VELAMMAL
INSTITUTE OF TECHNOLOGY
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CSE, ECE, EEE, IT, MECH Accrediated by NBA, NAAC
"Velammal Knowledge Park", Chennai - Kolkatta Highway, Ponneri - 601 204

Department of Mechatronics Engineering

Presents

ROBONEIR

January 2023 – May 2023

Volume 1 , Issue 2

Editor's Note.....

Dear Readers,

On behalf of Velammal Institute of Technology, It gives me an immense pleasure to release an another issue of Roboneir, Newsletter of Department of Mechatronics Engineering. The experience of being Editor-in-Chief to this issue has been as exciting and entertaining as it was enlighten. This newsletter brings out the achievements of our Mechatronics Engineering students and faculties in curricular, co-curricular and extra-curricular domains.

I incredibly congratulates department faculty members, who all worked as team to furnish all details in perfect shape. This edition is, in essence, an amalgamation of the refreshing ideas and efforts of numerous competent writers and designers from the Department of Mechatronics Engineering of our college. The team covered a plethora of topics ranging from the latest advancements in technology to navigating higher studies after graduation. Also, the newsletter was made complete by the aesthetic layouts created by our talented designers. This issue is also mentioned as an open form for exchange of ideas, knowledge and technical transfer.

I hope you enjoy this edition as much as we enjoyed creating it!

Dr. N. Balaji

Editor's Note.....

Dear Readers,

On the behalf of Velammal Institute of Technology, I am delighted to release to you "ROBONEIR", a newsletter that radiates the glimpses in the department of Mechatronics Engineering. This newsletter evidences the achievements, participation and outcomes of our departmental activities. Also this letter creates a forum space to all budding engineers to exchange their ideas.

I hope that this newsletter gives you a better view and infographics on how our department creates the roadmap of technical and non-technical excellence. I would like to thank entire team, who have worked tirelessly to ensure this newsletter is exemplary in content and design. A variety of technical articles and writeups written by the students and faculties have been published in this newsletter.

I would like to end this note with a few inspiring words of Dr. A. P. J. Abdul kalam

Don't take rest after your first victory because if you fail in second, more lips are waiting to say that your first victory was just luck.

Dr. S. Soundararajan

TEAM MEMBERS

Editors-in-Chief

Dr. N. Balaji, Ph.D.,

Principal, Velammal Institute of Technology

Dr. S. Soundararajan, Ph.D.,

Vice - Principal, Velammal Institute of Technology

Associate Editor

Dr. D. Magesh Babu, Ph.D.,

Professor & Head / Mechatronics Engineering,

Velammal Institute of Technology

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Mr. G. M. Pradeep, M.E., (Ph.D), Asst. Prof./Mechatronics/VIT

Mr. N. Mohammed Abu Basim, M.E., Asst. Prof./Mechatronics/VIT

Mr. R. Ohmsakthi vel, M.E., M.Tech., (Ph.D), Asst. Prof./Mechatronics/VIT

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Mr. H. L. Arun Prasad, III Yr Mechatronics, VIT

Mr. V. Vishnu, III Yr Mechatronics, VIT

Mr. V. Dinesh Kumar, III Yr Mechatronics, VIT

Ms. R. Kaviya, II Yr Mechatronics, VIT

Mr. B. Mohankanth, II Yr Mechatronics, VIT

Mr. R. S. Prakash, II Yr Mechatronics, VIT

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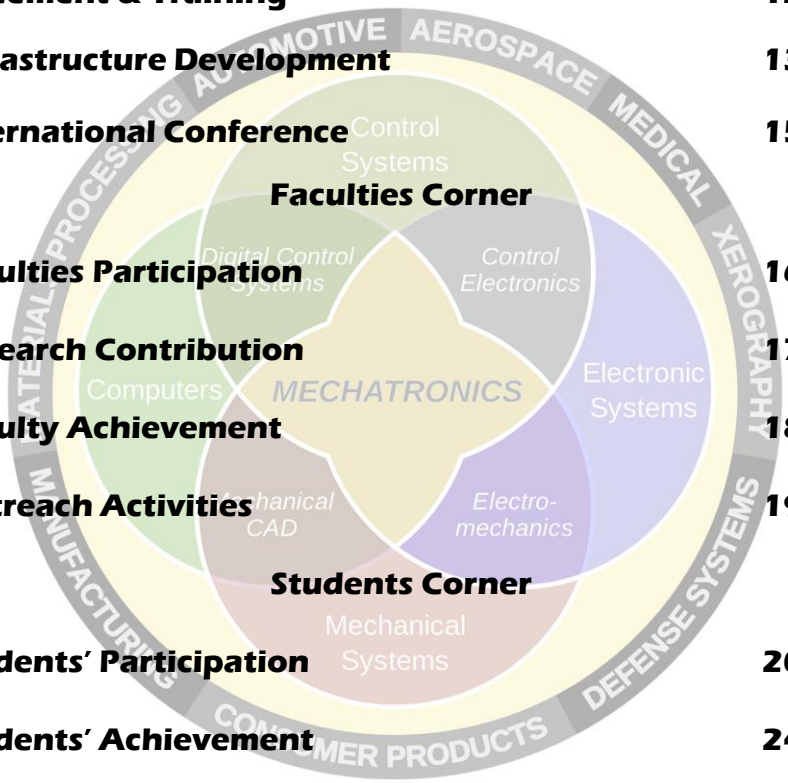


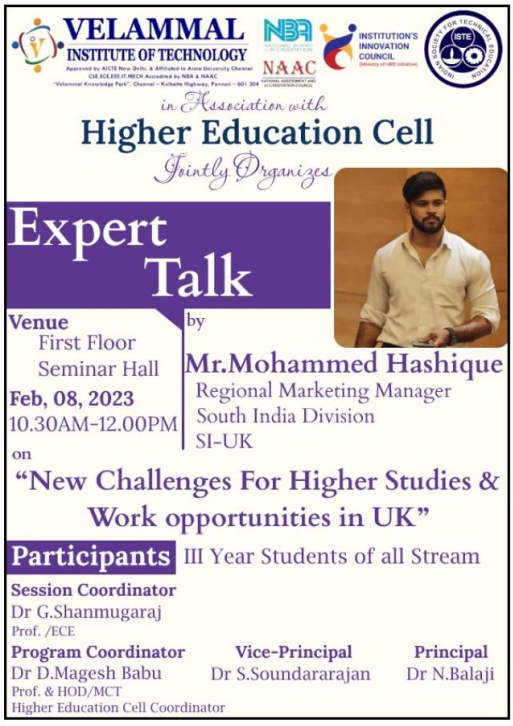
Departmental Activities

Events Organized

An Expert Talk on

"New Challenges for Higher studies & Work opportunities in UK"

The Department of Mechatronics Engineering, Velammal Institute of Technology along with Higher Education Cell conducted an Expert Talk on "New Challenges for Higher studies & Work opportunities in UK" on 08.02.2023 (10:30am to 12:00pm) for III Year Mechatronics Engineering Students at seminar hall with an objective to narrate the challenges and work opportunities of higher studies in UK. The lecture was delivered by Mr. Mohammed Hashique, Regional Marketing Manager, South Indian Division, SI-UK.

