

NBA Accredited B.Tech Courses: CE | ME | ECE Accredited By NAAC

Contrast of

DHANEKULA

IGNITUREOFE



DHANEKULA INSTITUTE OF ENGINEERING & TECHNOLOGY (Approved by AICTE, Affiliated to JNTU, Kakinada)

-Building the Future for B. Tech CE | EEE | ME | ECE

NATIONAL BOARD

ISO 9001 CERTIFIED

Accredited

# Institute Vision

Pioneering Professional Education through Quality.

# **Institute Mission**

- 1. Quality Education through state-of-art infrastructure, laboratories and committed staff.
- 2. Moulding Students as proficient, competent, and socially responsible engineering personnel with ingenious intellect
- 3. Involving faculty members and students in research and development works

for betterment of society

**Dhanekula Institute of Engineering and Technology** established in the year 2009 at Ganguru, Vijayawada, Krishna (Dist) is the first of its kind educational institution founded by Sri.DhanekulaRavindranadh Tagore, a living legend who is famous for his versatility and excellence in promoting various agricultural and industrial organizations and known for his love and affection towards the man kind - improving their standard of living with his meticulous, measured efforts. There is no doubt in saying that in future this institution would be the touch-stone of technical expertise in and around the third worldcountries.

With its global standards it aims at cultivating a learner centered teaching environment imparting engineering education. Education is inseparable from the real life. The purpose of Education is to equip the student with an all-round development in solving the real life situations. We strive to promote rich academic environment with a special focus on innovative methodologies in teaching by giving an exposure to the cutting edge competence to the students in meeting the future employment challenges.

Affiliated to JNTUK, Kakinada and is approved by AICTE, New Delhi, it aims at providing a sound technical knowledge and broad vision to the technocrats of future - as they are prepared for a successful tomorrow. The institution will endeavor to fabricate accomplished and capable engineers proficient enough to face the dynamic changes of the present century. Qualified, experienced and dedicated staff who remain update with latest developments in their fields is an additional asset to the college. Founded in the year 2009, this institution started with B.Tech courses. The institution has been developed with the primary objectivesto

- Produce proficient, qualified and socially responsible engineering personnel required to face the challenges of the country in the 21stcentury.
- Provide an opportunity to the average citizen of India willing to acquire engineering education in different fields at an affordablecost.
- To cultivate skill based learning competing with the national and international institutions like IIT's, IIIT's andNIT's
- Launch different programs in order to integrate educational and developmentalactivities.
- Serve as a sustained center imparting engineering education so as to update and upgrade the existing engineeringskills.

#### Administration



In recent years, a good deal of anxious attention has been paid, all over the world to the utter significance and direct influence of science and technology on our modern life style. Twentieth century is indeed identified as the age of science and Technology. Moreover, the progress of any country in the contemporary world depends entirely or solely upon the improvement made by it in the field of technology. In this context, engineering education plays a meaniningful and substantial character and its role can not be excluded. We at 'Dhanekula' strive to provide you the best infrastructure and faculty with the sole aim of ushering excellence in engineering education.

I firmly believe that any technology is successful only when it is diffused through society-uplifting the world economy raising the percapita income of its people. Thus bringing the world class technology home is the ultimate aim of this institution fostering over all development of the students-moulding them into proficient, qualified and socially responsible engineering personnel.

#### Dhanekula Ravindranath Tagore Chairman



Twenty first century is indeed identified as the age of science and technology and the progress of the country depends entirely or solely upon the improvement made by it in the field of technology. In this context, I strongly hope that this institution with its quality conscious definitely plays a meaningful role in making the students ready for the latest Industrial requirements.

#### Dhanekula Bhavani Prasad Secretary



Dhanekula Institute of Engineering & Technology, the world class campus offers quality of education for its students to enhance their employability skills and Innovation among the students by inspiring fresh perceptiveness, creative thinking and firm conviction to achieve true success. With an aim to build future for the youth, the college aims to nurture budding talents in the field of engineering and

technology as per industry needs. DIET believes in giving a complete education by concentrating on all the aspects of professional building and we have been continuously in the thought process of improving the quality of teaching by implementing various activities like seminars by eminent personalities ,language development, training in soft skills, communication skills, insisting on student discipline, and enthusing the students by encouraging them to participate in extra curricular activities like sports NSS,NCC apart from their academics. Dhanekula Institute of Engineering & Technology, this institute has been in the process of continuously training the entire faculty to maintain high standards of classroom delivery. Faculty Efforts are also in place for improving the student skills by offering some skill oriented courses for the students. We at DIET believe that honesty, hard work, and discipline together form the ladder for success and try to inculcate these habits in our students.

#### Dr. Ravi Kadiyala Principal, DIET

# **Computer Science and Engineering**

**Department Vision:** To empower students of Computer Science and Engineering Department to be technologically adept, innovative, global citizens possessing human values.

#### **Department Mission:**

To Encourage students to become self-motivated and problem solving individual To prepare students for professional career with academic excellence and leadership skills. To Empower the rural youth with computer education. To Create Centre's of excellence in Computer Science and Engineer

#### **Program Educational Objectives**(PEOs):

**PEO1:**Excel in Professional career through knowledge in mathematics and engineering principles.

**PEO2:**Able to pursue higher education and research.

**PEO3:**Communicate effectively, recognize, and incorporate societal needs in their professional endeavors. **PEO4:** Adapt to technological advancements by continuous learning.

## Message From HOD



"It is a pleasure to be the head of the department of CSE. The department offers B-Tech (CSE) and M-Tech (CSE). The department has a team of highly experienced and motivated faculty members who are in process of tuning the young minds to make them globally competitive. The department is equipped with state-of- the-art laboratories where students can enhance their knowledge and skill. The strength of the department is highly motivated students who understand the dynamics of the industry and upgrade their skills accordingly. The scope of computer science is endless. The students of the computer science and engineering are highly demanded by the recruiters of the top companies. Depending upon the interest of the student, he/she may choose to go for higher studies or if employed can choose to do research, development, design, production, application, testing or management in the Information Technology industry. In our department we not only give emphasis on study but also apply our knowledge in understanding what computers are, how to efficiently program them, different tools and technologies, the interface between the computer and the user, the computer graphics, computer networking, managing the database, software engineering and testing them efficiently and more. Through innovative teaching-learning process a teamwork approach and leadership building experience, our students gain vital communication and critical-thinking skills. Our institution provides a platform for the students to enhance their employability skills through Industry Institute Collaboration."

I, Congratulate the team of faculty members and the students for their brilliant and original efforts. I wish all the Students and Faculty a great academic career.

### **CONTENTS**

STUDENT ACHEVIEMENTS .....

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STAFF CORNER.....

### Students Achivements

It is proudly say that our Students were encouraged to do various MOOCS courses like NPTEL .A good number of students have qualified and got good scores. head of the department and principal has appreciated the students who got qualified in nptel

| Sl.No | Roll.No    | Student Name                     | Year<br>&<br>Sem | Section | Course Name                               |
|-------|------------|----------------------------------|------------------|---------|---|
| 1     | 178T1A0501 | ADUSUMALLI<br>SWATHI             | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 2     | 178T1A0507 | BHOGADULA<br>LAKSHMI<br>SOWJANYA | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 3     | 178T1A0508 | BODA NAGA SAI<br>PRAVEEN         | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 4     | 178T1A0515 | DAMIREDDY<br>LAKSHMI RAGHAVI     | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 5     | 178T1A0517 | DASARI ANVITA                    | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 6     | 178T1A0518 | DEVINENI KAVYA<br>PREETHI        | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 7     | 178T1A0524 | GANDHAM<br>ALEKHYA               | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 8     | 178T1A0527 | GULIPALLI<br>PRADEEP KUMAR       | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 9     | 178T1A0528 | GUNTAKA KEERTHI<br>POORNA        | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 10    | 178T1A0530 | J HEMANTH<br>KUMARA SWAMY        | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 11    | 178T1A0532 | KANDRU SAMPATH                   | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 12    | 178T1A0533 | KARUKONDA ASHA                   | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 13    | 178T1A0539 | KOLLIPARA<br>LAKSHMI LAHARI      | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 14    | 178T1A0540 | KOLLU YASWANTH<br>KUMAR          | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 15    | 178T1A0543 | KOTHA RAJA<br>SEKHAR             | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 16    | 178T1A0544 | KOTHARU GOPI<br>MANI SRI         | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 17    | 178T1A0545 | KUMMARI SHIVA<br>KUMAR           | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 18    | 178T1A0546 | KUNAPARAJU<br>DHANUNJAY RAJU     | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 19    | 178T1A0547 | MADDASANI DAYA<br>RANI           | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |
| 20    | 178T1A0550 | MANDAVA<br>DEEKSHA               | III-II           | А       | JOY OF COMPUTING USING<br>PYTHON NOV 2019 |

| 21 | 178T1A0555 | MARTHI CHANDINI<br>SAI MEGHANA  | III-II | А | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
|----|------------|---------------------------------|--------|---|--|
| 22 | 178T1A0556 | MATHANGI<br>MOHANTHY<br>RAJVEER | III-II | А | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 23 | 178T1A0559 | MULASA MANI<br>VENKATA SAI      | III-II | А | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 24 | 178T1A0563 | KUMMARI<br>NAVEEN               | III-II | В | PRACTICAL MACHINE<br>LEARNING WITH<br>TENSORFLOW |
| 25 | 178T1A0570 | MUSUNURU<br>SIRILAKSHMI         | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 26 | 178T1A0573 | NALLAGATLA<br>MANASWI           | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 27 | 178T1A0575 | NANDIGAM<br>NEELIMA             | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 28 | 178T1A0576 | NASIKA<br>CHINMAYEE             | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 29 | 178T1A0577 | NUKALA<br>LALITHA               | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 30 | 178T1A0579 | PALASA<br>MAHESWARI             | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 31 | 178T1A0581 | PALLOTHU SAI<br>SRAVYA          | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 32 | 178T1A0583 | PASULA<br>JAHNAVI               | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 33 | 178T1A0584 | PATHAN<br>AJIMUNNISA            | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 34 | 178T1A0585 | PAVULURI<br>RUSHITHA SRI        | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 35 | 178T1A0588 | PERAM<br>JAYAHLADINI            | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 36 | 178T1A0590 | POTHARLANKA<br>LAHARIKA         | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 37 | 178T1A0592 | PUTCHAKAYAL<br>A LINEESHA       | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 38 | 178T1A0594 | REPANI<br>PRASANNA              | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 39 | 178T1A0595 | SANKA<br>ALEKHYA                | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 40 | 178T1A0596 | SHAIK IMRAN                     | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |
| 41 | 178T1A0598 | SHAIK<br>THASLIMA               | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019        |

| 42 | 178T1A05A      | SUNKARA                              | III-II | В | JOY OF COMPUTING USING                          |
|----|----------------|--------------------------------------|--------|---|---|
|    | 1              | SRAVYA                               |        |   | PYTHON NOV 2019                                 |
| 43 | 178T1A05A<br>2 | SURAPANENI<br>SAI PRIYANKA           | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 44 | 178T1A05A<br>3 | SYKAM BHANU<br>SRI                   | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 45 | 178T1A05A<br>4 | TALAGADADEE<br>VI DINESH             | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 46 | 178T1A05A<br>7 | THOTAKURA<br>VENKATA SAI<br>NIHARIKA | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 47 | 178T1A05B0     | UPPALURI<br>YASASWINI                | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 48 | 178T1A05B1     | VINUTHNA<br>VADLANI                  | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 49 | 178T1A05B2     | VAJJAPARTHI<br>LAVANYA               | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 50 | 178T1A05B3     | VANKADARU<br>KUSUMA<br>PRIYANKA      | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 51 | 178T1A05B4     | VARRE<br>SUSHMA                      | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 52 | 188T5A0503     | POTNURI<br>YAMINIDEVI                | III-II | В | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |
| 53 | 168T1A05A<br>0 | ADARSH<br>SIDDABATTUL<br>A           | IV-II  | В | PROGRAMMING IN C++ NOV 2019                     |
| 54 | 188T1A0506     | BADE NAVYA                           | II-II  | А | INTRODUCTION TO<br>PROGRAMMING IN C NOV<br>2019 |
| 55 | 188T1A0559     | Y GOPI SAI<br>KRISHNA                | II-II  | А | JOY OF COMPUTING USING<br>PYTHON NOV 2019       |



Academic toppers list



Most of the students were actively participated in the learning activities and in doing assignments. Faculty and students also participated and completed in various MOOCS courses like COURSERA, SPOKEN TUTORIAL, NPTEL, 360DigiTmg, APSSDC, TCSION, CISCO, ACCENTURE, UDEMY, INTERNSHALA, etc and received certificates during the lockdown period.

| Title  | II/IV | III/IV | IV/IV |
|--|-------|--------|-------|
| Total No.of<br>certification<br>courses done | 262   | 230    | 154   |

Some sample certificates of Final Year, Third year, Second year



# **STUDENT PLACEMENTS:**





Infosys Navigate your next







| Sl.No | Roll.No    | Student Name     | Company Name                                |
|-------|------------|------------------|---|
| 1     | 168T1A0569 | Md.Inamullah     | Cognizant/TCS                               |
| 2     | 168T1A0583 | P.Swathi         | NTT-Data/Phytec                             |
| 3     | 168T1A0565 | M.Bhavani        | TCS/Shell-Pro                               |
| 4     | 168T1A0586 | P.Roshini        | Shell-Pro/ Phytec                           |
| 5     | 168T1A0590 | P.Namratha       | Shell-Pro/ Phytec                           |
| 6     | 168T1A0588 | P.Harshini       | Shell-Pro/Talentio                          |
| 7     | 168T1A0582 | P.Sumanth        | Wipro/Snovasys                              |
| 8     | 168T1A0568 | Md.Ayesha        | Phytec                                      |
| 9     | 168T1A0584 | P.Ravi Kumar     | Phytec                                      |
| 10    | 168T1A0504 | A. Sai Narmada   | Phytec                                      |
| 11    | 168T1A0508 | B. Siri Krishna  | Phytec                                      |
| 12    | 168T1A0527 | E.Jasmine        | Phytec                                      |
| 13    | 168T1A0541 | K.Ramya Deepthi  | Phytec                                      |
| 14    | 168T1A0542 | K.Sai Sri        | Phytec                                      |
| 15    | 168T1A0553 | K.Krishna Tulasi | Phytec/ Optum Global Solutions<br>(pvtlmtd) |
| 16    | 168T1A0557 | L.Ishwarya       | Phytec                                      |
| 17    | 168T1A0561 | Md.Rehana        | TCS/Wipro/Infosys                           |
| 18    | 168T1A0589 | P.Chandana       | TCS   |
| 19    | 168T1A05A6 | U.Bhavani        | TCS   |
| 20    | 168T1A0560 | M.Easwar         | TCS   |
| 21    | 168T1A0528 | G.Brahma Reddy   | TCS/Wipro/Infosys                           |
| 22    | 168T1A0536 | G.Himaja         | TCS   |
| 23    | 168T1A05B0 | V.Yamuna         | TCS/Wipro                                   |
| 24    | 168T1A0566 | M.Venkatswarlu   | Wipro                                       |
| 25    | 168T1A0501 | A.Jahnavi        | Wipro/Infosys                               |
| 26    | 168T1A0521 | Ch.Reshma        | Wipro                                       |
| 27    | 168T1A0553 | K.Krishna Tulasi | Wipro                                       |
| 28    | 168T1A0577 | N.Hema girija    | Infosys                                     |
| 29    | 168T1A0554 | K.Aakanksha      | Infosys                                     |
| 30    | 168T1A0534 | G.Niharika       | Shell-Pro                                   |
| 31    | 168T1A0502 | A.SivaRam        | Shell-Pro                                   |
| 32    | 168T1A0513 | B.Likitha        | Shell-Pro                                   |
| 33    | 168T1A0535 | G.Kunda Priya    | Shell-Pro                                   |
| 34    | 168T1A0536 | G.Himaja         | Shell-Pro                                   |
| 35    | 168T1A0544 | K.Mohini Swetha  | Shell-Pro                                   |
| 36    | 168T1A0556 | K.Chaitanya sai  | Shell-Pro                                   |

