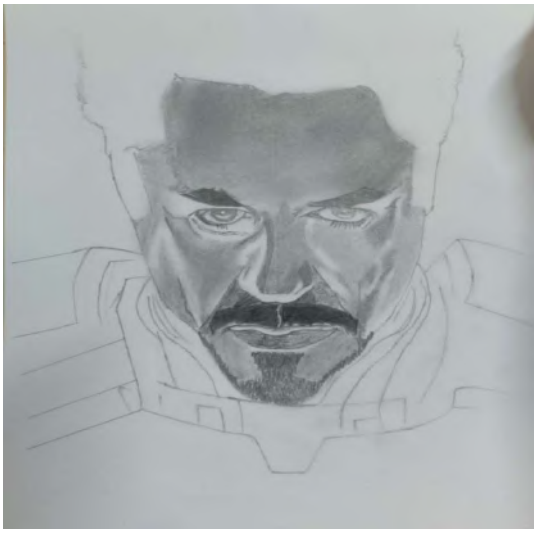

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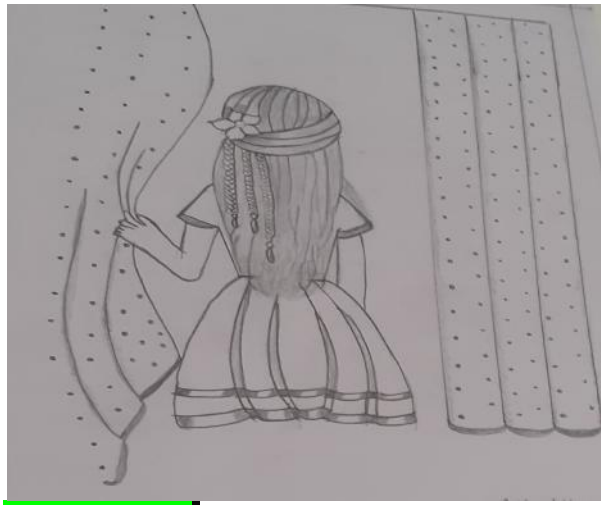

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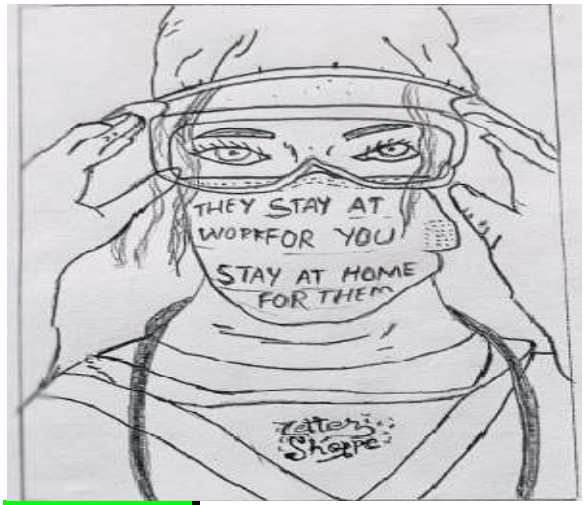


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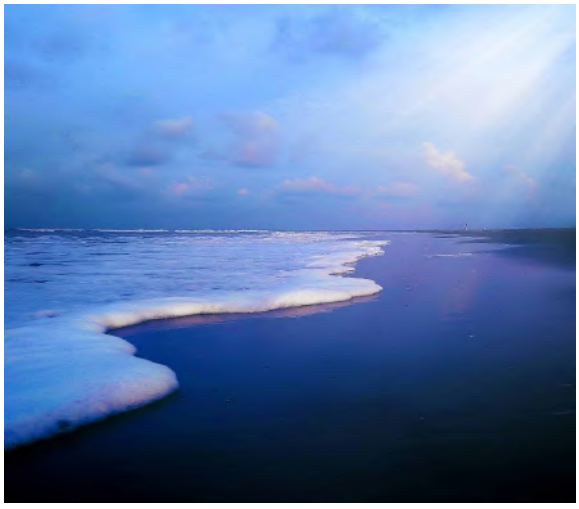

# Quotations

“ I think that I shall never see a poem as lovely as a tree.”

“Anyone who thinks fallen leaves are dead has never watched them dancing on a windy day.”

“For in the true nature of things, if we rightly consider, every green tree is far more glorious than if it were made of gold and silver.”

**Student Name: V.Priya Durga, 2 C**

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"Anger comes alone but takes all the valuable things and go away”

"All the situation in our life comes to make one beautiful memory"

"Time is very valuable don’t waste it"

**Student Name: L.Asritha Kousalya, 2 B**

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“Science is about Knowing, Engineering is about doing.”

“ Never whine never complain never try to justify yourself ”

“Weak people Revenge. Strong people Forgive. Intelligent people Ignore”

**Faculty Name: Smt.k.Tejaswini**

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