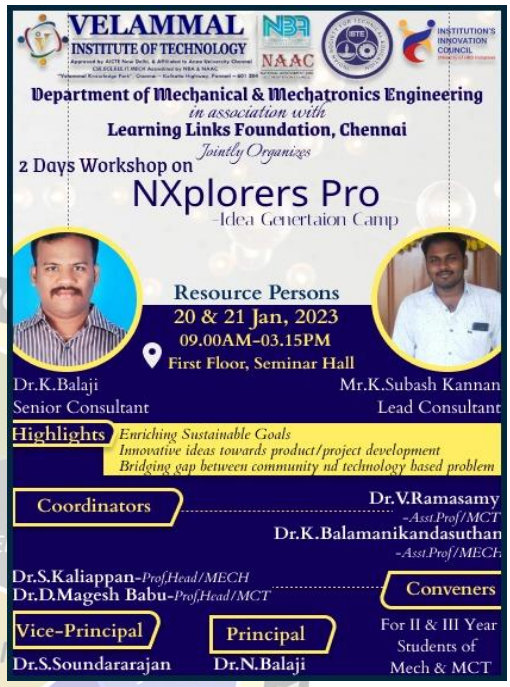


Events Organized

Two days workshop on

"NXplorers Pro - Idea Generation Camp"

The Department of Mechatronics Engineering, Velammal Institute of Technology along with learning links foundations, Chennai conducted the two days workshop on "NXplorers Pro - Idea Generation Camp" from 20.01.2023 to 21.01.2023 (09.00am to 3.15pm) for II Year and III Year Mechatronics Engineering Students at seminar hall with an objective to enrich sustainable goals and innovate ideas towards product project development. The lecture was delivered by Dr. K. Balaji, Senior Consultant and Mr. K. Subash Kannan, Lead Consultant, learning links foundations, Chennai.



Events Organized

An Expert Talk on

"Importance of Pneumatic & Hydraulic System"

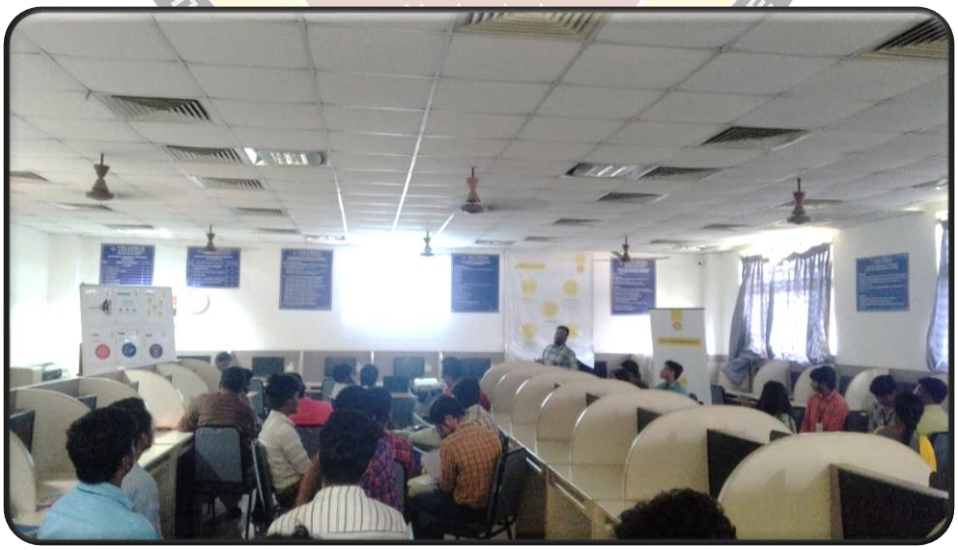
The Department of Mechatronics Engineering, Velammal Institute of Technology along with Entrepreneurship Development Cell conducted an expert Talk on "Importance of Pneumatic & Hydraulic System" on 15.02.2023 (10:00am to 12:00pm) for II Year and III Year Mechatronics Engineering Students at seminar hall with an objective to brief the concepts and structure of industrial valves and accessories towards the Industrial Automation. The lecture was delivered by Mr. Thyagarajan Thirumalai, Plant Engineering Manager, Flow Control Division, Flowserve India Controls Pvt. Ltd, Chennai.

Events Organized

An Expert Talk on

"Significant Advancements in Industrial Design and Development Pertaining to Passenger Cars and Utility Vehicles"

The Department of Mechatronics Engineering, Velammal Institute of Technology along with Entrepreneurship Development Cell conducted an expert Talk on "Significant Advancements in Industrial Design and Development Pertaining to Passenger Cars and Utility Vehicles" on 22.02.2023 (10:00am to 12:00pm) for II Year and III Year Mechatronics Engineering Students at seminar hall with an objective to brief the concepts about the design and development of latest automobiles. The lecture was delivered by Mr. N. Silambarasan, Assistant Manager, Tool Design (PC & UV Wheels), Wheels India Limited, Chennai.



Women Empowerment Program & Idea Pitching - Start-Up Tamizh

Velammal Institute of Technology conducted a Women Empowerment Program on 10.05.2023 (10:00am to 12:00pm) for all girl Students at seminar hall with an objective to make awareness about women empowerment among the budding engineers. The session was chaired by Mrs. Tamizselvi, Inspector– Tiruvallur, Dr. Sharmila Nagarajan, Founder & Chairman of Velli Venture & ICCDF Trust and Startup Tamizh Founder and Dr. Divya Prakash, MRCOG – London.