# Students participation:

#### List of Students participation in Co curricular/ Technical events:

| S.No | Academic<br>Year | Name Of Event                         | Date Of<br>Event         | Name<br>Of            | Venue                                    | Award         |
|------|------------------|---------------------------------------|--------------------------|-----------------------|--|---------------|
|      |                  |                                       |                          | Student               |  |               |
| 1.   |                  | Paper Stagging                        | 19/02/2020               | K.Venu<br>Madhavi     | V.R<br>Siddhartha                        | Participation |
| 2.   | 2019-20          |                                       | 20/02/2020               | V.<br>Swathi          | Engineering<br>College,                  | Participation |
| 3.   |                  | Codeathon                             | 19/02/2020<br>20/02/2020 | J. Sindhura           | vijayawada                               | Participation |
| 4.   |                  |                                       |                          | J.Kavya               |  | Participation |
| 5.   |                  | Technical Quiz                        | 03/01/2020               | P. Siva Puja          | Usha Rama<br>College Of<br>Engineering & | Participation |
| 6.   |                  |                                       | 03/01/2020               | Y.Gopi Sri<br>Krishna | Technology,                              | Participation |
| 7.   |                  | Workshop on<br>Explore ML             | 21/02/2020               | P. Siva Puja          | Online                                   | Participation |
| 8.   |                  | Workshop on<br>Amazon Web<br>services | 22/02/2020<br>23/02/2020 | Ch. Tanami            | JNTU<br>Kakinada                         | Participation |
| 9.   |                  |                                       | 27/01/2020<br>28/01/2020 | Ritikaa<br>Tiwari     |  | Participation |
| 10.  |                  | Tech Bloom<br>2020                    | 27/01/2020<br>28/01/2020 | M. Bhargavi           |  | Participation |
| 11.  |                  |                                       | 27/01/2020<br>28/01/2020 | P. Siva Puja          |  | Participation |
| 12.  |                  |                                       | 27/01/2020<br>28/01/2020 | J.Hemanth             | V.R<br>Siddhartha                        | Participation |
| 13.  |                  |                                       | 27/01/2020<br>28/01/2020 | K.Rajasekhar          | Engineering<br>College,                  | Participation |
| 14.  |                  |                                       | 27/01/2020<br>28/01/2020 | K.Dhanunjay           | v ijayawada.                             | Participation |
| 15.  |                  |                                       | 27/01/2020<br>28/01/2020 | K.Siva<br>Kumar       |  | Participation |
| 16.  |                  | Workshop on<br>Ethical Hacking        | 31/01/2020<br>01/02/2020 | Md. Afreen<br>Fathima | K L<br>University                        | Participation |
| 17.  |                  | & Cyber<br>security                   |                          | D. Geethika           |  | Participation |
|      |                  | (Level-1)                             | 22/02/2020               |                       |  |               |
| 18.  |                  | National Level                        | 23/02/2020               | L. Yuvaraj            | Supraja                                  | Participation |

| 19. | Ethical Hacking<br>& Cyber      | K. Geetaradha                     | Technologies,<br>Vijayawada | Participation     |
|-----|---------------------------------|-----------------------------------|-----------------------------|-------------------|
| 20. | Security (Level-<br>1) Workshop | D. Jai<br>Surendra                |                             | Participatio<br>n |
| 21. |                                 | K. Avinash                        |                             | Participation     |
| 22. |                                 | L. Vamsi<br>Krishna               |                             | Participation     |
| 23. |                                 | Sanka J<br>Pradeesh               |                             | Participation     |
| 24. |                                 | G. Raj<br>kumar                   |                             | Participation     |
| 25. |                                 | Shaik.Thaslim<br>a                |                             | Participation     |
| 26. |                                 | P. Rushita Sri                    |                             | Participation     |
| 27. |                                 | K. Jayanth Sai                    |                             | Participation     |
| 28. |                                 | P.<br>Rohith                      |                             | Participation     |
| 29. |                                 | K. Bhargavi                       |                             | Participation     |
| 30. |                                 | A. Komali<br>Radha Sri<br>Mounika |                             | Participation     |
| 31. |                                 | V. Sindhu                         |                             | Participation     |
| 32. |                                 | S. Anusha                         |                             | Participation     |
| 33. |                                 | G. Ramya Sri                      |                             | Participation     |
| 34. |                                 | K. Bhavya                         |                             | Participation     |
| 35. |                                 | K. Vennela                        |                             | Participation     |
| 36. |                                 | K. Swetha                         |                             | Participation     |
| 37. |                                 | V. Saranya                        |                             | Participation     |
| 38. |                                 | M. Divya Sri                      |                             | Participation     |
| 39. |                                 | D. Kiranmayi                      |                             | Participation     |
| 40. |                                 | S. Babitha                        |                             | Participation     |
| 41. |                                 | S.Sree Durga<br>Sucharitha        |                             | Participation     |

| 42. |   |   | V. Sri Bhavana      | Participation |
|-----|---|---|---------------------|---------------|
| 43. |   | - | Sumayya<br>Kowsar   | Participation |
| 44. |   | - | Sk. Alkasha         | Participation |
| 45. | • | - | Y. Jyothsna         | Participation |
| 46. |   | - | V. Ramya            | Participation |
| 47. |   | - | R. Vasanthi         | Participation |
| 48. |   | - | P. Naga<br>Sandhya  | Participation |
| 49. |   |   | G. Harsha Sree      | Participation |
| 50. |   | - | D. Krishna<br>Priya | Participation |

### STUDENT PUBLICATIONS SECTION-A

| Batch | Roll. No   | Student Name      | Title of the paper                          |  |
|-------|------------|-------------------|---|--|
|       | 168T1A0501 | A.Jahnavi         |   |  |
|       | 168T1A0557 | L. Ishwarya       |   |  |
| 1     | 168T1A0540 | K. Ayesha         | Resume Ranking Based on Job Description     |  |
|       | 168T1A0530 | G. Bhanu Sekhar   | sing Spacy NER model.                       |  |
|       | 168T1A0550 | K. Hanisha        |   |  |
|       | 168T1A0536 | G. Himaja         |   |  |
|       | 168T1A0520 | Ch. Abhigna       | Automated Essay Grading System using        |  |
| 2     | 168T1A0549 | K. Saroja         | Deep Learning                               |  |
|       | 168T1A0551 | K. Nikhil         |   |  |
|       | 168T1A0560 | M.EswarKrishna    |   |  |
| 2     | 168T1A0524 | D. Deepika        |   |  |
| 3     | 168T1A0505 | A.Divya           | Automatic ranway crossing system using I    |  |
|       | 168T1A0552 | K. Bhargav        |   |  |
|       | 168T1A0528 | G.Brahma Reddy    |   |  |
|       | 168T1A0556 | K.Chaitanya Sai   |   |  |
| 4     | 168T1A0522 | Ch.Sowmya Lalitha | Smart IOT device for women safety           |  |
|       | 168T1A0508 | B.Siri Krishna    | · · · · · · · · · · · · · · · · · · ·       |  |
|       | 158T1A05C1 | A.Prashanth Sai   |   |  |
|       | 168T1A0534 | G. Niharika       |   |  |
| 5     | 168T1A0518 | Ch. Vyshnavi      | Gender and Age Prediction using Wideresnet  |  |
| 5     | 168T1A0514 | B.Jagadeesh       | Architectutre.                              |  |
|       | 168T1A0512 | B. Umanath        |   |  |
|       | 168T1A0507 | A. Hema Bindu     |   |  |
| 6     | 168T1A0555 | K. Sudheshna      | Dest Shrinking Alert system using IOT       |  |
| 0     | 168T1A0519 | Ch. Monish Sai    | Boat Shrinking Alert system using 101.      |  |
|       | 168T1A0538 | G. Sai Raja       |   |  |
| 7     | 168T1A0526 | D. Pooja Sri      | IOT based Anti-Theft Detection and altering |  |
| /     | 168T1A0532 | G. Raja Sekhar    | system using raspberry pi                   |  |

|    | 168T1A0545 | N. Gayathri              |  |  |
|----|------------|--------------------------|--|--|
|    | 168T1A0543 | K. Heshma                |  |  |
|    | 168T1A0546 | K. Devika                |  |  |
| 0  | 168T1A0553 | K.KrishnaTulasi          | IOT based LPC Cas Laskage Detection          |  |
| 0  | 168T1A0533 | G. Ramya                 | 101 based LFG Gas Leakage Detection          |  |
|    | 168T1A0517 | Ch.Vijay Kumar           |  |  |
|    | 168T1A0523 | D.Lavanya                |  |  |
| 0  | 168T1A0513 | B.Likitha                | Classification of Fruits and vegetables with |  |
| 9  | 168T1A0502 | A.Siva Ram               | its Nutrients                                |  |
|    | 168T1A0515 | Ch.Yesu Narayana         |  |  |
|    | 168T1A0544 | K.Mohini Swetha          |  |  |
| 10 | 168T1A0503 | A.Roshini                | Bus Indication for blind people using RFID   |  |
| 10 | 168T1A0547 | K. Pravallika            | and raspberry pi                             |  |
|    | 168T1A0541 | K.Ramya Deepthi          |  |  |
|    | 168T1A0558 | M. Anusha                |  |  |
| 11 | 168T1A0548 | K. Sonika                | Hostile to Rigging Voting System using       |  |
| 11 | 168T1A0511 | B.T.R Aditya             | Fingerprint                                  |  |
|    | 168T1A0527 | E.Jasmine                |  |  |
|    | 168T1A0521 | Ch. Reshma               |  |  |
| 12 | 168T1A0535 | G.Kundana Priya          | Sentiment Analysis of Food Recipe            |  |
| 12 | 168T1A0510 | B.Sravani                | Comments                                     |  |
|    | 168T1A0559 | M. Spandana              |  |  |
|    | 168T1A0542 | K. Rajya Guru Sai<br>Sri |  |  |
| 13 | 168T1A0554 | K. Aakanksha             | Smart Irrigation and draining System using   |  |
|    | 168T1A0509 | B.Simhadri               |  |  |
|    | 168T1A0504 | A.Sai Narmada            |  |  |

### **SECTION-B**

| BATCH | Roll. No   | Student Name       | Title Of the Paper                         |  |
|-------|------------|--------------------|--|--|
|       | 168T1A0561 | MAHAMMED<br>REHANA | Smart Bus Transportation with              |  |
| 1     | 168T1A0580 | P G LAKSHMI        | Automatic Drivers Heart Failure            |  |
|       | 168T1A05A8 | V RANI SAMYUKTHA   | Detection System.                          |  |
|       | 168T1A0598 | SHAIK JILANI BEGUM |  |  |
| 2     | 168T1A05A0 | S ADARSH           | accident avoidance alerting system         |  |
|       | 168T1A05A6 | U LAKSHMI BHAVANI  | accident avoidance alerting system         |  |
| 3     | 168T1A0574 | N SAI SIRI         | Health care analysis and monitoring system |  |
|       | 168T1A0578 | N VIJAYA LAKSHMI   |  |  |
|       | 168T1A05B8 | Y JYOTHSNA PRIYA   | System                                     |  |
| 4     | 168T1A0582 | P SUMANTH          | College Administrative System              |  |
| т<br> | 168T1A0569 | M INAMULLAH        |  |  |
|       | 168T1A05B0 | V YAMUNA SAI       |  |  |
| 5     | 168T1A0585 | P SAI PUJITHA      | Smart Traffic Management System            |  |
| 5     | 168T1A0566 | M VENKATESWARLU    | Sinart Tranic Management System            |  |
|       | 168T1A05A2 | T PARDHU           |  |  |
|       | 168T1A0588 | P SRI HARSHINI     |  |  |
| 6     | 168T1A05C0 | Y VYSHNAVI         | Automatic Roofing System for cricket       |  |
| 0     | 168T1A0564 | M YASASWINI SRI    | stadiums.                                  |  |
|       | 168T1A0567 | M AVAN KRISHNA     |  |  |

|    | 168T1A0593 | RAVI RUKVITHA   |                                      |  |  |
|----|------------|-----------------|--------------------------------------|--|--|
| 7  | 168T1A0590 | P MARY NAMRATHA | IOT based Intelligent Traffic        |  |  |
| /  | 168T1A0584 | P S RAVI KUMAR  | Management System                    |  |  |
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|    | 168T1A0573 | M SRI VYSHNAVI  |                                      |  |  |
|    | 168T1A05B2 | V BHARGAVI      | Automatic Attendance Provision using |  |  |
| 8  |            | S V NARENDRA    | Image Processing                     |  |  |
|    | 168T1A05A1 | REDDY           |                                      |  |  |
|    | 168T1A05A7 | VSAI JAHNAVI    |                                      |  |  |
|    | 168T1A0586 | P L S S ROSHINI |                                      |  |  |
| 9  | 168T1A05B9 | Y SIVA RESHMA   | Wireless digital notice board.       |  |  |
|    | 168T1A0596 | P SAI TEJA      |                                      |  |  |
|    | 168T1A05B6 | Y CHAKRADHAR    |                                      |  |  |
|    | 168T1A0591 | R PRATYUSHA     |                                      |  |  |
| 10 | 168T1A0583 | P SWATHI        | College Enquiry Chat Bot             |  |  |
| 10 | 168T1A0587 | P RISHI KRISHNA | Conege Enquiry Chat Bot.             |  |  |
|    | 168T1A05B4 | V SAI PRADEEP   |                                      |  |  |
|    | 168T1A0581 | P PRAMEELA      | Smart Pillbox                        |  |  |
| 11 | 168T1A0563 | M SAI SUDHA     |                                      |  |  |
| 11 | 168T1A0597 | S RAMA KRISHNA  |                                      |  |  |
|    | 168T1A05B3 | V THARUN KUMAR  |                                      |  |  |
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| 12 | 168T1A0568 | M AYESHA BEGUM  | Step lock system in bus using IOT    |  |  |
| 12 | 168T1A0571 | MORLA GOWTHAMI  |                                      |  |  |
|    | 168T1A05B7 | Y JAHNAVI       |                                      |  |  |
|    | 168T1A0570 | M FIRDOSE       |                                      |  |  |
| 12 | 168T1A0572 | M BHARGAV       | Classification and Prediction for    |  |  |
| 15 | 168T1A0594 | R ARAVIND       | emergency department                 |  |  |
|    | 168T1A0577 | N HEMA GIRIJA   | emergeney asparanenti                |  |  |
|    | 168T1A0599 | SHAIK NAZNEEN   |                                      |  |  |
| 14 | 168T1A0565 | M DDBHAVANI     | An IOT Based Automated Toll          |  |  |
| 14 | 168T1A05B5 | V TEJASWI       | Collection System Using RFID         |  |  |
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| 15 | 168T1A0589 | CHANDANA        | Data Security in cloud computing     |  |  |
|    | 1687140540 |                 | through AES under DRIVEHQ.           |  |  |
|    | 168T1A05A9 | T SANDEEP KUMAR |                                      |  |  |
|    | 10811A05A3 |                 |                                      |  |  |

# STUDENTS ARTICLES VISUAL SEARCH

Visual search is an emerging development in the world of artificial intelligence (AI) and machine learning (ML) which has the potential to revolutionize how consumers find and buy products. By streamlining how we search, companies can move closer to the instant gratification that many consumers demand.<u>62%</u> of Millennial desire the ability to visually search over any other new technology, and the likes of Google, Amazon, Pinterest and Bing have already developed significant capabilities in this area.



The human brain is extremely visual - it can identify images within <u>13 seconds</u> and 90% of all information received by the brain is visual. Given this, visual search is a natural evolution in enhancing how technology works best for us - however a human brain is very different from AI. When we look at a picture, we don't see a set of points and dotted lines. Instead, we can identify patterns and shapes immediately. The theory behind visual search is to teach machines to do the same.

When presented with an image, visual search identifies objects within it, and then searches for images related to those objects. Current technology can identify multiple shapes and outlines contained within a single image to allow users to match to different objects.



Visual search engines rely on neural networks which utilize machine learning technology, so the systems are constantly learning and expanding their field of experience. Companies with a lot of information – such as Google – benefit most, as their visual search application (<u>Google Lens</u>) has an enormous amount of data from which to improve its search functionality. Because of this, Google Lens can not only identify objects in an image, but also match them to local retailers, provide customers reviews, and sort listings



K. Lakshmi Tulasi 188T1A0527.

II-CSE-A

# **3D GAMING**

3D gaming is interactive computer entertainment that is graphically presented in the three dimensions of height, width and depth; the addition of depth to 2D gaming enabled the exploration of virtual worlds with more realistic representation. The best Android games currently available are

# PUBG Mobile

#### Premium

PUBG Mobile is a new release it's already among the most popular 3D games out there. It's a battle royale game with up to 100 players competing against each other. The game also includes a smaller arcade mode and some other modes for players. It also plays shockingly well for being a mobile shooter that is also this new. The game was free at first. However, updates brought a fermium element to the game. Thankfully, it's mostly customization stuff and not game play stuff.

#### FORTNITE



The most popular game in the world is available on Android, but you can't get it on Google Play. Instead, you'll need to get it from the Epic Games website. For the uninitiated, *Fortnite* is a battle royale-style game full of color and strategy. In the game, you'll need to master building structures to truly compete with the best — but even if you don't, it's still a fun time

#### **ASPHALT 9**



#### **Price : - Premium**

Asphalt 9: Legends is the latest arcade racing game from Game loft. It's actually quite excellent for an arcade racer. You can unlock a ton of different vehicles, race in hundreds of various events (including special events), and customize your car to make it yours. There is, of course, online PvP mode as well. The graphics are above average for racing games and it is truly enjoyable to look at. Some other decent arcade racers include CSR Racing 2 and Real Racing 3. You could definitely do a lot worse with these 3D graphics

#### FREEFIRE

Free Fire - Battlegrounds is a survival, third-person shooter game in the form of battle royale. 50 players parachute onto a remote island, where there is only one winner - the last man standing. Players freely choose starting position

grab weapons and supplies to bolster your chances of survival in the battlegrounds. The battleground shrinks as time goes on, forcing players to engage each other in a tactical and diverse environment. Free Fire - Battlegrounds is the ultimate battlegrounds game with the most realistic graphics and easy-to-use controls





G. Eeshwak Reddy Roll No- 188T1A0513 II CSE-A



• t is a reprogrammable, multifunctional manipulator designed to move material, parts, tools, or specialized devices through variable programmed motions for the performance of a variety of tasks." (Robot Institute of America)

"A robot is a one-armed, blind idiot with limited memory and which cannot speak, see, or hear."

Automation –Machinery designed to carry out a specific task, Bottling machine, Dishwasher,
Paint sprayer, Robots – machinery designed to carry out a variety of tasks, Pick and place arms,
Mobile

robots Computer Numerical Control machines. Pick and place. Moves items between points. Continuous path control

Moves along a programmable path, Sensory, Employs sensors for feedback, Moves items from one point to another, Does not need to follow a specific path between points

- Uses include loading and unloading machines, placing components on circuit boards, and moving parts off conveyor belts.

#### **SENSORY**

– Uses sensors for feedback.

- Closed-loop robots use sensors in conjunction with actuators to gain higher accuracy – servo motors. Uses include mobile robotics, telepresence, search and rescue, pick and place with machine vision.

#### **KINEMATICS AND DYNAMICS**

- Degrees of freedom—number of independent motions
  - Translation--3 independent directions
  - Rotation-- 3 independent axes
  - 2D motion = 3 degrees of freedom: 2 translation, 1 rotation
  - 3D motion = 6 degrees of freedom: 3 translation, 3 rotation

#### **NEW DIRECTIONS**

- Haptics--tactile sensing
- Other kinematic mechanisms,

e.g. snake motion

- Robots that can learnRotation encoders
- Cameras
- Pressure sensors

#### **FEEDBACK CONTROL** Temperature sensors

- Limit switches
- Optical sensors



#### A 2-D "Binary" Robot Segment

Example of a 2D robotic link having three solenoids to determine geometry. All members are linked by pin joints; members A,B,C have two states—in, out—controlled by in-line solenoids. Note that the geometry of such a link can be represented in terms of three binary digits corresponding to the states of A,B,C, e.g., 010 represents A,C in, B out. Links can be chained together and controlled by sets of three bit codes.

N.Yeshwanth

CSE-A II Year 188T1A0542



### JAL

Water is most important for our life. It is one of the most main resource that we cannot survive without it. But what we are doing? The water is being polluted. We are wasting the water and the scarcity of the water is being increasing day by day.

#### India's water crisis

India's water crisis





#### SCARCITY OF WATER IN INDIA:

Water scarcity in India is due to both Natural and human made causes.

#### CAUSES:

Water contaminated with biological and Chemical pollutants. 33% of the country having access to traditional sanitation. Excessive use of ground water for irrigation has also caused the strain in the resource. A significant portion of water used for industrial and domestic purposes. And solid waste also pollute the water.

#### SAVING:

Rainwater harvesting is one of the best way to store and reuse the water. In our college "DHANEKULA" rainwater

#### harvesting is being implemented effectively.

# JAL SHAKTI

Recently our Central government took a new project named "JAL SHAKTI". It is formed on 31<sup>st</sup> May 2019. Our honorable Prime Minister Mr. Narendra Modi promised people about safe drinking water and now he started this Jal Shakti mission. The Government of India is seriously thinking about the connecting of main rivers with in India to the extent possible to make the water available to all states. Ministry of Jal Shakti was formed by merging Ministry of Drinking water and Sanitation with Ministry of Water resources and river.



Development. Sri.Gajendra Singh Shekhawat, Member of Parliament from

Jodhpur, has allocated this portfolio. And Jal Shakti Ministry gets "Rs28,261 Cores" Budget allocation. All this has been going on for saving and having pure water. Finally "SAVE WATER & SAVE LIFE".



By Y.Jothsna 188T1A05 60 II-CSE-A

# **Parallel File System For Linux clusters**

As Linux clusters have matured as platforms for low cost, high-performance parallel computing, software packages to provide many key services have emerged, especially in areas such as message passing and networking. One area devoid of support, however, has been parallel file systems, which are critical for high performance I/O on such clusters. We have developed a parallel file system for Linux clusters, called the Parallel Virtual File System (PVFS). PVFS is intended both as a high-performance parallel file system that anyone can download and use and as a tool for pursuing further research in parallel I/O and parallel file systems for Linux clusters.

In this paper, we describe the design and implementation of PVFS and present performance results on the Chiba City cluster at Argonne. It provides performance results for a workload of concurrent reads and writes for various numbers of computer nodes, I/O nodes, and I/O request sizes. It also presents performance results for MPI-IO on PVFS, both for a concurrent read/write workload and for the BTIO benchmark. We compare the I/O performance when using a Myrinet network versus a Fast- Ethernet network for I/O-related communication in PVFS. It is obtained read and write bandwidths as high as 700 Mbytes/sec with Myrinet and 225 Mbytes/sec with fast Ethernet.



The first group comprises commercial parallel file systems such as PFS for the Intel Paragon, PIOFS. And GPFS for the IBM SP, HFS for the HP Exemplar, and XFS for the SGI Origin2000. These file systems provide high performance and functionality desired for I/O-intensive applications but is available only on the specific platforms on which the vendor has implemented them. (SGI, however, has recently released XFS for Linux. SGI is also developing a version of XFS for clusters, called CXFS, but, to our knowledge, CXFS is not yet available for Linux clusters.)The second group comprises distributed file systems such as NFS, FS/Coda, Intermezzo, XFS and GFS. These file systems are designed to provide distributed access to files from multiple client machines, and their consistency semantics and caching behavior are designed accordingly for such access. The types of workloads resulting from large parallel scientific applications usually do not mesh well with file systems designed for distributed access; particularly, distributed file systems are not designed for high-

bandwidth concurrent writes that parallel applications typically require.

The third group includes, A number of research projects existing in the areas of parallel I/O and parallel file systems, such as PIOUS, PPFS, and Galley. PIOUS focuses on viewing I/O from the viewpoint of transactions, PPFS research focuses on adaptive caching and prefetching, and Galley looks at disk-access optimization and alternative file organizations. These file systems may be freely available but are mostly research prototypes, not intended for everyday use by others.

#### PVFS Design and Implementation

As a parallel file system, the primary goal of PVFS is to provide high-speed access to file data for parallel applications. In addition, PVFS provides a cluster-wide consistent name space, enables user-controlled striping of data across disks on different I/O nodes, and allows existing binaries to operate on PVFS files without the need for recompiling. Like many other file systems, PVFS is designed as a client-server system with multiple servers, called I/O daemons. I/O daemons typically run on separate nodes in the cluster, called I/O nodes, which have disks attached to them. Each PVFS file is striped across the disks on the I/O nodes.

Application processes interact with PVFS via a client library. PVFS also has a manager daemon that handles only metadata operations such as permission checking for file creation, open, close, and remove operations. The manager does not participate in read/write operations; the client library and the I/O daemons handle all file I/Os without the intervention of the manager. The clients, I/O daemons, and the manager need not be run on different machines. Running them on different machines may result in higher performance, however, PVFS is primarily a user-level implementation; no kernel

modifications or modules are necessary to install or operate the file system.

PVFS Manager and Metadata: -

A single manager daemon is responsible for the storage of and access to all the metadata in the PVFS file system. Metadata, in the context of a file system, refers to information describing the characteristics of a file, such as permissions, the owner and group, and, more important, the physical distribution of the file data. In the case of a parallel file system, the distribution information must include both file locations on disk and disk locations in the cluster. Unlike a traditional file system, where metadata and file data are all stored on the raw blocks of a single device, parallel file systems must distribute this data among many physical devices. In PVFS, for simplicity, we chose to store both file data and metadata in files on existing local file systems rather than directly on raw devices.

PVFS files are striped across a set of I/O nodes in order to facilitate parallel access. The specifics of a given file distribution are described with three metadata parameters: base I/O node number, number of I/O nodes, and stripe size. These parameters, together with an ordering of the I/O nodes for the file system, allow the

file distribution to be completely specified. An example of some of the metadata fields for a file /pvfs/foo is given in Table 1. The pcount field specifies that the data is spread across three I/O nodes, base specifies that the first (or base) I/O node is node 2, and ssize specifies that the stripe size—the unit by which the file is divided among the I/O nodes—is 64 Kbytes. The user can set these parameters when the file is created, or PVFS will use a default set of values

By Md.Rehana,168T1A0561,IV CSE

# **3D INTERNET**

3D Internet, also known as virtual worlds, is a powerful new way for you to reach consumers, business customers, co-workers, partners, and students. It combines the immediacy of television, the versatile content of the Web, and the relationship-building strengths of social networking sites like Face book.

Yet unlike the passive experience of television, the 3D Internet is inherently interactive and engaging. Virtual worlds provide immersive 3D experiences that replicate (and in some cases exceed) real life.

People who take part in virtual worlds stay online longer with a heightened level of interest. To take advantage of that interest, diverse businesses and organisations have claimed an early stake in this fast- growing market.

They include technology leaders such as IBM, Microsoft, and Cisco, companies such as BMW, Toyota, Circuit City, Coca Cola, and Calvin Klein, and scores of universities, including Harvard, Stanford and Penn State.

What is 3D Internet?

3D Internet is the next generation after the current 2d web.3D Internet consists of interconnected services, presented as virtual worlds.



Imagine a set-up of interconnected virtual worlds inhabited by users who can visit and consume services through "teleporting" from one world to another.

3D Internet will rely on the same basic technology and components as that of a traditional browser, and it will interact with the same search engines and servers. Aside from the use of 3D computer graphics and personalized avatars, the important difference lies in a much more social experience compared to the two- dimensional Internet of today.

3D Internet is incredibly social. If you're reading a document, you can see other people reading the same document. You connect organically with other people that share your interests and consume the same services that you do.

3D Internet: Why? One of the often heard arguments against the 3D Internet is in the form of the question "why do we

need it?" For most of its users the Internet is a familiar, comfortable medium where we communicate with each other, get our news, shop, pay our bills, and more.

We are indeed so much used to and dependant on its existence that we don't think about its nature anymore just like we do not think about Ohm's law when we turn on the lights. From this perspective what we have,

i.e. the 2D version, seems "sufficient" and the 3D Internet is yet another fad.

However, if we stop and think about the nature of the Internet for a moment we realize that it is nothing but a virtual environment (cyberspace) where people and organizations interact with each other and exchange information. Once this fact is well understood, the question can be turned on its head and becomes "why do we restrict ourselves to 2D pages and hyperlinks for all these activities?"

Navigating hierarchical data structures is often cumbersome for large data sets. Unfortunately, the Internet as we know is organized as a flat abstract mesh of interconnected hierarchical documents. A typical 2D website is an extremely abstract entity and consists of nothing but a bunch of documents and pictures.

Within the website, at every level of the interaction, the developers have to provide the user immediate navigational help.

Otherwise, the user would get lost sooner or later. Since this is a very abstract environment, there is no straightforward way of providing a navigation scheme which would be immediately recognizable to human beings. The situation is not any better when traveling between websites.. It is no surprise that Google is the most powerful Internet Company of our times.

#### By K.Sudeshna,168T1A0555,IVCSE

## **Artificial Intelligence and Expert System**

Artificial intelligence (AI) is the intelligence of machines and the branch of computer science that aims to create it. According to Textbooks, Artificial Intelligence is "the study and design of intelligent agents, where an intelligent agent is a system that perceives its environment and takes actions that maximize its chances of success".

Artificial intelligence has been the subject of optimism, but has also suffered setbacks and, today has become an essential part of the technology industry, providing the heavy lifting for many of the most difficult problems in computer science. All research is highly technical and specialized, deeply divided into subfields that often fail to communicate with each other Subfields have grown up around particular institutions, the work of individual researchers, the solution of specific problems, longstanding differences of opinion about how AI should be done and the application of widely differing tools.

The use of Artificial Intelligence methods is becoming increasingly common in the modeling and forecasting of hydrological and water resource processes. Artificial intelligence (AI) is the field of scientific inquiry concerned with designing mechanical systems that can simulate human mental processes. The field draws upon theoretical constructs from a wide variety of disciplines, including mathematics, psychology, linguistics, neurophysiology, computer science, and electronic engineering.

Some of the most promising developments to come out of recent AI research are "expert" systems or computer programs that simulate the problem-solving techniques of human experts in a particular domain. There is a class of computer programs, known as expert systems that aim to mimic human reasoning. The methods and techniques used to build these programs are the outcomes of efforts in a

field of computer science known as Artificial Intelligence (AI). Expert systems have been built to diagnose disease (Pathfinder is an expert system that assists surgical pathologists with the diagnosis of lymph-node diseases, aid in the design chemical syntheses (Example), the prospect for mineral deposits (PROSPECTOR), translate natural languages, and solve the complex mathematical problem (MACSYMA).

Here are a few more examples from our day to day life that use AI- Apple's Siri, Samsung's Bixby, Netflix recommendation engine, games like call of duty, self-driving cars, spam filtering engines, ride sharing in Uber, speech and pattern recognition, etc.

Another prominent example of an AI-based machine is Jarvis (not from Iron Man movie). Facebook's CEO Mark Zuckerberg has built Jarvis which is currently deployed in his smart home. Jarvis is able to process language, control sensors, doors, cameras, light and thermal controls and perform face recognition.

#### **INTRODUCTION:**

The term Artificial Intelligence was coined by John McCarthy, in 1956, who defines it as "the science and engineering of making intelligent machines. The field was founded on the claim that a central property of humans, intelligence. The sapience of Homo sapiens can be so precisely described that it can be simulated by a machine. This raises philosophical issues about the nature of the mind and limits of scientific hubris, issues which have been addressed by myth, fiction and philosophy

since antiquity.

Artificial Intelligence (AI) is the key technology in many of today's novel applications, ranging from banking systems that detect attempted credit card fraud, to telephone systems that understand speech, to software systems that notice when you're having problems and offer appropriate advice. These technologies would not exist today without the sustained federal support of fundamental AI research over the past three decades. Artificial Intelligence (AI) in the field of information technology focused on creating machines that can participate in behaviors that humans consider intelligent. The possibility of intelligent machines to have human curiosity since ancient times and today with the advent of computer and 50 years of research into AI programming techniques, the dream of smart machines is a reality. Researchers create systems that can mimic human thought, understand speech, then the best player chess husband, and countless benefits not possible before.

This mainly concerned with one of the major branches of AI, that is expert systems. Building an expert system is known as knowledge engineering and its practitioners are called knowledge engineers. The knowledge engineer must make sure that the computer has all the knowledge needed to solve a problem. The knowledge engineer must choose one or more forms in which to represent the required knowledge as symbol patterns in the memory of the computer – that is, he (or she) must choose a knowledge representation. He must also ensure that the computer can use the knowledge efficiently by selecting from a handful of reasoning methods. The practice of knowledge engineering is described later. We first describe the components of expert systems.

In conventional computer programs, problem-solving knowledge is encoded in program logic and program- resident data structures. Expert systems differ from conventional programs both in the way problem knowledge is stored and used. An expert system is a computer program, with a set of rules encapsulating knowledge about a particular problem domain (i.e., medicine, chemistry, finance, flight, etc). These rules prescribe actions to take when certain conditions hold and define the effect of the action on deductions or data. The expert system, seemingly, uses reasoning capabilities to reach conclusions or to perform analytical

tasks. Expert systems that record the knowledge needed to solve a problem as a collection of rules stored in a knowledge-based are called rule-based system

Expert systems are especially important to organizations that rely on people who possess specialized knowledge of some problem domain, especially if this knowledge and experience cannot be easily transferred. Artificial intelligence methods and techniques have been applied to a broad range of problems and disciplines, some of which are esoteric and others which are extremely practical.

Major Branches of AI:

Robotics: Mechanical and computer devices that perform tedious tasks with high

precision. Vision system: Capture, store and manipulate the visual images and

pictures.

Natural language processing: Computer understands and reacts to the command and statements to natural language like English.

Learning system: Computer changes how it reacts or functions to the feedback provided

to it. Neural system: Computer that can act like or simulate the functioning of the brain.

Expert system: Programming computers to make decisions in real life situations. (ex: expert system help doctors in diagnosing the diseases)



By G.Ramya, 168T1A0533,IVCSE

# **COBRA TECHNOLOGY**

#### What is CORBA?

CORBA (Common Object Request Broker Architecture) is a distributed Object-oriented client/server platform. It includes:

- An object-oriented Remote Procedure Call (RPC) mechanism
- object services (such as the Naming or Trading Service)
- Language mappings for different programming languages
- Interoperability protocols
- Programming guidelines and patterns

CORBA replaces ad-hoc special-purpose mechanisms (such as socket Communication) with an open, standardized, scalable, and portable Platform. OMG Common Object Request Broker Architecture (CORBA)

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The Object Management Group's (OMG's) Common Object Request Broker Architecture (CORBA®) middleware standard enables software applications to invoke operations on distributed objects without concern for object location, programming language, operating system platform, communication protocols, interconnections or hardware

CORRA remains the most successful open standard in supporting distributed heterogeneous mission

critical systems that require exceptional levels of performance and QoS. PrismTech's Open Fusion provides the most comprehensive range of CORBA middleware products available from any vendor CORBA uses an interface definition language (IDL) to specify the interfaces that objects will present to the outside world. CORBA then specifies a "mapping" from IDL to a specific implementation language such as C++ or Java. Standard mappings exist for Ada, C, C++, Lisp, Smalltalk, Java, COBOL, PL/I and Python. There are also non-standard mappings for Perl, Visual Basic, Ruby, Erlang, Tcl and even VHDL implemented by object request brokers (ORBs) written for those languages

A language mapping requires the developer to create some IDL code that represents the interfaces to his objects. Typically, a CORBA implementation comes with a tool called an IDL compiler which converts the developer's IDL code into some language-specific generated code. A traditional compiler then compiles the generated code to create the linkable-object files for the application. the figure below illustrates how the generated code is used within the CORBA infrastructure

The CORBA specification dictates that there shall be an object request broker (ORB) through which the application interacts with other objects. In practice, the application simply initializes the ORB, and accesses an internal Object Adapter which maintains such issues as reference counting, object (& reference) instantiation policies, object lifetime policies, etc

The Object Adapter is used to register instances of the generated code classes. Generated Code Classes are the result of compiling the user IDL code which translates the high- level interface definition into an OS- and language-specific class base for use by the user application. This step is necessary in order to enforce the CORBA semantics and provide a clean user processes for interfacing with the CORBA infrastructure.

by



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# **DAROC Technology**

DAROC is a middleware architectural model, which is loosely based upon on the blackboard model. This architecture will decrease distributed software development time by abstracting away much of the communication overhead and scheduling, which most software developers are burdened with in their application. This approach will still provide a flexible architectural framework that allow for modularity in its components, which then in turn facilitates overall system upgrades and modifications. The combination of reduced communication and synchronization overhead and flexibility will reduce software development time, which has a direct impact on the overall cost of development and testing Objectives:

The short-term goal of DAROC is to provide a programming environment that will allow both undergraduate and graduate students the ability to gain some exposure and experience in programming distributed applications

The long-term goal is a bit more ambitious. The DAROC architecture will address problems such as distributed simulation and battle management scenarios.

Major DAROC Objectives:

Eliminate message-passing code implemented by the programmer, communication achieved by the reading and writing of objects on the blackboard

Eliminate control component, burden of scheduling is placed on the OS not on the application program Activate functional elements in DAROC periodically or based on data changes when

performing computations. Reduce code complexity allowing an "average" programmer to rapidly develop distributed applications.

Capability for fault recovery via data replication

DAROC consists of two primary components; functional elements (FE) are active and perform computations and analyze the system state, and the blackboard, which is the structure that holds data objects (DO) that make up the blackboard. Unlike functional elements, data objects are passive and do not perform computations.

#### DAROC At A Glance:

The desire of DAROC is to empower programmers to be able to write components of distributed systems without being a distributed systems expert.



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# LAMP Technology

LAMP is a shorthand term for a web application platform consisting of Linux, Apache, MySQL and one of Perl or PHP. Together, these open source tools provide a world-class platform for deploying web applications.

Running on the Linux operating system, the Apache web server, the MySQL database and the programming languages, PHP or Perl deliver all of the components needed to build secure scalable dynamic websites. LAMP has been touted as "the killer app" of the open source world.

With many LAMP sites running Ebusiness logic and Ecommerce site and requiring 24x7 uptime, ensuring the highest levels of data and application availability is critical. For organizations that have taken advantage of LAMP, these levels of availability are ensured by providing constant monitoring of the end-to-end application stack and immediate recovery of any failed solution components. Some also supports the movement of LAMP components among servers to remove the need for downtime associated with planned system maintenance.

The paper gives an overview of LINUX, APACHE, MYSQL, and mainly on PHP and its advantage over other active generation tools for interactive web design and its interface with the advanced database like MYSQL and finally the conclusion is provided.



It's the development platform that determines the efficiency of an application. The choice of a wrong platform means the resultant application won't match the specifications of the client in their entirety.

Businesses, these days, are not looking for just any application. They want an application that can improve their business processes and fast track their business growth. For this to happen, they need an application that can be easily integrated into their existing IT infrastructure and one that can be trusted to deliver a high performance.