Events Organized

Project Expo

"INNOVATE ' 23"

Velammal Institute of Technology along with Department of Research and Development organized a project Expo "Innovate 23" on 19.04.2023 (9:00am to 3.30pm) for all Students at seminar hall with an objective to motivate the young minds to involve themselves in any innovative project work. The session was chaired by Mr. Karthikeyan Shankar, Delivery Head – Digital Services, Sify Technologies Limited, Chennai. 100+ projects were submitted by 200+ students from various branches. They are highly motivated by themselves and clearly pitched their target over real time applications

Events Organized

Industrial Visit to North Chennai Thermal Power Station - II

Department of Mechatronics Engineering, Velammal Institute of Technology organized a one day Industrial visit to North Chennai Thermal Power Station-II, Athipattu on 28/02/2023. A team of II & III year Students of Mechatronics Engineering (40 no's) along with 2 Faculty members took part in the Industrial visit. We started from VIT and reached North Chennai Thermal Power Station at around 10.00 am by our college bus. The coal with particular size is being crushed and equalized for continuous supply of generation of power. The rotation and loader and distribution of conveyor belt were visible on the top of the floor. We visited different places of thermal power plant like coal handling plant, Ash handling plant, Bunker, Boiler drum, Turbine, Generator, cooling tower and explained the working of each sections of power plant. Finally, we visited DCS Siemens control system of plant. Overall, it was very useful for the students and strengthened their knowledge about the Thermal power plant.

Industrial Visit to Brakes India Private Limited

A batch of II Year and III Year Mechatronics Engineering students (40) and two staff coordinators visited the Brakes India Pvt Ltd, Padi on 11.03.2023. unlisted private company incorporated on 09 November, 1962. It is classified as a private limited company and is located in Tamilnadu, Padi. Its authorized share capital is INR 125.00 cr and the total paid-up capital is INR 17.46 cr. Brakes India Private Limited's operating revenues range is Over INR 500 cr for the financial year ending on 31 March, 2022. It's EBITDA has increased by 47.48 % over the previous year. At the same time, it's book net worth has increased by 12.05 %. Other performance and liquidity ratios are available here. The Company manufactures supplies braking equipment for automotive and non-automotive applications. Their manufacturing products are calipers, actuation, drum brakes, valves, hose. During the trip students gained practical knowledge about the handling of the various automotive components.

Industrial Visit

Industrial Visit to TVS Training and services Private Limited

A batch of II Year and III Year Mechatronics Engineering students (40) and two staff coordinators visited the TVS Training and Services Pvt Ltd on 15.03.2023. Ms. Dhanalakshmi has given the presentation about history, developments and training divisions & branches of the organization. Under the guidance of Mr. Krishnakumar P, Manager – Business & Development, the respective Expert Trainers from various training divisions (Mechanical – Manufacturing, Industrial Electrical and Automation, Automobile, Embedded Systems etc.) were explained on their part of training with the best facility available within the firm and also given valuable inputs towards the future developments in various competitive companies. In this visit, the students were interacted with the experts in various divisions and they cleared their doubts.

Industrial Visit

Industry – Institute Interaction

Mr. G. M. Pradeep and Mr. N. Mohammed Abu Basim visited **JSE Engineering Private Limited** on 25/01/2023. The purpose of this visit is to arrange industrial visit, Project and internships for the Mechatronics Engineering students. They are ready to sign Memorandum of Understanding (MoU) with our college in the view of placement and training.

Mr. G. M. Pradeep and Mr. N. Mohammed Abu Basim visited **New Tech India Products** on 18.02.2023 to arrange industrial visit, placements, projects and internship for the mechatronics engineering students. There, both of the faculties gets into workplace and had interaction with the deciding authority and got the positive reply form them on that day itself.

Mr. G. M. Pradeep and Mr. N. Mohammed Abu Basim visited **New Smith Tech Industries** on 18.02.2023 to arrange the placement snd internship for the mechatronics engineering students. The company authorities fell good with our college academic culture. They gave an assurance on providing placement guidance to students

Industry – Institute Interaction

Dr. N. Balaji, Principal/VIT, **Dr. D. MageshBabu,** Prof & Head/Mechatronics and Dr. S. Kaliappan, Prof & Head/Mechanical has visited TVS Training and Services Pvt Ltd. There the training in-charge clearly explains the procedure of getting trained over in that institute. Also the company employees showcased and explained the concepts and working principles of their major equipment available in that site

Department of Training and Placement, Velammal Institute of Technology organized training programs to II year and III Year Mechatronics Engineering students from second year onwards. This cell continuously strives to help students help students in pursuing their career goals by acquiring employment-seeking skills and ultimately to attain desired employment. This is accomplished through building a strong partnership amongst students, alumni, faculty-members and industries. Usually they conduct training program in very first week of the every semester with structured curriculum.

In this semester, the T&P cell along with **Six Phrase Training Institute**, conducted 10 days training program on **"C – Programming"** for III Year Mechatronics Engineering Students. In this session, students actively participated in the training and enrich their programming skills efficiently. As an outcome of this training program, our students can able to solve merely 200+ programs in Skillrack online platform in very short period of time.

The T&P cell conducted 10 days training program on **"Aptitude and Soft Skills"** for II Year Mechatronics Engineering Students. The whole session was presided by Mr. Eldo Ranjith – Aptitude Trainer. On the completion of this training program, the students can able to involved in various verbal reasoning and logical interpretations very efficiently. Also they develop their personality as well as soft skills.

Practical experience plays a vital role in Engineering programme. Our college understands the inevitability and has established an array of laboratories for the welfare of the Mechatronics Engineering students. The installed laboratories assist and motivate the students to enhance their skills and conceptual knowledge through practical experience and research. Our laboratories are equipped with the state-of-the-art equipment and resources are made available for the skill development of the students. The department has equipped with sufficient number of skilled faculties to ensure activities of the students inside the laboratory workspace. Separate time slots are allotted for each lab and the students are permitted to access the units after working hours. Two new laboratories (Sensors and Instrumentation Laboratory & Industrial Automation Laboratory) are installed for the Mechatronics Engineering students.

The **Industrial Automation laboratory** is fully equipped with Programmable Logic Controllers (PLCs). Here, students can able to work with simple automated systems. This lab encourages the students to implement their own ideas in the field of automation. The major equipment includes.

1. PLC (Delta DVP SS2 series) along with the necessary components
2. Automation trainer kit
3. VFD drive trainer setup
4. Servo trainer setup
5. Switch gear setup

The **Sensors and Instrumentation Laboratory** features state-of-the-art equipment and software. In this lab, students are allowed to conduct experiments, that enlighten them the static and dynamic characteristics of sensors under various transduction principle. Here the student can continue their research in the field of sensor technology. This lab provisions the place to understand, design the mechatronics system with sensors and transducers. The lab includes the following sensors

1. Operating parameters (Load, Torque, Force, pressure) measuring setup
2. Optical sensors (LDR, Photo transistor, photo diode, Ultrasonic and Laser Sensor)
3. Gyroscope, Accelerometer and Magnetometer
4. Data Acquisition System (DAQ) with sensors and transducers.
5. Displacement transducer (LVDT)
6. Absolute Encoders and Incremental encoder with DSO
7. Force and Tactile sensor

Infrastructure Development

Infrastructure Development

Industrial Automation Laboratory

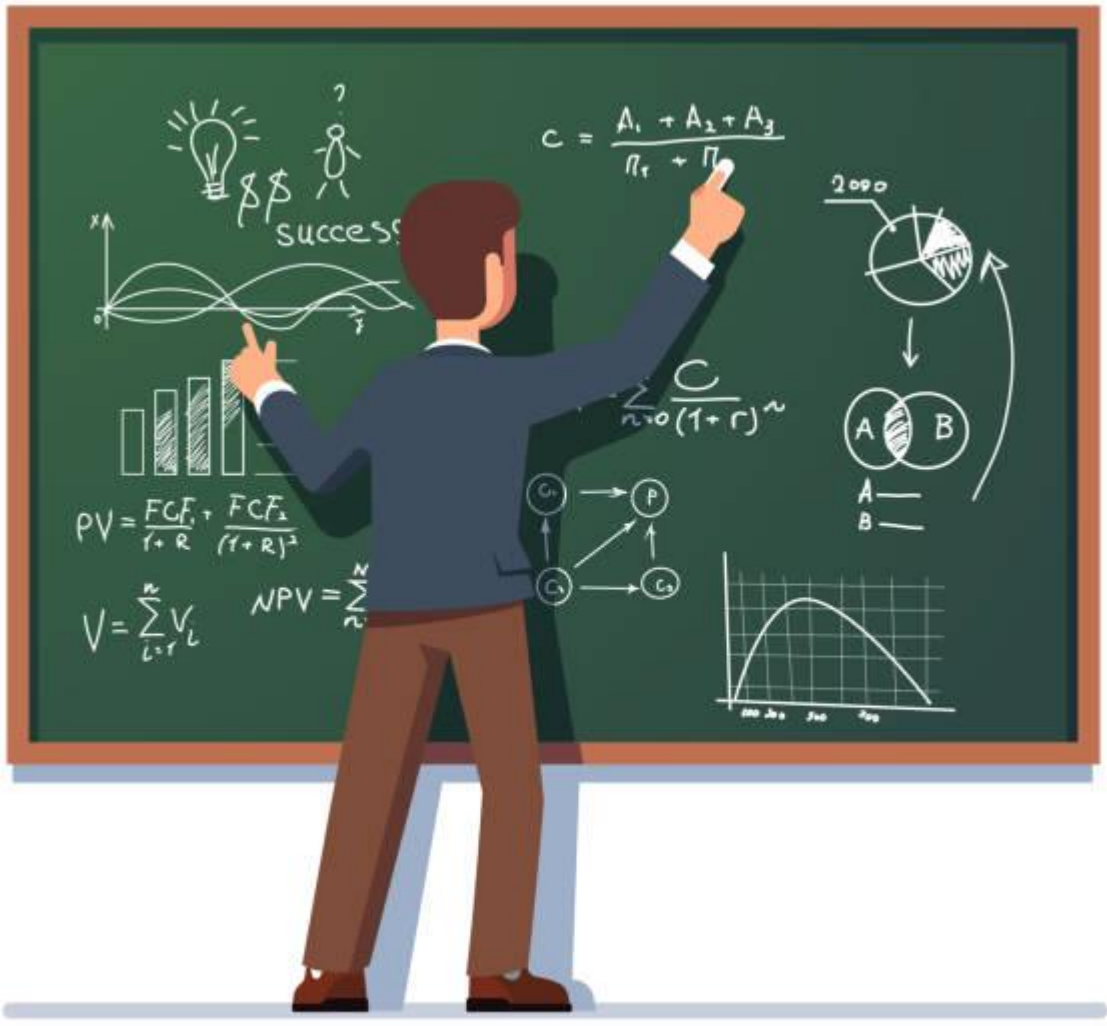
Fluid Drives Laboratory

Sensors and Instrumentation Laboratory

International Conference

Department of Mechatronics Engineering and Mechanical Engineering jointly organizes **Fourth International Conference on Intelligence in Industrial Automation** on 5th April 2023 at our college campus. We have received 100+ papers in various domain, in this we have reviewed and selected 25 papers for presentation. All the participants presented their papers infront of expert members on that day. Dr. N. Balaji, Principal/VIT, inaugurated the conference, followed by the presidential address by chief guest Mr. Gilbert Fernando and Mr. Subash Thanappan.

Faculties Corner



- **Mr. G. M. Pradeep** along with Mechatronics Engineering students has attended and presented paper titled "Face Recognition QR Code Register" at International Conference on Advanced Materials and Technologies for Industry 4.O -"ICAMT 4.O" organized by Bannari Amman Institute of Technology, Erode
- **Mr. G. M. Pradeep** along with Mechatronics Engineering students has attended and presented paper titled "A critical review on Magnetorheological fluids and its future challenges" at International Conference on Advanced Materials and Technologies for Industry 4.O -"ICAMT 4.O" organized by Bannari Amman Institute of Technology, Erode
- **Mr. G. M. Pradeep** along with Mechatronics Engineering students has attended and presented paper titled "Recent Advances in Smart Materials for the Engineering Applications(ISBN: 978-81-954872-2-6)" at 5th International Conference on Recent Innovations in Science & Technology organized by Holy Grace Academy of Engineering, Thrissur District, Kerala.
- **Mr. G. M. Pradeep** has attended and presented paper titled "Experimental Study of Aerodynamics Performance of NACA 4418 Airfoil with Fencing" at 7thInternational Conference on Science, Technology, Engineering and Management (ICSTEM'23) organized by KIT-Kalaignar karunanidhi Institute of Technology, Coimbatore.
- **Mr. G. M. Pradeep** has attended and presented paper titled "Numerical Investigations of Aerodynamic Performance of Blunt Nose Cone with Aero disk at Hypersonic Flow" at 7thInternational Conference on Science, Technology, Engineering and Management (ICSTEM'23) organized by KIT-Kalaignar karunanidhi Institute of Technology, Coimbatore.
- **Mr. G. M. Pradeep** has attended and presented paper titled "CFD Analysis of Re-Entry Vehicle at Hypersonic Speed Using ANSYS Fluent" at 7thInternational Conference on Science, Technology, Engineering and Management (ICSTEM'23) organized by KIT-Kalaignar karunanidhi Institute of Technology, Coimbatore.
- **Mr. G. M. Pradeep** has attended and presented paper titled "Effect of Alkali Treatment on Wear Behaviour of Walnut Shell Reinforced Bio-Composites" at 1st International Conference on Advanced Materials, Manufacturing and Industrial Engineering - AMMIE 2023 organized by Vellore Institute of Technology (VIT), Chennai.