With an aim to developing the best web applications, developers have increasingly started using LAMP. LAMP is a software bundle or stack that stands for Linux, Apache, MySQL and PHP, Perl or Python. I

It's interesting to note that they were developed individually and at no point during the development of the software did the developers think about creating them for combined use. But, it was found that taken together, they offer an unbeatable stack of solutions driven technologies that support application servers.



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## **Mobile Phone Cloning**

Mobile communication has been readily available for several years, and is major business today. It provides a valuable service to its users who are willing to pay a considerable premium over a fixed line phone, to be able to walk and talk freely. Because of its usefulness and the money involved in the business, it is subject to fraud.

Unfortunately, the advance of security standards has not kept pace with the dissemination of mobile communication.

Some of the features of mobile communication make it an alluring target for criminals. It is a relatively new invention, so not all people are quite familiar with its possibilities, in good or in bad. Its newness also means intense competition among mobile phone service providers as they are attracting customers. The major threat to mobile phone is from cloning.

What is Mobile Phone Cloning

Cell phone cloning refers to the act of copying the identity of one mobile telephone to another.

This is usually done to make fraudulent telephone calls. The bill for the calls go to the legitimate subscriber. This made cloning very popular in areas with large immigrant populations, where the cost to "call home" was very steep. The cloner is also able to make effectively anonymous calls, which attracts another group of interested law breakers.



Cell phone cloning started with Motorola "bag" phones and reached its peak in the mid 90's with a commonly available modification for Motorola "brick" phones such as the Classic, the Ultra Classic, and the Model 8000

Cloning involved modifying or replacing the EPROM in the phone with a new chip, which would allow one to configure an ESN (Electronic Serial Number) via software. The MIN (Mobile Identification Number) would also have to be changed.

Cloning still works under the AMPS/NAMPS system, but has fallen in popularity as older phones that can be cloned are more difficult to find and newer phones have not been successfully reverse engineered

Cloning has been successfully demonstrated under GSM, but the process is not easy and currently remains in the realm of serious hobbyists and researchers. Furthermore, cloning as a means of escaping the law is difficult because of the additional feature of a radio fingerprint that is present in every mobile phone's transmission signal. This fingerprint remains the same even if the ESN or MIN are changed. Mobile phone companies can use the mismatch in the fingerprints and the ESN and MIN to identify fraud cases

Voice Over Internet Protocol Using an ordinary phone for most people is a common daily occurrence as is listening to your favorite CD containing the digitally recorded music. It is only a small extension to these technologies in having your voice transmitted in data packets. The transmission of voice in the phone network was done originally using an analog signal but this has been replaced in much of the world by digital networks. Although many of our phones are still analog, the network that carries that voice has become digital.

In todays phone networks, the analog voice going into our analog phones is digitized as it enters the phone network. This digitization process, shown in Figure 1 below, records a sample of the loudness (voltage) of the signal at fixed intervals of time. These digital voice samples travel through the network one byte at a time.

Voice over Internet Protocol

VoIP, or "Voice over Internet Protocol" refers to sending voice and fax phone calls over data networks, particularly the Internet. This technology offers cost savings by making more efficient use of the existing network.

#### What is Data Warehousing?

A Data Warehousing (DW) is process for collecting and managing data from varied sources to provide meaningful business insights. A Data warehouse is typically used to connect and analyze business data from heterogeneous sources. The data warehouse is the core of the BI system which is built for data analysis and reporting.

How Datawarehouse works?

A Data Warehouse works as a central repository where information arrives from one or more data sources. Data flows into a data warehouse from the transactional system and other relational databases.

Data may be:

Structure

d Semi-

structure

d

Unstructured data

The data is processed, transformed, and ingested so that users can access the processed data in the Data Warehouse through Business Intelligence tools, SQL clients, and spreadsheets. A data warehouse merges information coming from different sources into one comprehensive database.

By merging all of this information in one place, an organization can analyze its customers more holistically. This helps to ensure that it has considered all the information available. Data warehousing makes data mining possible. Data mining is looking for patterns in the data that may lead to higher sales and profits



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# WHAT IS RASPBERRY PI?

The Raspberry Pi (/pat/) is a series of small single-board computers developed in the United Kingdom by the Raspberry Pi Foundation to promote teaching of basic computer science in schools and in developing countries.[6][7][8] The original model became far more popular than anticipated,[9] selling outside its target market for uses such as robotics. It does not include peripherals (such as keyboards and mice) or cases. However, some accessories have been included in several official and unofficial bundles.[9]Most Pis are made in a Sony factory in Pencoed, Wales.[16] Some are made in China and Japan.[17]



Generations of released models[edit]

The Raspberry Pi Zero, a US\$5 model first introduced in 2015



The Raspberry Pi 3 B+, introduced in 2018



The Raspberry Pi 4 B, introduced in 2019Processor speed ranges from 700 MHz to 1.4 GHz for the Pi 3 Model B+ or 1.5 GHz for the Pi 4; on-board memory ranges from 256 MB to 1 GB random-access memory (RAM), with up to 4 GB available on the Pi 4. Secure Digital (SD) cards in MicroSDHC form factor (SDHC on early models) are used to store the operating system and program memory. The boards have one to five USB ports. For video output, HDMI and composite video are supported, with a standard 3.5 mm tip-ring-sleeve jack for audio output. Lower-level output is provided by a number of GPIO pins, which support common protocols like I<sup>2</sup>C. The B-models have an 8P8C Ethernet port and the Pi 3, Pi 4 and Pi Zero W have on-board Wi- Fi 802.11n and Bluetooth. Prices range from US\$5 to \$55.

The first generation (Raspberry Pi 1 Model B) was released in February 2012, followed by the simpler and cheaper Model A. In 2014, the Foundation released a board with an improved design, Raspberry Pi 1 Model B+. These boards are approximately credit-card sized and represent the standard mainline

form-factor. Improved A+ and B+ models were released a year later. A "Compute Module" was released in April 2014 for embedded applications. The Raspberry Pi 2, which added more RAM, was released in February 2015.

Raspberry Pi 3 Model B was released in February 2016 with a 1.2 GHz 64-bit quad core processor, on- board 802.11n Wi-Fi, Bluetooth and USB boot capabilities.[21] On Pi Day 2018 the Raspberry Pi 3 Model B+ was launched with a faster 1.4 GHz processor and a three-times faster gigabit Ethernet (throughput limited to ca. 300 Mbit/s by the internal USB 2.0 connection) or 2.4 / 5 GHz dual-band 802.11ac Wi-Fi (100 Mbit/s).[15] Other features are Power over Ethernet (PoE) (with the add-on PoE HAT), USB boot and network boot (an SD card is no longer required).

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# **The Cisco Catalyst**

The Cisco® Catalyst® 9120 Series Access Points are the next generation of enterprise access points.

They are resilient, secure, and intelligent.

We are more dependent on our wireless networks than ever before. Additional devices connect to the network every year and the Cisco Catalyst 9120 Series Access Points will provide a seamless experience anywhere for everyone. Going beyond the Wi-Fi 6 (802.11ax) standard, the Catalyst 9120 provides integrated security, resiliency and operational flexibility as well as increased network intelligence.

Extending Cisco's intent-based network and perfect for networks of all sizes, the Catalyst 9120 scales to the growing demands of IoT while fully supporting the latest innovations and new technologies. Not only that, but the Catalyst 9120 is the leaders in performance, security and analytics.

The Catalyst 9120 Series Access Points, paired with Cisco DNA, are enterprise-class products that will address your current and future needs. These access points are the first step in updating your network and are able to take better advantage of all of the features and benefits that Wi-Fi 6 provides. Key features:

- Four radios: 5 GHz (4x4) Flexible radio with 2.4 or 5 GHz (4x4), Unified RF Engine and 802.15.4 for IoT
- OFDMA and MU-MIMO
- Multigigabit support
- Internal, external antenna and also external antenna for professional installations
- Available with optional embedded wireless controller

Future feature support:

• IoT ready (BLE, Zigbee, and other multiprotocol 802.15.4 devices)\*\*

\*\* = Future Support
The Cisco Catalyst 9120 Series Access Points support both orthogonal frequency-division multiple access (OFDMA) and multiuser multiple-input, multiple-output (MU-MIMO), delivering more predictable performance for advanced applications and IoT. Additionally, with up to 2.5 Gbps with NBASE-T and IEEE 802.3bz Ethernet compatibility, the Cisco Catalyst 9120 Series can seamlessly offload network traffic without any bottlenecks. With Cisco's Multigigabit technology, you can use your existing Category 5e or 6 cabling to achieve speeds up to 2.5 Gbps, allowing for higher throughputs with minimum cost. And with different antenna choices, you're able to decide which option works best for you.

| Feature                  | Benefits  |
|--------------------------|---|
|                          |   |
| Wi-Fi 6 (802.11ax)       | The IEEE 802.11ax emerging standard, also known as High-Efficiency-Wireless (HEW) or Wi-Fi 6, builds on 802.11ac. It delivers a better experience in typical environments with more predictable performance for advanced applications such as 4K or 8K video, high-density, high-definition collaboration apps, all-wireless offices, and IoT. Wi-Fi 6 is designed to use both the 2.4-Ghz and 5-GHz bands, unlike the 802.11ac standard. |
| Cisco RF ASIC            | Cisco RF ASIC is a fully integrated Software Defined Radio (SDR) that can<br>perform advanced RF spectrum analysis and delivers features like CleanAir,<br>Wireless Intrusion Prevention System (WIPS), Fast Locate*, DFS detection. (* -<br>Future)  |
| Uplink/downlink<br>OFDMA | OFDMA-based scheduling splits the bandwidth into smaller chunks called Resource Units (RUs), which can be allocated to individual clients in both the downlink and uplink directions to reduce overhead and latency.  |
| MU-MIMO<br>technology    | Supporting four spatial streams, MU-MIMO enables access points to split spatial streams between client devices, to maximize throughput.   |
| BSS coloring             | Spatial reuse (also known as Basic Service Set [BSS] coloring) allows the access points and their clients to differentiate between BSSs, thus permitting more simultaneous transmissions.   |
| Target wake time         | A new power savings mode called Target Wake Time (TWT) allows the client to<br>stay asleep and to wake up only at prescheduled (target) times to exchange data with<br>the  |
|                          |   |
| Feature                  | Benefits  |
|                          | access point. This offers significant energy savings for battery-operated devices, up to 3x to 4x compared to 802.11n and 802.11ac.   |
| Intelligent Capture      | Intelligent Capture probes the network and provides Cisco DNA Center with deep<br>analysis. The software can track over 240 anomalies and instantaneously review all<br>packets on demand, emulating the onsite network administrator. Intelligent Capture<br>allows for more informed decisions on your wireless networks.   |
|                          |   |

| Flexible Radio<br>Assignment          | <ul> <li>Allows the access points to intelligently determine the operating mode of serving radios based on the RF environment. The access points can operate in the following modes:</li> <li>2.4-GHz and 5-GHz mode: One radio will serve clients in 2.4-GHz mode, while the other serves clients in 5-GHz mode.</li> <li>Dual 5-GHz mode: Both radios inside the access point operate on the 5-GHz band maximizing the benefits of Wi-Fi 6 and increasing client device capacity.</li> </ul> |
|---------------------------------------|--|
| Dual 5-GHz radio<br>support           | Enables both radios to operate in 5-GHz client serving mode, allowing an industry-<br>leading 5.2 Gbps (2 x 2.6 Gbps) over-the-air speeds while increasing client capacity.  |
| Smart antenna<br>connector            | An intelligent second physical antenna connector is included on Catalyst 9120<br>Access Points with an external antenna. This connector provides advanced network<br>design flexibility for high-density and large open-area environments such as<br>auditoriums, convention centers, libraries, cafeterias, and arenas/stadiums, allowing<br>two sets of antennas to be connected and active on a single access point.  |
| Cisco Embedded<br>Wireless Controller | The Catalyst 9120 Wi-Fi 6 access points is available with a built-in controller. The Cisco Embedded Wireless Controller on Catalyst 9100 Access Points provides an easy- to-deploy and manage option that does not require a physical appliance. The control resides on the access point so there is no added footprint or complexity. And, because it uses Catalyst 9800 code, it's easy to migrate your network as your needs grow.  |
| Multigigabit<br>Ethernet support      | Provides uplink speeds of 2.5 Gbps, in addition to 100 Mbps and 1 Gbps. All speeds are supported on Category 5e cabling for an industry first, as well as 10GBASE-T (IEEE 802.3bz) cabling.  |
| Bluetooth 5                           | Integrated Bluetooth Low Energy (BLE) 5 radio to enable IoT use cases such as location tracking and wayfinding.  |
| Container support for applications    | Enables edge computing capabilities for IoT applications on the host access point.   |
| Apple Features                        | Apple and Cisco have partnered to create an optimal mobile experience for iOS devices on corporate networks based on Cisco technologies. Using new features in iOS 10, in combination with the latest software and hardware from Cisco, businesses can now more effectively use their network infrastructure to deliver an enhanced user experience across all business applications.  |

Note: Features available in a future releases – Target Wake Time, BSS Coloring, Uplink/downlink OFDMA, Cisco Intelligent Capture

Resilient - steady performance in demanding environments

Networks infrastructure that upgrade to Wi-Fi 6 enabled devices will get up to four times the capacity boost needed to support the additional devices connected to the network as well as the data that they generate. Wi-Fi 6 will offer multi-gigabit performance which will feature a seamless connectivity with higher throughput compared to the 802.11ac standard. This means you'll see your network performance run smoother. With support for BSS coloring, the new standard eases high device dense deployments by allowing simultaneous transmissions, ultimately increasing network capacity, customer interactions, and value-add services. BSS coloring allows the limited channels in the 2.4 GHz to have better spectral re-use benefiting IoT and 2.4 GHz clients.

Trustworthy systems built with Cisco Trust Anchor Technologies provide a highly secure foundation for Cisco products. With the Catalyst 9100 Series, these technologies enable hardware and software

authenticity assurance for supply chain trust and strong mitigation against man-in-the-middle attacks that compromise software and firmware. Trust Anchor capabilities include:

• Image signing: Cryptographically signed images provide assurance that the firmware, BIOS, and other software are authentic and unmodified. As the system boots, the system's software signatures are checked for integrity.

• Secure Boot: Cisco Secure Boot technology anchors the boot sequence chain of trust to immutable hardware, mitigating threats against a system's foundational state and the software that is to be loaded, regardless of a user's privilege level. It provides layered protection against the persistence of illicitly modified firmware.

• Cisco Trust Anchor module: A tamper-resistant, strong cryptographic, single-chip solution provides hardware authenticity assurance to uniquely identify the product so that its origin can be confirmed to Cisco. Cisco DNA Support

Pairing the Cisco Catalyst 9120 Series Access Points with the Cisco Digital Network Architecture (Cisco DNA) allows for a total network transformation. Cisco DNA allows you to truly understand your network with real- time analytics, quickly detect and contain security threats, and easily provide networkwide consistency through automation and virtualization.

Cisco DNA with Software-Defined Access (SD-Access) is the network fabric that powers business. It is an open and extensible, software-driven architecture that accelerates and simplifies your enterprise network operations. The programmable architecture frees your IT staff from time-consuming, repetitive network configuration tasks so they can focus instead on innovation that positively transforms your business. By decoupling network functions from the hardware, you can build and manage your entire wired and wireless network from a single user interface. SD-Access enables policy-based automation from edge to cloud with foundational capabilities. These include:

- Simplified device deployment
- Unified management of wired and wireless networks
- Network virtualization and segmentation
- Group-based policies
- Context-based analytics

The Cisco Catalyst 9120 Series Access Points support Software-Defined Access, Cisco's leading enterprise architecture.

Working together, the Cisco Catalyst 9120 Series and Cisco DNA offer such features as:

- Cisco DNA Spaces
- Cisco Identity Services Engine
- Cisco DNA Analytics and Assurance

The result? Your network stays relevant, becomes digital ready, and is the lifeblood of your organization.



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# AUGUMENTED REALITY(AR)

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory and olfactory.AR can be defined as a system that fulfills three basic features: a combination of real and virtual worlds, real-time interaction, and accurate 3D registration of virtual and real objects.

Augmented reality is related to two largely synonymous terms: mixed reality and computer-mediated reality. The primary value of augmented reality is the manner in which components of the digital world blend into a person's perception of the real world, not as a simple display of data, but through the integration of immersive sensations, which are perceived as natural parts of an environment. Augmented reality applications have spanned commercial industries such as education, communications, medicine, and entertainment. In education, content may be accessed by scanning or viewing an image with a mobile device or by using marker less AR techniques.

Augmented reality is used to enhance natural environments or situations and offer perceptually enriched experiences. With the help of advanced AR technologies the information about the surrounding real world of the user becomes interactive and digitally manipulated. Information about the environment and its objects is overlaid on the real world. This information can be virtual or real. Augmented reality also has a lot of potential in the gathering and sharing of tacit knowledge. Augmentation techniques are typically performed in real time and in semantic contexts with environmental elements.

Augmented reality has been explored for many applications, from gaming and entertainment to medicine, education and business. Example application areas described below include archaeology, architecture, commerce and education. Some of the earliest cited examples include augmented reality used to support surgery by providing virtual overlays to guide medical practitioners, to AR content for astronomy and welding.



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### Abstract

Finger-worn interfaces are a vastly unexplored space for interaction design. It opens a world of possibilities for solving day-to-day problems, for visually impaired people and sighted people. In this work we present **Eye Ring**, a novel design and concept of a finger-worn device. We show how the proposed system may serve for numerous applications for visually impaired people such as recognizing currency notes and navigating, as well as helping sighted people to tour an unknown city or intuitively translate signage.

The ring apparatus is autonomous, however it is counter parted by a mobile phone or computation device to which it connects wirelessly, and an earpiece for information retrieval. Finally, we will discuss how finger worn sensors may be extended and applied to other domains.

### **INTRODUCTION:**

Despite the attention finger-worn interaction devices have received over the years, there is still much room for innovative design. Earlier explorations of fingerworn interaction devices (some examples are shown in Figure 1) may be divided into a few subspaces according to how they are operated: Pointing [1], [2]; Tapping/Touching [3–5]; Gesturing [3], [6–8]; Pressing/Clicking On-Device [9]. Firstly, we wish to make the distinction between pointing gestures with the finger touching the object and pointing in free air. Our system is based on performing Free-air Pointing (FP) gestures, as well as Touch Pointing (TP) gestures. TP gestures utilize the natural touch sense, however the action trigger is not based on touch sensitivity of the surface, rather on an external sensor. Pointing devices based on TP gestures, as a reading aid for the blind date back to

the Optophone and later the Optacon1.