Faculties Participation

Dr. D. Magesh Babu

Publication

- Girija M.S., Tapas Bapu B.R., Magesh B.D., Madhu B., " A Variance Difference Method for Determining Optimal Number of Clusters in Wireless Sensor Networks" Ad-Hoc and Sensor Wireless Networks 2023, 55(3-4), pp. 321–339.

Dr. B. Madhu

Publication

- Girija M.S., Tapas Bapu B.R., Magesh B.D., Madhu B., " A Variance Difference Method for Determining Optimal Number of Clusters in Wireless Sensor Networks" Ad-Hoc and Sensor Wireless Networks 2023, 55(3-4), pp. 321–339.

Dr. V. Ramasamy

Publication

- Suhas Prakashrao Patil, G. Leela Prasad, Chappeli Sai Kiran, Sanjeev Kumar, **V. Ramasamy,** H. Mohammed Ali, "Surface roughness and topography of EDM machining of Inconel 718", Materials Today: Proceedings, 2023, ISSN 2214-7853, https://doi.org/10.1016/j.matpr.2023.02.444.

Mr. G. M. Pradeep

Publication

- Gokilakrishnan, G., Meenakshi, R., **Pradeep, G.M.** et al. Implementation of lean six sigma (LSS) techniques for tyre manufacturing in small and medium-sized enterprises. International Journal of System Assurance and Management, (2023). https://doi.org/10.1007/s13198-023-01917-0
- R. Kamala Kannan, G. M. Pradeep, K. Naran Raj, V. Naveenkumar, D. Ramesh Aravinth, G. Ravindranath Reddy," Influences of habitat on agriculture spatial assessment and economic evaluation for harm reduction", Advancements In Aeromechanical Materials For Manufacturing: ICAAMM-2021, AIP Conference Proceedings 2492, 050026 (2023), https://doi.org/10.1063/5.0137840
- R. Kamala Kannan, G. M. Pradeep, V. Jagadeesh, R. Jagadeesh, S. Kavin, Sri Ram Shivakumar," An autonomous seed material generation device for sugarcane, mechatronically integrated: A field of economic importance" Advancements In Aeromechanical Materials For Manufacturing: ICAAMM-2021, AIP Conference Proceedings 2492, 50025 (2023, https://doi.org/10.1063/5.0137842

Mr. N. Mohammed Abu Basim

Book Chapter Published

Title of The Book : Futuristic Projects in Energy and Automation Sectors: A Brief Review of New Technologies Driving Sustainable Development

Chapter Title : Farming 4.0 – Review of the Digitalized Agricultural Phenomenon using Disruptive Technologies, its Implementation, and Major Challenges

Authors : **Mohamed AbuBasim,** Nair Ajit

NPTEL Course

Faculty Development Program

Faculty Achievement

The faculty members from the department of Mechatronics Engineering, Velammal Institute of Technology has visited a list of polytechnic colleges and conducted the awareness program on **"Career Opportunities for Engineering students"** among students. In this session, the students actively participated in the interactive session and clarify their doubts then and there.

S.No	Faculty Name	Polytechnic College	Visit Date
1	Mr. G. M .Pradeep Mr. N. Mohammed Abu Basim	Sri Nallalaghu Nadar Polytechnic College, Puzhal,Chennai.	25.1.2023
2	Dr. D. Magesh Babu	1. P.T.Lee Chengalvayan Polytechnic. 2. Thai moogambigai polytechnic. 3. Thiru Sevan Hills Polytechnic .	20.4.2023
3	Dr. D. Magesh Babu	1. Govt. Polytechnic College. 2. TVS Polytechnic College. 3. Murugappa Polytechnic College.	28.4.2023

Outreach Activities

Students Corner

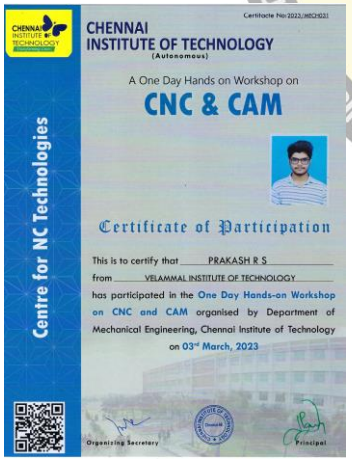
Students' Participation

- **Mr. R. Tamil Selvan & Mr. J. Jerine Selvakumar** from II Year Mechatronics Engineering has attended "One day Workshop on Wheels and Rims 2.0" on 25th February 2023 organized by Department of Automobile Engineering at KCG College of Technology.
- **Mr. J. Jerine Selvakumar, R. S. Prakash, R. Tamil Selvan, K. Sarathy & Mr. J. A. Joel Edward** from II Year Mechatronics Engineering has attended "One day Hands-on Workshop on CNC and CAM" on 03rd March 2023 organized by Department of Mechanical Engineering at Chennai Institute of Technology.
- **Mr. J. Jerine Selvakumar,** from II Year Mechatronics Engineering has completed "Two days Hands-on Training on Industrial Robotics"on 14th and 15th February 2023 organized by Department of Mechatronics Engineering at Agni College of Technology.

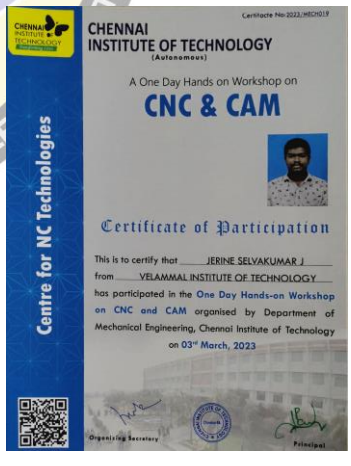

KCG COLLEGE OF TECHNOLOGY
Department of Automobile Engineering
Certificate of Participation
This is to certify that Mr / Ms. Tamil Selvan R.
from Velammal Institute Of Technology has attended
Wheels and Rims 2.0 Workshop on 25th Feb 2023.