However, the rise of cheap and small photo-sensory equipment, such as cameras, revolutionized the way lowvision people read or interact with visual interfaces. Recently Chi et al presented Seeing With Your Hand [10], a glove apparatus that uses TP gestures. Other assistive devices that are using imaging technology but not TP gestures are Primpo's iSONIC2 and the i-Cane3 which act both as a white cane and as a visual assistant that can tell the ambient lighting condition and colors of objects. The haptic element of TP gestures is interesting especially in the case of assistive technologies for the visually impaired. This enables them to get additional feedback on the object they want to interact with.

FP gestures on the other hand, are rooted in human behavior and natural gestural language. This was shown to be true by examining gestural languages of different cultures [11]. Usually FP gestures are used for showing a place or a thing in space - a passive action. However, augmenting FP for information retrieval is an interesting extension. Previous academic work in the field of FP gestures, revolved around control [2] and information retrieval [1]. These works and others utilize a specialized sensor, usually an infrared connection, between the pointing finger and the target. This implies the environment to be rigged especially for such interaction. We chose to use a generalized approach by using a general-purpose camera. This choice breaks the bonds of dimensionality of a single signal source or sensor, as well as the bonds of wavelength as it operates in the wider, visible spectrum.



The desire to replace an impaired human visual sense or to augment a healthy one had a strong influence on the design and rationale behind EyeRing. Most of the work around FP and some TP gestures (e.g. the Optical Finger Mouse) are aimed towards sighted people. At the initial stage of this project, we chose to focus on a more compelling aspect of exploring how visually impaired people may benefit from finger-worn devices. In this paper, we describe the EyeRing prototype, a few applications of EyeRing for visually impaired people and some future possibilities. Finally we discuss our plans of extending this work beyond the assistive interfaces domain.

Our proposed system is composed of a finger-worn device with an embedded camera, a computation element embodied as a mobile phone, and an earpiece for information loopback. The finger-worn device is autonomous and wireless, and includes a single button to initiate the interaction. Information from the device is transferred to the computing element where it is processed, and the results are transmitted to the headset for the user to hear. Overview of the EyeRing system is shown in (Figure 2). The current implementation of finger-worn device uses a TTL Serial JPEG Camera, 16 MHz AVR processor, a bluetooth module, 3.7V polymer Lithium-ion battery, 3.3V regulator, and a push button switch.



Figure 2: Overview of EyeRing system

These components are packaged into a wearable ABS nylon casing (Figure 3). Speech processing engine and computer vision engine were implemented on a mobile phone running Android 2.2. A user needs to pair the finger-worn device with the mobile phone application only once and henceforth a Bluetooth connection will be automatically established when both are running. A visually impaired user indicated this as an essential feature. Typically, a user would single click the pushbutton switch on the side of the ring using his thumb (Figure 4). At that moment, a snapshot is taken from the camera and the image is transferred via bluetooth to the mobile phone. An Android application on the mobile phone then analyzes the image using our computer vision engine. Type of analysis and response depends on the preset mode (color, distance, currency, etc.). Upon analyzing the image data, the Android application uses a Text-to- Speech module to read out the information though a headset. Users may change the preset mode by double- Figure 2: Overview of EyeRing system clicking the pushbutton and giving the system brief verbal commands such as "distance", "color", "currency", etc., which are subsequently recognized.

## **Applications For The Visually Impaired**

The task of replacing the optical and nervous system of the human visual sense is an enormous undertaking. Thus, we choose to concentrate on learning the possible interaction mechanics for three specific scenarios outlined in this section.

### 1. Virtual Walking Cane:

Compared to a steel cane, a finger-worn device used for navigation is certainly less obtrusive, as well as fashionable and appealing. The essence of this application is to provide an approximate estimation of the clear walking space in front of the holder of the ring. Users must use FP gestures to take pictures of the space in front of them, by pointing the camera and clicking, with some motion between the shots. In a continuous-shooting mode (video), which is currently not supported in our prototype, there is no need for repeated clicking.

The system clearly notifies the approximate free space in front. For this application, we employ the concept of Structure from Motion (SfM). Upon receiving the two images, an algorithm to recover the depth is performed. The general outline of the algorithm is as follows: (a) the two images are scanned for salient feature points and then affine-invariant descriptors are calculated for them, (b) the features in both images are matched into pairs, (c) the pairs are used to get a dense distance map from the location of the camera in the first photo [12], (d) we use a robust method to fit a model of a floor to the data, and return the distance of the clear walking path in front. By repeatedly taking photos with motion, equivalent of moving a steel cane, we check the recovered 3D mapping of the floor and objects for any obstacles in the way of the user. Figure 5 outlines the above process.

### **2.** Currency Detector:

This application is intended to help the user to identify currency bills (1\$, 5\$, 10\$, 20\$, 100\$) to aid with payments. The interaction process is simple; a user would simply point index finger to a currency note (using a TP gesture then moving the finger back) and click the button. The system will voice out what the note is (Figure 6). A detection algorithm based on a Bag of Visual Words (BoVW) approach [13] scans the image and makes a decision on the type of note it sees. We use Opponent Space [14] SURF features to retain color information, for notes detection. Our vocabulary was trained to be of 1000 features long, and we use a 1-vs.- all SVM approach for classifying the types of notes. For training we used a dataset of 800 images using k-fold crossvalidation, and 100 images withheld for testing. As of writing these lines the overall recognition rate is over 80% with a 0.775 kappa statistic.



**3. Color Detector:** 

This application of EyeRing aids a visually impaired person to understand the color of an object. Again, the user interaction is simple; users simply touch point (TP gesture) to an object and click the button on the ring to deliver an image for processing (Figure 7). The system analyses the image and returns the average color via audio feedback. We use a calibration step to help the system adjust to different lighting conditions. A sheet of paper with various colored boxes is printed, and a picture of it is taken. We rectify the region in the image so that it aligns with the colored boxes, and then extract a sample of the pixels covering each box. For predictions we use a normal distribution, set to the maximum likelihood of the perceived color.

#### **Future** Applications

Eye Ring is still very much a work in progress. Future applications using EyeRing rely on more advanced capabilities of the device, such as real-time video feed from the camera, higher computational power, and additional sensors like gyroscopes and a microphone. These capabilities are currently in development for the next prototype of EyeRing.

#### **Reading Non-Braille:**

Visually impaired people are mostly bound to reading Braille or listening to audio books. However the amount of written material that are in Braille or audio transcribed is limited. The fact remains that natural interaction in our world requires decent visual abilities for reading. This application will allow the visually impaired to read regular printed material using EyeRing. The user simply touches the printed surface with the tip of the finger (TP gesture) and moves along the lines. Naturally, a blind person cannot see the direction of the written lines. For that reason we plan to implement an algorithm to detect the misalignment between the movement of the finger and the direction of the text, correcting the user's movement using the audio feedback

#### **Tourist Helper:**

We plan to extend EyeRing applications to domains beyond assistive technology. For example, tourists visiting a new city often rely on maps and landmarks for navigation. Recently, locationing systems, inertial sensors and compasses in mobile devices, and readily available dense mapping of most major cities, replaced the usage of paper maps. However, even with augmented reality applications such as Layar4, the UI for on-

foot navigation is still cumbersome. Our proposed application relies on a much more natural gesture, such as simply pointing at the wanted landmark, asking "What is that?" and hearing its name.

#### Conclusion

Eye Ring suggests a novel interaction method for both visually impaired and sighted people. We choose to base the interaction on a human gesture that is ubiquitous in any language and culture – pointing with the index finger. This has determined the nature and design of the ring apparatus, location of the camera and trigger. The applications we presented for Eye Ring emerge from the current design. Preliminary feedback received from a visually impaired user supports that Eye Ring assistive applications are intuitive and seamless. We are in the process of conducing a more formal and rigorous study to validate this. One of the biggest challenges is creating the supporting software that works in unison with this unique design.



Krishna Sai,3<sup>nd</sup> CSE (178T1A0525)

# MIND READING COMPUTER

# Why mind reading?

The mind-reading computer system presents information about your mental state as easily as a keyboard and mouse present text and commands. Imagine a future where we are surrounded with mobile phones, cars and online services that can read our minds and react to our moods.

How would that change our use of technology and our lives? We are working with a major car manufacturer to implement this system in cars to detect driver mental states such as drowsiness, distraction and anger.

Current projects in Cambridge are considering further inputs such as body posture and gestures to improve the inference. We can then use the same models to control the animation of cartoon avatars. We are also looking at the use of mind-reading to support on-line shopping and learning systems.

The mind-reading computer system may also be used to monitor and suggest improvements in human-human interaction. The Affective Computing Group at the MIT Media Laboratory is

developing an emotional-social intelligence prosthesis that explores new technologies to augment and improve people's social interactions and communication skills.



# How does it work?

The mind reading actually involves measuring the volume and oxygen level of the blood around the subject's brain, using technology called functional near-infrared spectroscopy (fNIRS).

The user wears a sort of futuristic headband that sends light in that spectrum into the tissues of the head where it is absorbed by active blood-filled tissues. The headband then measures how much light was not absorbed

letting the computer gauge the metabolic demands that the brain is making.

The results are often compared to an MRI, but can be gathered with lightweight, non- invasive equipment. A computer program which can read silently spoken words by analyzing nerve signals in our mouths and throats, has been developed by NASA.

Preliminary results show that using button-sized sensors, which attach under the chin and on the side of the Adam's apple, it is possible to pick up and recognize nerve signals and patterns from the tongue and vocal cords that correspond to specific words.

"Biological signals arise when reading or speaking to oneself with or without actual lip or facial movement," says Chuck Jorgensen, a neuroengineer at NASA's Ames Research Center in Moffett Field, California, in charge of the research. Just the slightest movement in the voice box and tongue is all it needs to work, he says.

# Web search

For the first test of the sensors, scientists trained the software program to recognize six words - including "go", "left" and "right" - and 10 numbers. Participants hooked up to the sensors silently said the words to themselves and the software correctly picked up the signals 92 per cent of the time.

Then researchers put the letters of the alphabet into a matrix with each column and row labeled with a singledigit number. In that way, each letter was represented by a unique pair of number co-ordinates. These were used to silently spell "NASA" into a web search engine using the program.



shiva (178T1A0540),3rd CSE-A

# **AIR TRAFFIC CONTROL SYSTEM**

Air traffic control systems are various aircraft navigation and communication systems that uses computers, radar, radios and other instruments and devices to provide guidance to flying aircraft. Trained personnel working as air traffic controllers at stations on the ground constantly monitor these systems and track the locations and speed of individual aircraft. Controllers can warn aircraft should they come too close to each other. The goal of air traffic control system is to minimize the risk of aircraft collisions while maximizing the number of aircraft that can fly safely at the same time. Air traffic control systems also provide updated weather information to airport around the country, so aircraft can take off and land safely. This information is important not only to airline passengers but also to industries that rely on aviation for the timely transport of goods, materials and personnel.

Air traffic control (ATC) is a service provided by ground-based controllers who direct aircraft on the ground and through controlled airspace, and can provide advisory services to aircraft in non-controlled airspace. The primary purpose of ATC worldwide is to prevent collisions, organize and expedite the flow of traffic, and provide information and other support for pilot's .In some countries, ATC plays a security or defensive role, or is operated by the military.



To prevent collisions, ATC enforces traffic separation rules, which ensure each aircraft maintains a minimum amount of empty space around it at all times. Many aircraft also have collision avoidance systems, which provide additional safety by warning pilots when other aircraft get too close.

In many countries, ATC provides services to all private, military, and commercial aircraft operating within its airspace. Depending on the type of flight and the class of airspace, ATC may issue instructions that pilots are required to obey, or advisories (known as flight information in some countries) that pilots may at their discretion, disregard. Generally the pilot in command is the final authority for the safe operation of the aircraft and may in an emergency, deviate from ATC instructions to the extent required to maintain safe operation of their aircraft. Air traffic control systems are various aircraft navigation and communication systems that use computers, radar, radios, and other instruments and devices to provide guidance to flying aircraft. Trained personnel working as air traffic controllers at stations on the ground constantly monitor these systems and track the locations and speeds of individual aircraft. Controllers can warn aircraft should they come close to each other. Air traffic control system is also used for the safe coordination of landing and takeoffs at airport.goal of air traffic control is to minimize the risk of aircraft collisions while maximizing the number of aircraft that can fly safely at the same time. Aircraft pilots and their onboard flight crews work closely with controllers to manage air traffic. Air traffic control systems also provide updated weather information to airport around the country, so aircraft can take off and land safely. This information is important not only to passengers but also to industries that rely on aviation for the timely transport of goods, materials and personnel.



The go **Dhanujay** (178T1A0545) 3rd CSE-A

# FACE BOOK CASSANDRA

Cassandra is a column oriented, eventually consistent, distributed storage system for managing very large amounts of structured data. The Cassandra system was designed to run on cheap commodity hardware and handle high write throughput while not sacrificing read efficiency.

### What is eventually consistent?

Building reliable distributed systems on a global scale demands trade-offs between consistency and availability .Consistency in a nutshell means that when something is written, it is expected that all reads after the write will have access to that written data. In Cassandra, due to its distributed nature, there are no such hard guarantees. However, we can say that it eventually reaches a consistent state because all data is eventually replicated across the distributed data store.



Cassandra was designed with the understanding that system/hardware failures will and do occur. Due to this, Cassandra was developed as a peer to peer distributed system where all nodes serve the same functions, meaning there is no single point of failure. One of Cassandra's greatest strength is its availability and scaling, it achieves this through a fully distributed system where data is replicated across multiple nodes according to user settings.

Data reading and writing is abstracted away from the application, which allows the application to read/write to any node in the system and always expect that the data is replicated across multiple nodes. According to the tunable consistency setting, the user can also achieve complete consistency, a compromise of consistency and speed, or little to no consistency.



Cassandra is a robust solution for those requiring a reasonably consistent, highly available, and scalable faulttolerant data store. Cassandra is also a great solution for those migrating from relational databases to No SQL due to the Cassandra Query Language, which is essentially a subset of SQL, making Cassandra more accessible than competitors. Cassandra maintains itself as a leader in speed and efficiency within the No SQL domain, so if the goal is to create an application with intensive and quick reads and writes, then Cassandra is the ideal solution.



#### A. Swathi,3rd cse,(188T1A0501)

# **ZIGBEE TECHNOLGY**

ZigBee is the name of a specification for a suite of high level communication protocols using small, lowpower digital radios. The technology is intended to be simpler and cheaper than other WPANs such as Bluetooth. The most capable ZigBee node type is said to require only about 10% of the software of a typical Bluetooth or Wireless Internet node. The estimated cost of the radio for a ZigBee node is about \$1.10 to the manufacturer in very high volumes. Most ZigBee solutions require an additional microcontroller driving the price further up at this time.

ZigBee is the newest and provides specifications for devices that have low data rates, consume very low power and are thus characterized by long battery life. Other standards like Bluetooth and IrDA address high data rate applications such as voice, video and LAN communications.



The target networks encompass a wide range of devices with low data rates in the Industrial, Scientific and Medical (ISM) radio bands, with building-automation controls like intruder/fire alarms, thermostats and remote (wireless) switches, video/audio remote controls likely to be the most popular applications. So far sensor and control devices have been marketed as proprietary items for want of a standard. With acceptance and implementation of ZigBee, interoperability will be enabled in multi-purpose, self- organizing mesh networks.

When you hold the TV remote and wish to use it you have to necessarily point your control at the device. This one-way, line-of-sight, short-range communication uses infrared (IR) sensors to enable communication and control and it is possible to operate the TV remotely only with its control unit. Add other home theatre modules, an air- conditioner and remotely enabled fans and lights to your room, and you become a juggler who has to handle not only these remotes, but also more numbers that will accompany other home appliances you are likely to use. Some remotes do serve to control more than one device after "memorizing' access codes, but this interoperability is restricted to LOS, that too only for a set of related equipment, like the different units of a home entertainment system.

Now picture a home with entertainment units, security systems including fire alarm, smoke detector and burglar alarm, air-conditioners and kitchen appliances all within whispering distance from each other and imagine a single unit that talks with all the devices, no longer depending on line-of-sight, and traffic no longer being one-way. This means that the devices and the control unit would all need a common standard to enable intelligible communication. ZigBee is such a standard for embedded application software.



#### 2nd CSE-A

# CLOUDDROPS

# Abstract

CloudDrops is a pervasive awareness platform that integrates virtual information from the Web more closely with the contextually rich physical spaces in which we live and work. CloudDrops consists of many interactive stampsized displays, each showing a tiny bit of digital information. The large number of displays and their small size allows the user to flexibly instrument, orchestrate and reconfigure her personal information environment. We show different form factors for stamp-sized displays, provide a device concept and a first implementation.

We propose lightweight visualizations and interaction techniques that are tailored to the tiny device form factor. Moreover, we contribute techniques for associating these small displays with content that the user wants to stay aware of, including Web pages, contacts, and places. To demonstrate the capabilities of the platform, we present several application examples. A user study provides first insights into how CloudDrops enable users to create a personalized information environment by distributing stamp-sized displays over the entire architectural space.

#### **INTRODUCTION:**

People intensively use physical space for accessing and remembering paper-bound information [9]. Transforming large parts of our formerly physical information environment into the digital realm has its obvious advantages that cannot be underestimated; but this also comes at a cost: we are giving up the notion of having an information item at a meaningful place and of using our entire surroundings for managing information. Recent advances in pervasive display technologies enable high-resolution yet tiny, stamp-sized touch-displays that include processing power and networking capabilities. These self-contained devices are capable of displaying tiny information bits while being tangible and highly mobile, such that they can be situated at virtually any location.



This opens up a physical design flexibility for awareness systems, which largely overcomes the possibilities of using a handheld device (such as a smartphone) or a static installation (such as a large screen or a projector). The enduser can flexibly arrange the set of stamp-sized displays, locate them at meaningful places and thereby easily instrument, orchestrate and reconfigure his or her personal information environment, to stay aware of digital information. However, making use of such tiny displays for awareness applications poses various challenges.

This includes the questions of how content should be mapped to displays, how it should be visualized on the tiny displays, and how the user can interact with content. It is also unclear how several displays can be used in concert and how displays can be combined with physical artifacts to support situated awareness. We address these challenges and contribute CloudDrops, an interactive awareness platform that consists of many

stampsized displays, which provide awareness of websites, contacts and places. The end-user can scatter the displays throughout the architectural space, to ensure each piece of information is available at a meaningful physical location.