KCG COLLEGE OF TECHNOLOGY
Department of Automobile Engineering
Certificate of Participation
This is to certify that Mr / Ms. Jerine Selvakumar J
from Velammal Institute Of Technology has attended
Wheels and Rims 2.0 Workshop on 25th Feb 2023.


Agni College of Technology
CERTIFICATE
OF APPRECIATION
This Certificate is Awarded to
JERINE SELVAKUMAR J
2nd Year Department of Mechatronics Engineering,
Velammal Institute of Technology has Successfully Completed
Two days Hands on training on Industrial Robotics at
Agni College of Technology on 14 & 15 th Feb 2023


CHENNAI INSTITUTE OF TECHNOLOGY
(Autonomous)
A One Day Hands on Workshop on
CNC & CAM
Centre for NC Technologies
Certificate of Participation
This is to certify that PRAKASH R S
from VELAMMAL INSTITUTE OF TECHNOLOGY
has participated in the One Day Hands-on Workshop on CNC and CAM organised by Department of Mechanical Engineering, Chennai Institute of Technology on 03rd March, 2023


CHENNAI INSTITUTE OF TECHNOLOGY
(Autonomous)
A One Day Hands on Workshop on
CNC & CAM
Centre for NC Technologies
Certificate of Participation
This is to certify that SARATHY. K
from VELAMMAL INSTITUTE OF TECHNOLOGY
has participated in the One Day Hands-on Workshop on CNC and CAM organised by Department of Mechanical Engineering, Chennai Institute of Technology on 03rd March, 2023


CHENNAI INSTITUTE OF TECHNOLOGY
(Autonomous)
A One Day Hands on Workshop on
CNC & CAM
Centre for NC Technologies
Certificate of Participation
This is to certify that JERINE SELVAKUMAR J
from VELAMMAL INSTITUTE OF TECHNOLOGY
has participated in the One Day Hands-on Workshop on CNC and CAM organised by Department of Mechanical Engineering, Chennai Institute of Technology on 03rd March, 2023

Students' Participation

- **Mr. S. Navin Babu and Mr. B. Mohankanth** from II Year Mechatronics Engineering has completed 6 Days Internship on Visil Technologies under the domain Basic Flutter App development from 11th February 2023 to 17th February 2023.
- **Mr. V. Vishnu and Mr. V. Dinesh Kumar** from III Year Mechatronics Engineering has completed 20 Days Internship training on Integrall Coach Factory (ICF) under the Title " Technician Mechatronics – Entry Level" from 6th March 2023 to 27th March 2023.
- **D,Mohanbabu, R.Karthik raj, R.Chandrabose, C.Immanuel Ebenezer, K.Gopinath, A.R.Mohammed Nafiz, S.Manoj, V.Dinesh Kumar, V.Vishnu, S,Dhanush kumar, H.L.Arun Prasad, S.Dhanush kumar and R.Shakil Ahammed** has attended Two days Webinar on MELSEC IQ-F FX5U PLC organized by Sri Eswar College of Engineering. From 24th February to 25th February.


INTERNSHIP COMPLETION CERTIFICATE


INTERNSHIP COMPLETION CERTIFICATE


RAIL KAUSHAL VIKAS YOJANA

CERTIFICATE

This is to certify that Mr./Ms. DINESHKUMAR.V

(Aadhar no 7609 3272 2824) has successfully cle

Assessment for the role of

TECHNICIAN MECHATRONICS - ENTRY LEVEL

Training Duration 06.03.2023 to 27.03.2023

Certificate No : RKVY/2023/16/TM-87
Training Centre : BTW/TTC/ICF
Date : 27.03.2023

PRINCIPAL
Technical Training Centre
Integral Coach Factory


RAIL KAUSHAL VIKAS YOJANA

CERTIFICATE

This is to certify that Mr./Ms. VISHNU.V

(Aadhar no 4559 5948 1820) has successfully

Assessment for the role of

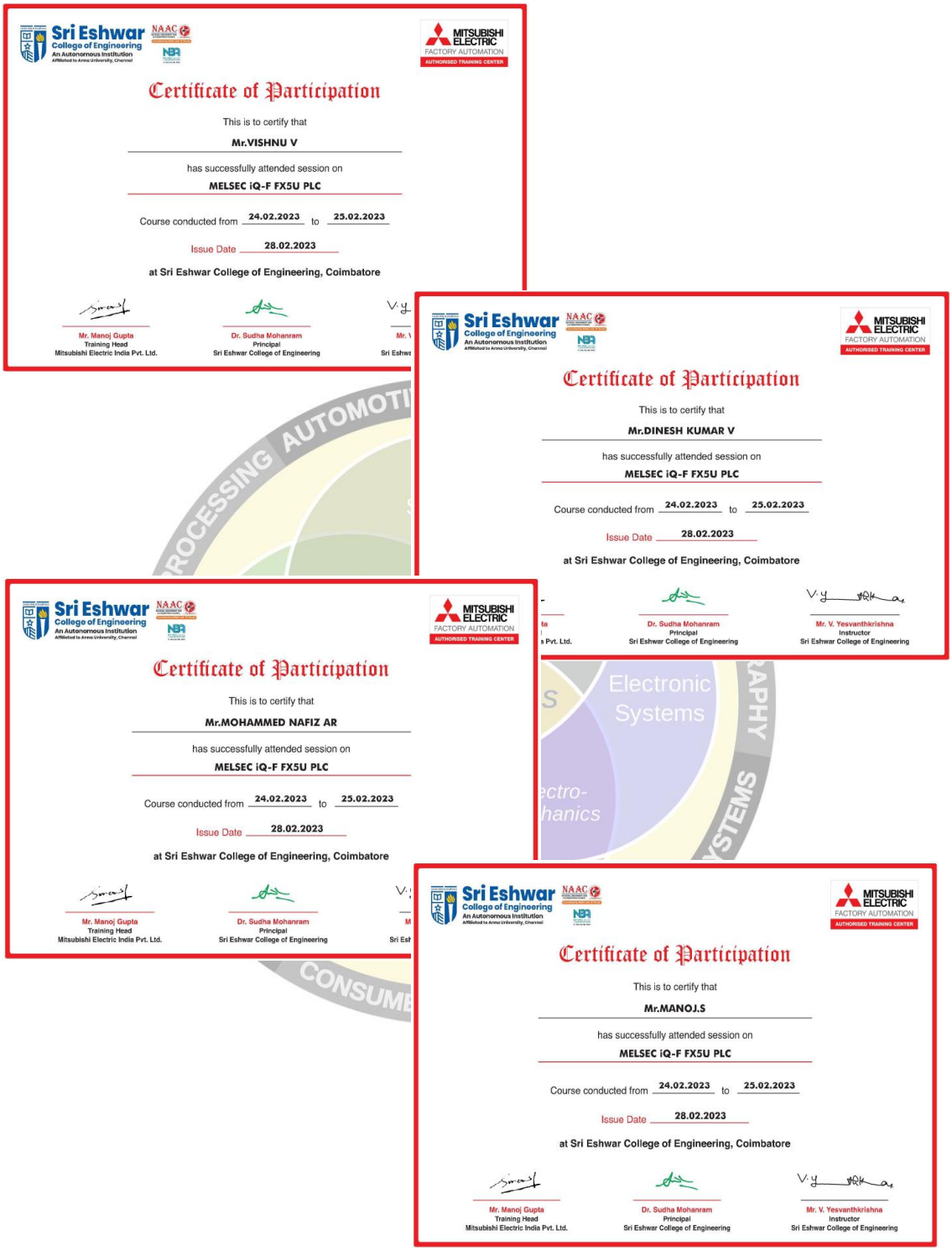
TECHNICIAN MECHATRONICS - ENTRY LEVEL

Training Duration 06.03.2023 to 27.03.2023

Certificate No : RKVY/2023/16/TM-91
Training Centre : BTW/TTC/ICF
Date : 27.03.2023

PRINCIPAL
Technical Training Centre
Integral Coach Factory

Students' Participation



Sri Eshwar College of Engineering
An Autonomous Institution
Affiliated to Anna University, Chennai

MITSUBISHI ELECTRIC
FACTORY AUTOMATION
AUTHORISED TRAINING CENTER

Certificate of Participation

This is to certify that

Mr.VISHNU V

has successfully attended session on

MELSEC iQ-F FX5U PLC

Course conducted from **24.02.2023** to **25.02.2023**

Issue Date **28.02.2023**

at Sri Eshwar College of Engineering, Coimbatore

Mr. Manoj Gupta
Training Head
Mitsubishi Electric India Pvt. Ltd.

Dr. Sudha Mohanram
Principal
Sri Eshwar College of Engineering

Sri Eshwar College of Engineering, Coimbatore

Sri Eshwar College of Engineering
An Autonomous Institution
Affiliated to Anna University, Chennai

MITSUBISHI ELECTRIC
FACTORY AUTOMATION
AUTHORISED TRAINING CENTER

Certificate of Participation

This is to certify that

Mr.DINESH KUMAR V

has successfully attended session on

MELSEC iQ-F FX5U PLC

Course conducted from **24.02.2023** to **25.02.2023**

Issue Date **28.02.2023**

at Sri Eshwar College of Engineering, Coimbatore

Dr. Sudha Mohanram
Principal
Sri Eshwar College of Engineering

Mr. V. Yesvanthkrishna
Instructor
Sri Eshwar College of Engineering

Sri Eshwar College of Engineering
An Autonomous Institution
Affiliated to Anna University, Chennai

MITSUBISHI ELECTRIC
FACTORY AUTOMATION
AUTHORISED TRAINING CENTER

Certificate of Participation

This is to certify that

Mr.MOHAMMED NAFIZ AR

has successfully attended session on

MELSEC iQ-F FX5U PLC

Course conducted from **24.02.2023** to **25.02.2023**

Issue Date **28.02.2023**

at Sri Eshwar College of Engineering, Coimbatore

Mr. Manoj Gupta
Training Head
Mitsubishi Electric India Pvt. Ltd.

Dr. Sudha Mohanram
Principal
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Certificate of Participation

This is to certify that

Mr.MANOJ.S

has successfully attended session on

MELSEC iQ-F FX5U PLC

Course conducted from **24.02.2023** to **25.02.2023**

Issue Date **28.02.2023**

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Principal
Sri Eshwar College of Engineering

Mr. V. Yesvanthkrishna
Instructor
Sri Eshwar College of Engineering

Students' Participation

- **Mr. A. Gowtham and B. Mohankanth** from II Year Mechatronics Engineering students has attended and presented paper titled "Face Recognition QR Code Register" at International Conference on Advanced Materials and Technologies for Industry 4.O -"ICAMT 4.O" organized by Bannari Amman Institute of Technology, Erode
- **Ms. L. Keerthana, Ms. R. Kaviya and Ms. G. Roshini Jasmine** from II Year Mechatronics Engineering students has attended and presented paper titled "Recent Advances in Smart Materials for the Engineering Applications(ISBN: 978-81-954872-2-6)" at 5th International Conference on Recent Innovations in Science & Technology organized by Holy Grace Academy of Engineering, Thrissur District, Kerala.


BANNARI AMMAN INSTITUTE OF TECHNOLOGY
International Conference on Advanced Materials and Technologies for Industry 4.0 - "ICAMT 4.0"
(March 23 & 24 - 2023)
CERTIFICATE OF PRESENTATION
This is to certify that the author Mohankanth B from VELAMMAL INSTITUTE OF TECHNOLOGY has presented a paper entitled FACE RECOGNITION QR CODE REGISTER in the International Conference on Advanced Materials and Technologies for Industry 4.0 -"ICAMT 4.O" organized by Department Of Mechanical Engineering, Bannari Amman Institute of Technology, Sathyamangalam, Erode, held during March 23 & 24 - 2023.
Convenor
Organising Secretary


BANNARI AMMAN INSTITUTE OF TECHNOLOGY
International Conference on Advanced Materials and Technologies for Industry 4.0 - "ICAMT 4.0"
(March 23 & 24 - 2023)
CERTIFICATE OF PRESENTATION
This is to certify that the author Goutham A from VELAMMAL INSTITUTE OF TECHNOLOGY has presented a paper entitled FACE RECOGNITION QR CODE REGISTER in the International Conference on Advanced Materials and Technologies for Industry 4.0 -"ICAMT 4.O" organized by Department Of Mechanical Engineering, Bannari Amman Institute of Technology, Sathyamangalam, Erode, held during March 23 & 24 - 2023.
Convenor
Organising Secretary


HOLY GRACE ACADEMY OF ENGINEERING
Mala, Thrissur, Kerala, India.
CERTIFICATE OF APPRECIATION
Certificate No: RIST23-1018-4
This is to certify that
Ms. ROSHINI JASMINE.G
VELAMMAL INSTITUTE OF TECHNOLOGY, CHENNAI, INDIA
has participated and presented a paper titled "RECENT ADVANCES IN SMART MATERIALS FOR THE ENGINEERING APPLICATIONS: REVIEW" in the 5th International Conference on "Recent Innovations in Science & Technology (RIST 2023)" conducted on 07th & 08th April 2023, organized by Holy Grace Academy of Engineering, Thrissur, India in association with ISET Research, India.