Each display represents one user-defined digital entity: a Web page, contact or place. CloudDrops provide visualizations that can be perceived at a glance such that the user can skim changes of Web pages, contacts and places by visually browsing through physical space.

In addition, CloudDrops provide lightweight interactions. Based on a 6-dimensional holistic view on the platform, we provide the following contributions:

- We propose different form factors for stamp-sized pervasive displays, provide a device concept and a first implementation.

- We provide visualizations and interactions for Web pages and Web applications that are tailored to the tiny display size. In addition, we show how CloudDrops can support synchronous and asynchronous communication with remote persons.

In contrast to static installations, tangible tokens do not suffer from high initial costs and can easily be moved around. There is a variety of work in this area. Passive tokens were used as tangible bookmarks, as reminders or for physically representing data. Plink uses passive paper and a digital pen for creating written links to digital data. Other work proposed tokens that can give visual feedback using a lowresolution display (max. 8x8 pixels). A class of work even proposed high-resolution displays. However these only work on surfaces with a small surface area (e.g. tables) and cannot be used in the entire architectural space. To overcome this limitation, previous work suggested projection based solutions and wall-sized displays. Inspired by Mark Weiser's vision of populating rooms with inch-scale, interconnected displays [29], CloudDrops integrate the physical flexibility of tiny, tangible displays into awareness systems, supporting flexible physical orchestration of Web-based information.

#### DESIGN CONSIDERATIONS

The design of an awareness platform consisting of stampsized displays that are situated in architectural space offers degrees of freedom in various dimensions. In this section, we provide an overview of the main design dimensions, which are used as the foundation for the CloudDrops platform. The design considerations are illustrated in Fig. 2.

### Shape & Size

CloudDrops can come in a variety of shapes and sizes. The size of the display results as a trade-off between mobility and the amount of content that needs to be displayed. Custom shapes for CloudDrops allow for novel affordances (e.g., a round shape supports interactions based on rotation) but can also provide a symbolic meaning. Consider for instance a CloudDrop in the shape of a heart to indicate that the display shows content related to a loved one. In order to make CloudDrops attachable to a wide variety of surfaces with different material characteristics, we propose their backside to be magnetic, sticky or pinnable.

### Dynamic Content

CloudDrops represent dynamic digital content, such as websites and documents or contacts. Thereby, each individual content is represented as a separate CloudDrop. This allows the user to flexible attach each item on a physical place. In the other direction, it makes a physical place accessible remotely to provide situated messaging and communication

#### Association with Content

A CloudDrop is associated with a piece of dynamic digital data and shows its dynamics. Bringing this information onto the CloudDrop is somewhat challenging, since the tiny display size makes conventional information search hard if not impossible. Inspired by previous work [9, 33], we propose three ways in which CloudDrops can be associated with content:

(1) Content from a nearby device with a larger screen (e.g., a PC, tablet, or smartphone) is associated with a CloudDrop by using a simple gesture.

2) The CloudDrop recognizes the object or surface it is attached to and displays dynamic situated information related to this object or surface.

(3) Content is defined by one or more CloudDrop in the proximity, which together form a group.

We will provide more details and examples for each of these associations below.



We realized the concept of a CloudDrop in two working prototype versions (Fig. 3). Each emphasizes different aspects of the concept of a CloudDrop. In order to visualize and interact with information from the cloud, a CloudDrop contains a small touch-sensitive display. The display is big enough to show a small piece of information, which can be consumed at a glance. Users can personalize the appearance of a CloudDrop with custom casings. As examples, we chose a drop shape and a more neutral square shape. Similarly to how magnets are used on whiteboards or fridges, a CloudDrop can be attached to various objects, sticking to them with its magnet and adding additional information to those objects.



Figure 3: CloudDrop prototypes.

Our prototype B has a camera on the backside (see Fig. 3 reverse side), which is used for easy association between the CloudDrop and the underlying object by taking a picture of the object. While a CloudDrop can be used on its own, as a tiny drop, CloudDrops are often used in groups. A "puddle" of CloudDrops can act as a bigger, coherent entity, for instance to provide more detailed information or to provide increased visibility for notifications. Our prototype B is capable of recognizing nearby CloudDrops.

### Implementation

In our prototypical implementation, each CloudDrop has a full-color touch-sensitive screen with a diagonal of 1.5 inches and a resolution of 160x160px. It features a 600Mhz processor, a built-in accelerometer and WIFI connectivity, and an RFID tag attached. Prototype A weighs 32 grams and measures 2.1x2.9x0.5 inches. Prototype B weighs 73 grams and measures 2.1x2.1x1.25 inches. It features an infrared sensor on each side with a maximum range of 4cm for neighbor detection. Once a neighbor is detected, they exchange their ID

and the side along which they are facing each other via a custom infrared protocol. All CloudDrops are connected to a central server. Other computing devices recognize a nearby CloudDrop using an RFID reader. The rechargeable battery lasts for approx. 8 hours during typical usage. Our implementation is compatible with standard Web protocols and major application platforms. CloudDrops can display and interact back with content from Web pages, Gmail, GoogleDocs and Skype. For associations with the Google Chrome browser and Skype, the nearby computing device runs a client application that communicates with the CloudDrops web server.

#### CONCLUSION

We presented a platform for situated awareness of and interacting with Web-based information. Our findings show that by scattering CloudDrops throughout the architectural space, people design a highly personalized and highly localized physical/digital information environment that supports awareness of persons, websites and applications, as well as interpersonal communication. Future work should examine in more detail how people use tiny displays in architectural space over extended periods of time.



D.Rehana,168T1A0561,

V/IV B.Tech

# **Rover Mission Using JAVA Technology**

Man who is a good explorer by nature is trying to invade his next planet, the Mars, with the help of JAVA enabled rovers. Both JAVA and rovers are wonders created by man.

Java technology today is good for general purpose computing and GUIs, but it was not ready for use with control systems like the software on the Rover. The Golden Gate project seeks to use RTSJ (Real Time Specification for JAVA) to develop a system of control software that can be used on a Rover.

The places where NASA scientists have used Java for this mission is all on the groundside right now. They have created this collaborative command and control system called Maestro, which does this combination of data visualization, collaboration, command and control.

Java RTS enables developers of real-time applications to take full advantage of the Java language ecosystem while maintaining the predictability of current real-time development platforms. Java RTS also brings the world of real-time programming to developers currently using Java technology to create applications that reach into the physical world.

Golden Gate project is being worked on which will create code that would replace the proprietary APIs and real-time operating system code (Wind River) in future missions. Java 3D and Java Advanced Imaging technology are also key to the software JPL (Jet Propulsion Laboratory) is using to render and interpret real time images captured by the Rover.

JAVA, due to its unique features like, platform independency, rich set of API libraries such as 3-D modeling APIs, Advanced Imaging APIs and its Mission Data System to control physical systems fuelled the Mars exploring rover mission.

NASA's twin Mars rovers, Spirit and Opportunity, are exploring opposite sides of the Red Planet to search for evidence of past or present water and to map its geological and climate history. On Jan. 3, 2004, the Spirit rover landed in Gusev Crater on Mars, kicking off a mission planned to last 90-days. Two years later, Spirit and fellow robotic explorer Opportunity, which landed Jan. 24, 2004, are still going strong. Each Martian morning, the rovers receive a full day of instructions. They operate autonomously all day, and transmit the resulting images and data back to earth at the end of the day. The operations staff lives on "Mars time", each day is approximately 24 hours, 40 minutes. Planning is done during the Martian night, and there are strict deadlines for the uplink of new rover instructions.

The places where NASA scientists have used Java for this mission is all on the groundside right now. They have created this collaborative command and control system called Maestro, which does this combination of data visualization, collaboration, command and control. In the current mission, the software used on the ground to create commands to send to the Rover, and the control software that actually sits on the Rover, are two very different systems with nothing in common whatsoever. What's being used up on the Rover is a well-known real-time operating system from Wind River Systems. Golden Gate is being worked upon which will create code that would replace the proprietary APIs and real-time operating system code (Wind River) in future missions. Sun Labs, Carnegie Mellon-West, a campus of Carnegie Mellon located near Sun Labs in Silicon Valley, and the Jet Propulsion Labs (JPL) are working together on this project.

### Mars Exploration Rovers Mission

- Twin robot geologists search for past running water
- Launched: June 10 & July 7, 2003
- Landed: January 3 & 24, 2004
- Duration: 90+ days (extended mission could run through September 2004)
- Mission Center: Jet Propulsion Laboratory Pasadena, CA



Work is being done on implementation of a software architecture developed at JPL calledMDS, or Mission Data System. Greater commonality is being created between the flight system on the Rover and the ground system -- all essentially using Real-Time Specification for Java (RTSJ), and a more seamless development environment for the entire system. Java language pioneer James Gosling calls the ground-side control system that sent signals to the Mars Rover," the coolest Java app ever".

Mars Exploration Rovers Mission

### CONCLUSION

We all know how JAVA emerged from the hands of Gosling's team who were trying to program an application which could work efficiently on electronic devices. It was a success and soon java spread over the world due to its unique feature, platform independency to be used in web applications. Now JAVA and its rich set of API are even helping us drive to our next planet MARS.

Now we have two rovers on mars each exploring the red planet. These are working efficiently since January 2004 only with the help of the best ground control system powered by JAVA.

Sun is working to implement java in physical systems like rovers and power plants .Sensing plays a key role in these projects. This could be considered a mile stone in the fields of Artificial Intelligence and Robotics.



N.Gayatri,168T1A0545,IV/IV B.Tech

# **Department Activities**

The Department of Computer Science Engineering had conducted a PARENTS MEET on 27 - 07 - 2019 for 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year students of CSE. The Parents meet was conducted at the CSE department seminar hall which started at 02:00 PM and completed by 04:30 PM.Head of the Department Dr. S. Suresh, addressed the parents for an hour addressing different activities, policies and procedures following in the department with an insight on students class tests, remedial tests, R&D activities, Coding club activities, Association Activities and also on the different placement and training activities in the department and different certification courses imparted and also about the industry interaction via

Internships, industrial visits later parents interacted with the respective class in charges, counselors and the subject teachers and collected suggestions and feedback forms from parents





Dept of CSE celebrated The Department of Computer Science Engineering had organized Guest Lecture on "Intenet of Things & Advancements" on 16-9-2019 on the eve of "World Engineers Day". Geust Speaker Dr.Md. Asdaque Hussain, R&D Dean, KL University



Guest Lecture on "Intenet of Things & Advancements" on the eve of "World Engineers Day"



Geust Speaker Dr.Md.Asdaque Hussain, R&D Dean, KL University started session on "Intenet of Things & Advancements"



Felicitating Guest speaker from CSE Department.

Student Keynoting Guest Dr.Md.Asdaque Hussain, R&D Dean, KL University by telling Bio-data .



Students participation on Guest Lecture



Saying Vote of Thanks to Guest for knowledge sharing.

# **Teachers day celebrations**

### Teachers Day Celebrations @CSE: A moment of joyful rededication...

CSE celebrated Teachers Day with traditional fervor and gaiety by paying rich tributes to Master Teacher &Statesman, Dr. Sarvapalli Radha krishnan on his 131<sup>th</sup> Birthday on 5<sup>th</sup> Sept'19. Our Beloved principal Dr.K.Ravi Presented Best Teacher Award to Faculty of CSE Department Mr K.Sandeep in recognition of their meritorious service to teaching.



### ORIENTATION PROGRAM FOR FRESHERS DAWN OF AN EXCITING JOURNEY !!!

The newly admitted students of B.Tech Programme of the A.C.Y.2019 were welcomed into the portals of our beautiful center of learning in an impressive induction program on 13<sup>st</sup>Sep'19. The program was inaugurated by Sri.Dr.S.Suresh HOD& Prof of CSE, Sri.Dr.A.Srinivasa Rao, HOD gave an exhaustive and insightful orientation to the inductees. Among others, faculty and staff as well as students attended the program



### **Real time learning** *@* **Python Training Program**

The Department of CSE organized training program on "Python Programming" for III year students during the period i.e.30-9-2019to1-10-2019. Sri D. Brahmesh, System Engineer, Infosys Technologies, Bangalore imparted Message on What is python programming, purpose & impotence of python programming ,Need& its applications of python. HOD of CSE and other faculty members coordinated the program.



### **CODING CLUB**

In today's rapidly changing environment, programming skills are essential tools that can be utilized and incorporated into various fields and domains. Hence, it becomes absolutely essential to equip young minds with such skills. Coding Club aims to establish a coding culture on campus, reaching every student passionate about coding. The club's motto is to Create-Build-Innovate

The Department of cse conducting coding club. The club meets every week to discuss and work on projects. All the members collaborate to achieve a common objective. Lecture sessions are also organized for the benefit of members, where some concepts of computer science are taught. The club conducts a department wise coding competition every year to recruit the students who are passionate about coding. The competition not only focuses on coding but also on logical, analytical and problem solving skills.



Students receiving appreciation letters of coding club



A 2- Day National level fest was conducted at college level during the period of 20 &21<sup>st</sup> December 2019.dept of CSE conducted several technical events like paper presentation, theme ballet, code hunt, technical quiz, keyword search etc..



### **Exploring practical learning@skill development Program in cse**

The Department of CSE organized Designing Thinking Program during '6th &7th January, 2020. Dr.K.Ravi Principal of Diet, inaugurated the program ,students and faculty are attended that program



**PROJECT EXHIBITION** was organized by the Department of Computer Science & Engineering, on 19th Feb, 2020. Final year students are participating in this exhibition The Major objective of organizing this exhibition was to provide the platform and unleash the potential of the students by showcasing their innovative projects developed in the Final Year either as Industry Defined Problem or User Defined Problem and provide an opportunity for the students to demonstrate their learning experience. PROJECT EXHIBITION held in the institution proves to be a great platform for such students and for the presentation of their talent. The students speak about their projects in front of everyone and develop public speaking skills. It boosts the confidence of the students and outshines their personality. The inaugural of the project exhibition witnessed the presence of Dr. Ravi Kadiyala, principal, DIET, along with the faculty and staff members of Department of CSE, DIET. Prof. Suresh S, HOD, CSE Department formally welcomed the principal of DIET, Dr. Ravi Kadiyala, principal, DIET, in his motivational address emphasized on the importance of learning new technologies and tools for the students. Prof. Suresh S, HOD, CSE, shared his valuable knowledge among the students highlighting the importance of project making.



# Motivational Speech by @Dr.T.Hanuman Chowdary Dr.T.Hanuman Chowdary is the author of former Information Technology Advisory to the Government of

Dr.T.Hanuman Chowdary is the author of former Information Technology Advisory to the Government of Andhra Pradesh. he addressed the students of 3rd yr cse and he gave his valuable speech for students on recent technology updation.





**farewell party** Farewell Day Celebrations 3rd year students of cse gave Farewell for final year students on march 15th 2019. final year students share their lot of academic experiences







#### PARENTS MEET

The Department of Computer Science Engineering had conducted a PARENTS MEET on 15-02-2020 for 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year students of CSE. The Parents meet was conducted at the CSE department seminar hall which started at 02:00 PM and completed by 04:30 PM.

Head of the Department Dr. S. Suresh, addressed the parents for an hour addressing different activities, policies and procedures following in the department with an insight on students class tests, remedial tests, R&D activities, Coding club activities, Association Activities and also on the different placement and training activities in the department and different certification courses imparted and also about the industry interaction via Internships, industrial visits later parents interacted with the respective class in charges, counselors and the subject teachers and collected suggestions and feedback forms from parents.



The department of CSE has utilised the Lockdown period for effective implementation of various academic activities through online mode of teaching. The Faculty have completed the pending syllabus in the lockdown period using online teaching methods.



# Industrial visits

Dept. of CSE Organized a local industrial visit

- for 2 <sup>nd</sup> yr students of cse to visit Securities and Exchange Board of India on 23<sup>rd</sup>Sep'2019
- for 3<sup>rd</sup> yr students Green Bud Software technologies on 19<sup>th</sup> Sep'2019

for 4<sup>th</sup> yr students Medha Towers kloud Maaya on 25<sup>th</sup> Sep'2019



# FACULTY CORNER STAFF ARTICLES

# **An Overview of Soft Computing**

**Soft computing** is an emerging approach to computing that gives the remarkable ability of the human mind to argue and learn in the atmosphere of uncertainty and distrust.

Soft computing is based on some biological induced methods such as genetics, development, ant behavior, the warm of particles, the human nervous system, etc.



Now <u>Soft Computing</u> is the only solution when we do not have any mathematical modeling of problem- solving

(i.e., algorithm), in real-time, there is a need to solve a complex problem, adapt with the changed scenario and be implemented with parallel computing. It has massive applications in many application zones such as medical diagnosis, computer vision, machine intelligence, weather forecasting, network optimization, LSI design, pattern recognition, handwritten character improvement etc.

Soft computing, as opposed to traditional computing, deals with approximate models and gives solutions to complex real-life problems. Unlike hard computing, soft computing is tolerant of imprecision, uncertainty, partial truth, and approximations. In effect, the role model for soft computing is the human mind. Soft computing is based on techniques such as fuzzy logic, genetic algorithms, artificial neural networks, machine learning, and expert systems. Although soft computing theory and techniques were first introduced in 1980s, it has now become a major research and study area in automatic control engineering. The techniques of soft computing are nowadays being used successfully in many domestic, commercial, and industrial applications. With the advent of the low-cost and very high performance digital processors and the reduction of the cost of memory chips it is clear that the techniques and application areas of soft computing will continue to expand. This paper gives an overview of the current state of soft computing techniques and describes the advantages and disadvantages of soft computing compared to traditional hard computing techniques.

Soft computing (SC) is a branch, in which, it is tried to build intelligent and wiser machines. Intelligence provides the power to derive the answer and not simply arrive to the answer. Purity of thinking, machine intelligence, freedom to work, dimensions, complexity and fuzziness handling capability increase, as we go higher and higher in the hierarchy as shown in Fig. 1.1. The final aim is to develop a computer or a machine which will work in a similar way as human beings can do, i.e. the wisdom of human beings can be replicated in computers in some artificial manner.

Intuitive consciousness/wisdom is also one of the important area in the soft computing, which is always cultivated by meditation. This is indeed, an extraordinary challenge and virtually a new phenomenon, to include consciousness into the computers.

Soft computing is an emerging collection of methodologies, which aim to exploit tolerance for imprecision, uncertainty, and partial truth to achieve robustness, tractability and total low cost. Soft computing methodologies have been advantageous in many applications. In contrast to analytical methods, soft computing methodologies mimic consciousness and cognition in several important respects: they can learn from experience; they can universalize into domains where direct experience is absent; and,

through parallel computer architectures that simulate biological processes, they can perform mapping from inputs to the outputs faster than inherently serial analytical representations. The trade off, however, is a decrease in accuracy. If a tendency towards imprecision could be tolerated, then it should be possible to extend the scope of the applications even to those problems where the analytical and mathematical representations are readily available. The motivation for such an extension is the expected decrease in computational load and consequent increase of computation speeds that permit more robust system (Jang et al. 1997).

### Importance of Soft Computing

The supplementation of FL, NC, GC, and PR is an important result: In many cases, any problem can be solved most effectively by using FL, NC, GC and PR rather than specially in combination. A great example of a particularly effective combination is known as "Neurofjie System". Such systems are increasingly seen as a consumer product ranging from air conditioners and washing machines to photocopiers and camcorders. There are less visible but perhaps even more important Neurofjie systems in industrial applications. It is especially important that in both consumer products and industrial systems, the use of soft computing technologies leads to systems that have high MIQ (Machine Intelligence

Quota).

### Application Soft computing

#### There are various Applications of Soft Computing are:

- Consumer appliance like AC, Refrigerator, Heaters, Washing machine. Robotic works in the form of Emotional Pet robots.
- Food preparation devices are Microwave and Rice cookers.
- For amusing gaming playing product like Checker and Poker etc.
- Recognition for Handwriting.
- Data compression/Image Processing
- For Architecture
- System to Decision-support
- Polymer Processing
- Architectures Engineering
- Applied Mathematics Engineering
- Intelligent Instrumentation
- Turning for Cutting Tools

#### Some stunning Application areas of Soft Computing are:

- Agricultural Production Engineering
- Medicine and Biology Application
- Construction and Design Engineering
- Computer Engineering
- Sin Forecasting
- Computational Process
- Natural Environmental Engineering
- Fault-Tolerance
- Machine Learning
- Signal processing
- Mechanical engineering
- Disease diagnosis
- Nano Technology
- Pattern Recognition

### By P.Sunitha, Asst.Prof, Dept of CSE

# **DNA** Computing

DNA (Deoxyribose Nucleic Acid) computing, also known as molecular computing is a new approach to massively parallel computation based on groundbreaking work by Adelman. DNA computing was proposed as a means of solving a class of intractable computational problems in which the computing timecan grow exponentially with problem size (the 'NP- complete' or non-deterministic polynomial time complete problems).

A DNA computer is basically a collection of specially selected DNA strands whose combinations will result in the solution to some problem, depending on the problem at hand. Technology is currently available both to select the initial strands and to filter the final solution. DNA computing is a new computational paradigm that employs (bio)molecular manipulation to solve computational problems, at the same time exploring natural processes as computational models. In 1994, Leonard Adelman at the Laboratory of Molecular Science, Department of Computer Science, University of Southern California surprised the scientific community by using the tools of molecular biology to solve a different computational problem.



The main idea was the encoding of data in DNA strands and the use of tools from molecular biology to execute computational operations. Besides the novelty of this approach, molecular computing has the potential to outperform electronic computers.

For example, DNA computations may use a billion times less energy than an electronic computer while storing data in a trillion times less space. Moreover, computing with DNA is highly parallel: In principle there could be billions upon trillions of DNA molecules undergoing chemical reactions, that is, performing computations, simultaneously.

### **Principles of DNA Computing**

DNA is the major information storage molecule in living cells, and billions of years of evolution have tested and refined both this wonderful informational molecule and highly specific enzymes that can either duplicate the information in DNA molecules or transmit this information to other DNA molecules. Instead of using electrical impulses to represent bits of information, the DNA computer uses the chemical properties of these molecules by examining the patterns of combination or growth of the molecules or strings. DNA can do this through the manufacture of enzymes, which are biological catalysts that could be called the 'software', used to execute the desired calculation.

A single strand of DNA is similar to a string consisting of a combination of four different symbols A G C T. Mathematically this means we have at our disposal a letter alphabet,  $\Sigma = \{A \ GC \ T\}$  to encode information which is more than enough considering that an electronic computer needs only two digits and for the same purpose. In a DNA computer, computation takes place in test tubes or on a glass slide coated in 24K gold. The input and output are both strands of DNA, whose genetic sequences encode certain information. A program on a DNA computer is executed as a series of biochemical operations, which have the effect of synthesizing, extracting, modifying and cloning the DNA strands.

B.Swathi, Asst.Prof, Dept of CSE

# **Digital Light Processing**

Digital Light Processing is the one of primary display technologies driving this rapid growth and maturation .it is a revolutionary way to project and display information based on the Digital Micro Mirror Device (DMD) Digital Light processing was invented in 1987 by Texas Instruments it creates the final link to display digital visual information.

Digital Light Processing creates deeper blacks, conveys fast moving images very well and uses a single, replaceable, white -light bulb . it is available in both front-and rear-projection models DLP is an excellent choice for people who watch a lot of sports or fast-action movies because of the speed at which it creates an image.

### **DLP Structure**

A Digital Micro Mirror Device chip is the heart of Digital Light Processing projector, DMD can be described simply as a semiconductor light switch. The micro mirrors are mounted on the DMD chip and it tilts in response to an electrical signal. The tilt directs light toward the screen, or into a "light trap" that eliminates unwanted light when reproducing blacks and shadows. Other elements of a DLP projector include a light source, a color filter system, a cooling system, illumination and projection optics.



A DLP based projector system includes memory and signal processing to support a fully digital approach. Depending on the application, a DLP system will accept either a digital or analog signal. Analog signals are converted into digital in the DLPs front –end processing. Any interlaced video signal is converted into an entire picture frame video signal through interpolative processing. The signal goes through DLP video processing and becomes progressive Red (R), Green (G) and Blue (B) data. The progressive RGB data is then formatted into entire binary bit planes of data.

U.Sireesha, Asst, Prof, Dept of CSE

# **Phishing Technology**

In the field of computer security, phishing is the criminally fraudulent process of attempting to acquire sensitive information such as usernames, passwords and credit card details, by masquerading as a trustworthy entity in an electronic attempting to acquire sensitive information such as usernames, passwords and credit card details, by masquerading as a trustworthy entity in an electronic communication. Phishing is a fraudulent e-mail that attempts to get you to divulge personal data that can then be used for illegitimate purposes.



There are many variations on this scheme. It is possible to Phish for other information in additions to usernames and passwords such as credit card numbers, bank account numbers, social security numbers and mothers maiden names. Phishing presents direct risks through the use of stolen credentials and indirect risk to institutions that conduct business on line through erosion of customer confidence. The damage caused by phishing ranges from denial of access to e-mail to substantial financial loss.



U.Sirisha, Asst.Prof,Dept of CSE

# **Rover** Technology

Location-aware computing involves the automatic tailoring of information and services based on the current location of the user. We have designed and implemented Rover, a system that enables location-based services, as well as the traditional time-aware, user-aware and device-aware services. To achieve system scalability to very large client sets, Rover servers are implemented in an action-based concurrent software architecture that enables fine-grained application-specific scheduling of tasks. We have demonstrated feasibility through implementations for both outdoor and indoor environments on multiple platforms.

A user is shopping in a mall. On entering a store, he pulls out a PDA and browses through detailed information about the products on display. Satisfied with the information, through the PDA, he makes an online purchase of the items of interest that will be subsequently shipped to his home directly. As he walks on to the next store, which happens to be a

video rental store, information on newly-released movies in his favorite categories are downloaded automatically into his PDA, along with their availability information. He chooses a couple of these movies and indicates that he will pick them up at the storefront.



### LOCATION AWARE COMPUTING COMES OF AGE

At the core of invisible computing is context awareness, the concept of sensing and reacting to dynamic environments and activities. Location is a crucial component of context, and much research in the past decade has focused on location-sensing technologies, location-aware application support, and location-based applications. With numerous factors driving deployment of sensing technologies, location-aware computing may soon become a part of everyday life.

#### LOCATION-SENSING TECHNOLOGIES

A central problem in location-aware computing is the determination of physical location. Researchers in academia and industry have created numerous location-sensing systems that differ with respect to accuracy, coverage, frequency of location updates, and cost of installation and maintenance.

# By Y.Salini, Asst. Prof, Dept of CSE Faculty Achivements

The Management of Dhanekula Institute Of engineering & Technology encourages the faculty to actively participate Various FDP's, Conferences and other related workshops. Faculty were also encouraged to do MOOCS courses like NPTEL etc, to upskill their knowledge and expertise. Faculty will be reimbursed the registration fee for the above mentioned activities as per the norms of Dhanekula Institute Of engineering & TechnologyManagement



# Faculty Participated FDP'/ Workshops/ Seminars A.Y:2019-20

| S.no | Name of Faculty    | Name Of workshop/FDP attended     | Venue   | No of days From-To                         |
|------|--------------------|-----------------------------------|---------|--|
|      |                    | Discrete Mathematics (NPTEL)      | Online  | 12 weeks(July-Oct)                         |
|      |                    | R programming                     | online  | 9-11-2019(1day)                            |
|      |                    | Five Day Faculty Development      | ONLINE  | 5 DAYS 23/05/2020                          |
|      | Mr DV Hari Dragad  | Program On Cyber Security         |         | TO 27/05/2020                              |
| 1    | MILP V Hari Prasad | Five Day Faculty Development      | ONLINE  | 5 DAYS 01/06/2020                          |
|      |                    | Program On Iot - Applications     |         | TO 05/06/2020                              |
|      |                    | Faculty Development Program On    | ONLINE  | 1 MONTH 1 <sup>st</sup> June to            |
|      |                    | Data Science                      |         | 30 <sup>th</sup> June 2020                 |
|      |                    | Joy Of Computing Using Python     | Online  | 12 weeks(July-Oct)                         |
|      |                    | Python for data science           | Online  | 12 weeks(July-Oct)                         |
|      |                    | Artificial Intelligence           | VVIT    | 23 <sup>rd</sup> -28 <sup>th</sup> Sep2019 |
|      |                    |                                   |         | 1 week(5)                                  |
|      |                    | R programming                     | online  | 9-11-2019(1day)                            |
|      |                    | Programming For Everybody         | Online  | 7 Weeks(April-May)                         |
| 2    | Mrs V Swathi       | Data Sciences in Python           | Online  | 7 Weeks(April-May)                         |
| 2    | Wits. V Swatin     | Knowledge Sharing on A to Z of    |         | 30th May                                   |
|      |                    | Journal Publications              | Online  | 2020day(1day)                              |
|      |                    | Research article writing and      | Online  | 13th June,2020(1day)                       |
|      |                    | publishing in good impact journal |         |  |
|      |                    | Virtual Interactive classroom for | Online  | 5th June2020(1day)                         |
|      |                    | Teachrs and Challeng Technologies |         |  |
|      |                    | In Post covid-19 era              | Onling  | 14th inno 2020(1 dox)                      |
|      |                    | 19                                | Online  | 14th June 2020(10ay)                       |
|      |                    | Joy Of Computing Using Python     | Online  | 12 weeks                                   |
|      |                    | R programming                     | online  | 9-11-2019(1day)                            |
|      | Mrs M Hima Ivothi  | ICT Tools                         | Online  | 11-16 <sup>th</sup> May 2020 (6            |
| 3    |                    |                                   |         | days)                                      |
|      |                    | Internet of Things                | Online  | 27-29 <sup>th</sup> May2020 (3             |
|      |                    |                                   |         | days)                                      |
|      |                    | Joy Of Computing Using Python     | Online  | 12 weeks(July-Oct)                         |
| 4    | Mrs.L.N.B.Jyostna  | Artificial Intelligence           | VVIT    | 23 <sup>rd</sup> -28 <sup>th</sup> Sep2019 |
| 4    |                    |                                   |         | $\frac{1 \text{ week}(5)}{1 + 1 + 1}$      |
|      |                    | Artificial Intelligence           | Online  | 1 week(5)                                  |
|      |                    | R programming                     | online  | 9-11-2019(1day)                            |
| 5    | Ms.N.Sri Laxmi     | Joy Of Computing Using Python     | Online  | 12 weeks(July-Oct)                         |
|      |                    | R programming                     | online  | 9-11-2019(1day)                            |
|      |                    | Python Programming For            | Online  | / Weeks                                    |
|      |                    | Let Tools                         | Onlina  | May-June,2020                              |
|      |                    | Ai & Deep Learning                | 360digi | 11-10 Way,2020                             |
|      |                    | Ai & Deep Learning                | Tmg     | 1-20 July,2020                             |
|      |                    | Applied Machine Learning And      | Online  | 15-20 June,2020                            |
|      |                    | Deep Learning                     | 0.1     |  |
|      |                    | A1 Getting Used In Impact Of      | Online  | 14 June,2020                               |
|      |                    | Covid-19<br>Knowledge Shering Or  | Online  | 20 May 2020                                |
|      |                    |                                   | Onnie   | 50 Wiay,2020                               |
|      |                    | Research Article Writing And      | Online  | 13 June 2020                               |

|   |                    | Publishing In Good Impact Journal      |        |   |
|---|--------------------|--|--------|---|
|   |                    | Virtual Interactive Classroom For      | Online | 05 June,2020                                    |
|   |                    | Teachers And Challenging               |        |   |
|   |                    | Technologies In Post Covid             |        |   |
|   |                    | Software Engineering                   | Online | 12 weeks(July-Oct)                              |
|   |                    | R programming                          | online | 9-11-2019(1day)                                 |
|   |                    | Programming For                        | Online | May 2020  |
|   | Mrs.S.Naga Sindhu  | Everybody(Getting Started With         |        | (4 Weeks)                                       |
|   |                    | Python)                                |        |   |
|   |                    | Ict Tools                              | Online | 11-16 May.2020                                  |
|   |                    | Cyber Attacks                          | Online | April 19.2020                                   |
|   |                    | Cyber Security                         | Online | 2 June-6 June 2020                              |
| 6 |                    | Ai And Deen Learning                   | Online | 1 July-28 July 2020                             |
|   |                    | Machine Learning For Beginners         | Online | 9th May 2020                                    |
|   |                    | Applied Machine Learning & Deep        | Online | 15-20 June 2020                                 |
|   |                    | Learning                               | Omme   | 13-20 June,2020                                 |
|   |                    | Persont Advances In 2d Drinting        | Onlina | 4 Juna 8 Juna 2020                              |
|   |                    | Technology                             | Omme   | 4 Julie - 8 Julie,2020                          |
|   |                    | Machine Learning                       | Online | 7 June $_{-}$ 0 June 2020                       |
|   |                    | Women Empowerment                      | Online | 1 st July 2020                                  |
|   |                    | Software Engineering                   | Online | 12 weeks(July Oct)                              |
|   |                    | Data visualization                     | Online | 8 days  |
|   |                    | What is data science                   | Online | 8 days  |
|   |                    | Python data structures                 | Online | 6 days  |
|   |                    | Programming for everybody              | Online | 6 days  |
|   |                    | Technical support fundamentals         | Online | 6 days  |
|   |                    | Introduction to the internet of things | Online | 0 days  |
| 7 | Mrs.K.Sandhya Rani | and embedded systems                   | Omme   | 6 days  |
|   |                    | Cyber security                         | Online | July 22-27(5 days)                              |
|   |                    | Ai and deep learning                   | Online | $\frac{July 1.28(28 days)}{July 1.28(28 days)}$ |
|   |                    | Applied machine learning & deep        | Online | July 1-20(20 uays)                              |
|   |                    | learning                               | Omme   | June 15 -20(6 days)                             |
|   |                    | Research insight zones in machine      | Online |   |
|   |                    | learning                               |        | June 25-27(3 days)                              |
|   |                    | Ethical Hacking                        | Online | 12 weeks(July-Oct)                              |
|   |                    | R programming                          | online | 9-11-2019(1day)                                 |
|   |                    | Python Basics                          | Online | 7 Weeks(April-May)                              |
|   |                    | Using Python To Access Web Data        | Online | 7 Weeks(April-May)                              |
|   | Mrs.Ch Padmini     | Introduction To Data Science In        | Omme   | / Weeks(ripin Way)                              |
|   |                    | Python                                 | Online | 6 Weeks(April-May)                              |
|   |                    | C For Everyone Programming             |        |   |
|   |                    | Fundamentals                           | Online | 6 Weeks(April-May)                              |
|   |                    | Introduction To Internet Of things     |        |   |
|   |                    | and Embedded Systems                   | Online | 6 Weeks(April-May)                              |
|   |                    | Capstone Retrieving Processing And     |        |   |
| 8 |                    | Visualizing Data With Python           | Online | 6 Weeks(April-May)                              |
|   |                    | Object Oriented Programming In         |        |   |
|   |                    | Java                                   | Online | 6 Weeks(April-May)                              |
|   |                    |  |        | 1-28th July 2020 (28                            |
|   |                    | Ai And Deep Learning                   | Online | days)   |
|   |                    |  | Online | 11-05-2020 To 15-05-                            |
|   |                    | Data Science Using Python              |        | 2020.(3 Days)                                   |
|   |                    | Online Course On Examination           | Online |   |
|   |                    | Reforms                                |        |   |
|   |                    | Applied machine learning & deep        | Online | June 15, 20(6 days)                             |
|   |                    | learning                               |        | June 15 -20(6 days)                             |

|    |              | Global Webinar Series On Cyber<br>Security | Online |                                     |
|----|--------------|--|--------|-------------------------------------|
|    |              |  |        |                                     |
|    |              | Workshop On Data Science Using             | Online |                                     |
|    |              | Python                                     |        |                                     |
|    |              | Python Data Structures                     | Online | 7 Weeks(April-May)                  |
|    |              | Programming For Everybody                  | Online | 7 Weeks(April-May)                  |
|    |              | Technical Support Fundamentals             | Online | 6 Weeks(May-June)                   |
|    |              | Object Oriented Programming In             |        | o weeks(way suite)                  |
|    |              | Iava                                       | Online | 6 Weeks(May-June)                   |
|    |              | Introduction To Data Science In            | Omme   | o weeks(way suite)                  |
|    |              | Python                                     | Online | 6 Weeks (April-May)                 |
|    |              | C For Everyone Programming                 |        | o weeks(ripin-way)                  |
|    |              | European Everyone Trogramming              | Online | 6 Weeks (April-May)                 |
|    |              | Problem Solving Through                    | Omme   | 12 Weeks(Ian April)                 |
|    |              | Programming In C                           | Online | 12 Weeks(Jan-April)                 |
|    |              | The Rite And Rutes Of Computer             | Omme   |                                     |
|    |              | Networking                                 | Onlina | 6 Wooks (May Juna)                  |
|    |              |  | Omme   | 11.05.2020 To 16.05                 |
|    |              | Let Tools                                  | Onling | 2020 (6  Days)                      |
|    |              | Cuber Security                             | Online | 2020 (0 Days)                       |
|    |              |  | Omme   | (104-05-2020(1  Day))               |
|    |              | Cuber coourity                             | Onlina | 23-03-2020 10 27-03-                |
|    |              | Ethical Hashing                            | Online | 12 Weeks (July Oct)                 |
|    |              |  | Omme   | 12 weeks(July-Oct)                  |
|    |              | Lot Applications                           | Onling | 01-00-2020 10 03-00-                |
|    | Ms.U.Sirisha | Machina Learning                           | Online | 2020.(3  Days)                      |
|    |              |  | Onnie  | 1.07 2020 To 28.07                  |
|    |              | Ai And Deep Learning                       | Online | 2020 10 28-07                       |
| 9  |              |  | Omme   | 2020<br>22-05-2020 To 26-05-        |
|    |              | Artificial Intelligence                    | Online | 22-05-2020 10 $20-05-2020 (5 Days)$ |
|    |              |  | Omme   | 09-06-2020 To 13-06-                |
|    |              | Block chain Technologies                   | Online | 2020 (5  Days)                      |
|    |              | Advanced Python Programming                |        | 21-05-2020 To 25-05-                |
|    |              | Using Diango                               | Online | 2020 (5 Days)                       |
|    |              | Applied Machine Learning And               |        | 15-06-2020 To 20-06-                |
|    |              | Deep Learning                              | Online | 2020.(5 Days)                       |
|    |              | Tools For Online Classroom For             |        | 18th May-20th May(3                 |
|    |              | Post Covid -19                             | Online | Day)                                |
|    |              | Emerging Trends In Computer                |        |                                     |
|    |              | Science And Information                    |        | 29-06-2020 To 04-07-                |
|    |              | Technology                                 | Online | 2020.(5 Days)                       |
|    |              |  |        | 22-04-2020 To 02-05-                |
|    |              | Vmware It Academy                          | Online | 2020                                |
|    |              | Institution's Innovation Council (Iic)     |        |                                     |
|    |              | Of Mhrd's Innovation Cell, New             |        | 28-04-2020 To 22-05-                |
|    |              | Delhi                                      | Online | 2020                                |
|    |              |  | Online | 11-05-2020 To 15-05-                |
|    |              | Data Science Using Python                  |        | 2020.(5 Days)                       |
|    |              |  | Online | 10-04-2020 To 11-04-                |
|    |              | Intellectual Property Rights               |        | 2020(2 Days)                        |
|    |              | R Programming                              | Online | 9-11-2019(1day)                     |
|    |              | Ethical Hacking                            | Online | 12 Weeks(July-Oct)                  |
| 10 | Mrs.B Swathi | Deep Learning With AI                      | NRIIT  | 25th-30thnov,2019                   |
|    |              | Applications                               |        | (6days)                             |
| 11  | Mr.M Ravi Kanth    | Programming In JAVA                | Online | 12 Weeks(July-Oct)                 |
|-----|--------------------|------------------------------------|--------|------------------------------------|
|     |                    | R Programming                      | Online | 9-11-2019(1day)                    |
| 13  | Mr.R Phani Kishore | Programming In JAVA                | Online | 12 Weeks(July-Oct)                 |
|     |                    | R programming                      | online | 9-11-2019(1day)                    |
|     |                    | Deep Learning with AI Applications | NRIIT  | 25th-30thNov,2019                  |
|     |                    |                                    |        | (6days)                            |
|     |                    | R programming                      | online | 9-11-2019(1day)                    |
|     |                    |                                    |        | 1-28th july 2020                   |
|     |                    | Ai And Deep Learning               | Online | (28days)                           |
|     |                    | Applied Machine Learning And       |        |                                    |
|     |                    | Deep Learning                      | Online | 15th- 20th June-2020               |
| 1.4 | P.Sunitha          | INDIA FIRST LEADERSHIP             | Online | 9th May 2020                       |
| 14  |                    | TALK                               |        |                                    |
|     |                    | Introduction To Data Science In    |        |                                    |
|     |                    | Python                             | Online | 6 Weeks(April-May)                 |
|     |                    | Programming For Everybody          | Online | 7 Weeks(April-May)                 |
|     |                    | Introduction To Internet Of things |        |                                    |
|     |                    | and Embedded Systems               | Online | 6 Weeks(April-May)                 |
|     |                    | Python Data Structures             | Online | 7 Weeks(April-May)                 |
| 15  | Dr.M. Tanooj       | R programming                      | online | 9-11-2019(1day)                    |
|     | Kumar              | 2                                  |        | 0.44.00/07/07                      |
| 16  | Dr.S.Suresh        | R programming                      | online | 9-11-2019(1day)                    |
| 17  | Dr.K.Satheesh      | R programming                      | online | 9-11-2019(1day)                    |
| 18  | Dr.A.Srinivasa Rao | R programming                      | online | 9-11-2019(1day)                    |
| 19  |                    | R programming                      | online | 9-11-2019(1day)                    |
|     |                    |                                    |        | 1 ( 2020 5 (                       |
|     |                    | 101 applications                   | online | 1-0-2020-5-0-                      |
|     |                    | Artificial Intelligence            | online | 2020(30ays)                        |
|     | K Sandeen          | Aluncial intelligence              | omme   | $\frac{2210-2001}{May2020(5days)}$ |
|     | K.Buildeep         |                                    |        | 09th-13th June 2020(5              |
|     |                    | Block chain Technologies           | Online | Davs)                              |
|     |                    | Machine Learning                   | Online | 1st-5th jun2020(5 Day)             |
|     |                    | Programming For Everybody          | Online | 7 Weeks(April-May)                 |
|     |                    | Python Data Structures             | Online | 7 Weeks(April-May)                 |
| 20  | V.V.R.Manoj        | R programming                      | online | 9-11-2019(1day)                    |
| 21  | P.Jagadeeswara Rao | R programming                      | online | 9-11-2019(1day)                    |
|     |                    | R programming                      | online | 9-11-2019(1day)                    |
|     |                    | Interfacing With Arduino           | online | 7 Weeks(April-May)                 |
|     |                    | Technical Support Fundamentals     | online | 7 Weeks(April-May)                 |
|     |                    | Using Pyhton To Access Web Data    | online | 7 Weeks(April-May)                 |
|     |                    | Interfacing With The Raspberry Pi  | online | 7 Weeks(April-May)                 |
|     |                    | The Arduino Platform And C         | online | 7 Weeks(April-May)                 |
|     |                    | Programming                        |        |                                    |
|     |                    | C For Everyone Programming         | online | 7 Weeks(April-May)                 |
| 22  | Y.Salini           | Fundamentals                       |        |                                    |
|     |                    | Programming For The Internet Of    | online | 7 Weeks(April-May)                 |
|     |                    | Things Project                     | 1:     |                                    |
|     |                    | Cotting Storted With Duther        | online | / weeks(April-May)                 |
|     |                    | Introduction To The Internet Of    | online | 7 Weeks (April Mar)                |
|     |                    | Things And Embedded Systems        | omme   | / weeks(April-May)                 |
|     |                    | The Raspherry Pi Platform And      | online | 7 Weeks(April-May)                 |
|     |                    | Python Programming For The         | omme   | , theorem (here)                   |
|     |                    | Raspberry Pi                       |        |                                    |
|     |                    |                                    | 0.1.   | 01 0C 2020 T- 05 0C                |

|    |                       |                                    |        | 2020 .(5 Days)       |
|----|-----------------------|------------------------------------|--------|----------------------|
|    |                       |                                    |        | 09-06-2020 To 13-06- |
|    |                       | Block Chain Technologies           | Online | 2020 (5 Days)        |
|    |                       | Robotic Process Automation         |        | 20201(0 2 4 3 5)     |
|    |                       | Naac Awarness Programme For        |        |                      |
|    |                       | Faculty                            |        |                      |
|    |                       | Problem Solving Through            |        |                      |
|    |                       | Problem Solving Infough            |        |                      |
|    |                       | Flogramming III C                  | Outing | 11.05.2020 T- 15.05  |
|    |                       | Faculty Development Program On     | Online | 11-05-2020 10 15-05- |
|    |                       | Data Science                       |        | 2020.(5 Days)        |
|    |                       | Research Insight Zones In Machine  | Online |                      |
|    |                       | Learning.                          |        |                      |
|    |                       | Deep Learning & Its applications   | Online |                      |
|    |                       | Theory To Practice                 |        |                      |
|    |                       | Faculty Development Program On     | Online |                      |
|    |                       | Aws Cloud Computing                |        |                      |
|    |                       | Emerging Trends In Computer        | Online |                      |
|    |                       | Science And Information            |        |                      |
|    |                       | Technology                         |        |                      |
|    |                       | Faculty Development Program On     | Online |                      |
|    |                       | Applied Machine Learning & Deep    |        |                      |
|    |                       | Learning.                          |        |                      |
|    |                       | Covid 19 As Global Crisis          | Online |                      |
|    |                       | Application And Appreciation Of    |        |                      |
|    |                       | Language And Literature            |        |                      |
|    |                       | National Level Faculty             | Online |                      |
|    |                       | Development Program On Tools For   |        |                      |
|    |                       | Online Classroom Post Covid-19     |        |                      |
|    |                       | Step Lock System In Bus Using Iot  | Online |                      |
|    |                       | One Day Workshop On R              | Online |                      |
|    |                       | 5g Technology And Its Applications | Online |                      |
|    |                       | Data Visualization With R          | Online |                      |
|    |                       | Programming                        |        |                      |
|    |                       | Ai Getting Used In Impact Of Covid | Online |                      |
|    |                       | 19                                 |        |                      |
|    |                       | Polynomial Regression Using        | Online |                      |
|    |                       | Python Webniar                     |        |                      |
|    |                       | Building Decission Tree From       | Online |                      |
|    |                       | Scratch Using Python Webniar       |        |                      |
|    |                       | Research Article Writing And       | Online |                      |
|    |                       | Publishing in Good Impact Journal  |        |                      |
|    |                       | Covid 19 Impact On Education       | Online |                      |
|    |                       | Technology Environment &           |        |                      |
|    |                       | Mankind                            |        |                      |
|    |                       | Covi 19 Prediction And Forecasting | Online |                      |
|    |                       | Using Machine Learning Webinar     | omme   |                      |
|    |                       | Knowledge Sharing On A To 7 Of     | Online |                      |
|    |                       | Iournal Publications (Survey On    | Omme   |                      |
|    |                       | Citations)                         |        |                      |
|    |                       | Virtual Interactive Classroom For  | online | 9-11-2019(1 day)     |
|    |                       | Teachers And The Challenging       | omme   | 7 11-2017(1uay)      |
|    |                       | Technologies In Post Covi_10 Fro   |        |                      |
| 23 | G Vnkata Ramana       | The Need For Change In Dedagoory   | VRSEC  | 13th-1/thSen2010     |
| 25 | O. v likata Kalilalia | And A Simple Way To Teach          | VIGEC  | 13ul-14uloep2019     |
|    |                       | Online With A Smorthhone For       |        |                      |
|    |                       | Paginaars                          |        |                      |
|    |                       | Degineers                          |        |                      |

|    |                    | R programming                      | online | 9-11-2019(1day)          |
|----|--------------------|------------------------------------|--------|--------------------------|
| 24 | ~ ~ ~              | Fdp on ICT tools                   | online | (11 to 16 may)6 days     |
|    | Ch.Lavanya Susanna | Fdp on cyber security              | online | (23 to 27 may)6 days     |
|    |                    | Fdp on machine learning            | online | (26  to  28  may)3  days |
|    |                    | Block chain                        | VRSEC  | 13th-14thSep2019         |
|    |                    | Python for Everybody               | online | 7 Weeks(April-May)       |
|    |                    | Python Data Structures             | Online | 7 Weeks(April-May)       |
|    |                    | Engineering Practices for building | Online | 7 Weeks(April-May)       |
|    |                    | Quality                            | Omme   | / Weeks(riphi Muy)       |
|    |                    | Lean Software Development          | Online | 7 Weeks(April-May)       |
|    |                    | Programming For Everybody          | Online | 7 Weeks(April-May)       |
|    |                    | Python Data Structures             | Online | 7 Weeks(April-May)       |
|    |                    | Alige Software Development         | Online | 7 Weeks(April-May)       |
|    |                    | Capstone: Retrieving, Processing,  |        |                          |
|    |                    | and Visualizing Data with Python   | Online | 7 Weeks(April-May)       |
|    |                    | Cyber security and its domain      | Online | 7 Weeks(April-May)       |
|    |                    |                                    |        | 11th-16th-2020.(5        |
| 25 | M.Ragini           | Cyber security                     | Online | Days)                    |
|    | , C                | Requirements Elicitation: Artifact |        | 7 Weeks(April-May)       |
|    |                    | and Stakeholder Analysis           | Online |                          |
|    |                    | Requirements Gathering for Secure  |        | 7 Weeks(April-May)       |
|    |                    | Software Development               | Online |                          |
|    |                    | Requirements Specification: Goals  |        | 7 Weeks(April-May)       |
|    |                    | and conflict Analysis              | Online |                          |
|    |                    | Software Requirements              |        | 7 Weeks(April-May)       |
|    |                    | Prioritization: Risk Analysis      | Online | r syr                    |
|    |                    | SRS Documents: Requirements and    |        | 7 Weeks(April-May)       |
|    |                    | Diagrammatic Notations             | Online |                          |
|    |                    | Using Databases with Python        | Online | 7 Weeks(April-May)       |
|    |                    | Using Python to Access Web Data    | Online | 7 Weeks(April-May)       |
|    |                    |                                    |        |                          |
|    |                    | Python Data Structures             | Online | 7 Weeks(April-May)       |
|    | S.Paneetha         | Programming For Everybody          | Online | 7 Weeks(April-May)       |
|    |                    |                                    | Online | 25-29th                  |
|    |                    | Data science                       |        | June2020(5days)          |
|    |                    |                                    | Online | 9-13th June 2020         |
|    |                    | Block chain Technologies           |        | (5days)                  |
|    |                    | FIVE DAY FACULTY                   | Online |                          |
|    |                    | DEVELOPMENT PROGRAM On             |        |                          |
| 26 |                    | Iot                                |        | 1-5th june2020(5days)    |
|    |                    | Faculty Development Program On     | Online | 1-30th June-2020         |
|    |                    | Data science                       |        | (30days)                 |
|    |                    | Innovative Trends In Data Analysis | Online | 26-30th June 2020        |
|    |                    | With Ai                            |        | (5days)                  |
|    |                    | Faculty Development Program On     | Online | 15 201 1 2020            |
|    |                    | Applied Machine Learning & Deep    |        | 15-20th June2020         |
|    |                    | Learning                           |        | (Sdays)                  |
|    |                    | National Level Faculty             | Online | 10.00/11 2020            |
|    |                    | Development Program On Tools For   |        | 18-20thJune 2020         |
|    |                    | Online Classroom Post Covid19      |        | (3day)                   |
|    |                    | National Level Online Boot camp    | Online | 7(01-06-2020 to 07-06-   |
|    |                    | Of Career Building With Python     |        | 2020)(7days)             |
|    |                    | AI Getting Used In Impact Of       | Online |                          |
|    |                    |                                    |        | (14-06-2020)(1day)       |
|    |                    | Knowledge Sharing On A To Z        | Online | (20.05.0020)(1.1.)       |
|    |                    | Journal Publications               |        | (30-05-2020)(Iday)       |

| Research Article Writing And      | Online |                    |
|-----------------------------------|--------|--------------------|
| Publishing In Good Impact Journal |        | (13-06-2020)(1day) |
| Virtual Interactive Classroom For | Online |                    |
| Teachers And The Challenging      |        |                    |
| Technologies In Post Covid-19     |        | (05-06-2020)       |

## **Students Participation**

ART GALLERY





Art By N.Yeshwanth, II CSE - A, 188T1A0542



Art By K. Jayanth Sai, II CSE - A, 188T1A0522





198TA10508 A.Bhuvana

## SNIPPETS IN PYTHON PROGRAMMING:

Q 1 - What is the output for -S = [['him', 'sell'], [90, 28, 43]] S[0][1][1] A - 'e'

<u>B - 'i'</u>

<u>C - '90'</u>

<u>D - 'h'</u>

Answer : A

Explanation

List can contain other list values.

So, in this question S[0] gives ['him', 'sell'], S[0][1] gives 'sell' and S[0][1][1] gives 'e'.

Remember, the index in python starts with '0'.

Q 2 - Which of the following is false statement in python

<u>A - int(144)==144</u>

<u>B - int('144')==144</u>

<u>C - int(144.0)==144</u>

D - None of the above

Answer : D

Explanation

The built-in int() type constructor converts string and floating value to integer.

Q 3 - When the given code is executed how many times ' 'you are learning python ' ' will be printed.

| a | = 0   |  |
|---|-------|--|
|   | 4 . 4 |  |

```
while a<10:
... print("you are learning python")
... pass
```

<u>A - 9</u>

<u>B - 10</u>

<u>C - 11</u>

<u>D</u> - Infinite number of times.

Answer : D

Explanation

The loop will execute infinite number of times because there is no statement specified for end of loop and pass indicates nothing is to be done.

Q4.-Suppose we have a set  $a = \{10,9,8,7\}$ , and we excute a.remove(14) what will happen

A - We cannot remove an element from set.

B - Method is executed but no exception is raised.

C - Key error is raised.

D - There doesn't exist such method as remove.

Answer:C

Explanation:

since there is no such element in the set, so key error is raised

Q 5 - What is output of following

```
print("abbzxyzxzxabb".count('abb',-10,-1))
```

A-2

**B-0** 

**C-1** 

**D-Error** 

Answer:B

Explanation:

It Counts the number of times the substring 'abb' is present starting from position 2 and ending at position 11 in the given string



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SOCIAL MEDIA TOOLS

## FACEBOOK ANALYTICS

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You also get insights for Facebook Groups so if you run a Group definitely check those out



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II/IVB.Tech





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