HOLY GRACE ACADEMY OF ENGINEERING
Mala, Thrissur, Kerala, India.
CERTIFICATE OF APPRECIATION
Certificate No: RIST23-1018-3
This is to certify that
Ms. KEERTHANA.L
VELAMMAL INSTITUTE OF TECHNOLOGY, CHENNAI, INDIA
has participated and presented a paper titled "RECENT ADVANCES IN SMART MATERIALS FOR THE ENGINEERING APPLICATIONS: REVIEW" in the 5th International Conference on "Recent Innovations in Science & Technology (RIST 2023)" conducted on 07th & 08th April 2023, organized by Holy Grace Academy of Engineering, Thrissur, India in association with ISET Research, India.


HOLY GRACE ACADEMY OF ENGINEERING
Mala, Thrissur, Kerala, India.
CERTIFICATE OF APPRECIATION
Certificate No: RIST23-1018-2
This is to certify that
Ms. KAVIYA.R
VELAMMAL INSTITUTE OF TECHNOLOGY, CHENNAI, INDIA
has participated and presented a paper titled "RECENT ADVANCES IN SMART MATERIALS FOR THE ENGINEERING APPLICATIONS: REVIEW" in the 5th International Conference on "Recent Innovations in Science & Technology (RIST 2023)" conducted on 07th & 08th April 2023, organized by Holy Grace Academy of Engineering, Thrissur, India in association with ISET Research, India.

NPTEL Courses

S. No	Student Name	Class	Course Name
1	H L Arun Prasad	III - Mechatronics	Microprocessors and Microcontrollers
2	S. Navin Babu	II - Mechatronics	Cloud Computing
3	Harish Baranidharan	II - Mechatronics	Introduction to Soft Computing (Elite)
4	R. Tamil Selvan	II - Mechatronics	Sensors and Actuators
5	G. S. Arunachaleswaran	II - Mechatronics	Machine Learning

Students' Achievements

Students' Achievements


GATE Scorecard

Name of Candidate	VISHNU V
Parent's/Guardian's Name	VASUDEVAN V
Registration Number	ME23S27405133
Date of Birth	07-Apr-2003
Examination Paper	Mechanical Engineering (ME)

GATE Score:	323	Marks out of 100:		26	
All India Rank in this paper:	10377	Qualifying Marks*	General	EWS/OBC (NCL)	SC/ST/PwD
Number of Candidates Appeared in this paper	63489		28.4	25.5	18.9

Valid up to 31st March 2026

Prof. Preetamkumar M. Mohite
Organizing Chairman, GATE 2023
on behalf of NCB-GATE, for MoE

Mr. V. Vishnu from III Year Mechatronics Engineering has cleared Gate Exam 2023 in the domain of Mechanical Engineering

Mr. R. Karthik Raj, Mr. Akash Kumar Mahto and **Mr. Dhanush Kumar** from III Year Mechatronics Engineering has won **1st Prize** in INNOVATE 23 – An Intra College Project Contest held on 19th April 2023 for his innovative work on "Remote Controlled Robot to Assist Patients"

Mr. D. Mohan Babu from III Year Mechatronics Engineering has won **3rd Prize** in Anna University Zonal – Cricket Match held at Gojan School of Business and Technology. Our College Management honoured the whole cricket team with cash prize worth of Rs. 4800.

Mr. Raj Pandian (Yellow House) from II Year and **Mr. D. Mohan Babu** (Blue House) from III Year Mechatronics Engineering has won Foot ball match during Intra College Sport meet.

Anna University End Semester Examinations November/December 2022

II Year Mechatronics Engineering

G. Roshini Jasmine
Rank : 1st
GPA : 8.40

A. Gowtham
Rank : 2nd
GPA : 8.36

B. Mohankanth
Rank : 3rd
GPA : 8.24

III Year Mechatronics Engineering

V. Vishnu
Rank : 1st
GPA : 9.04

H. L. Arun Prasad
Rank : 2nd
GPA : 8.96

V. Dinesh Kumar
Rank : 3rd
GPA : 8.84

Class Toppers

Fire Fighting Robot

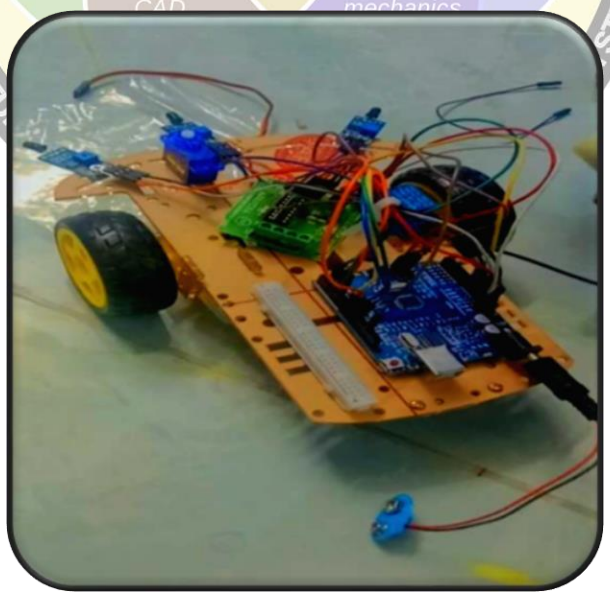
Team Members

S. Manoj, V. Dinesh Kumar, C. Immanuel Ebenezer

Supervisor

Dr. D. Magesh Babu

Fire fighting is an important job but it is very dangerous occupation. Due to that, Robots are designed to find a fire, before it rages out of control. It could be used to work with fire fighters to reduce the risk of injury to victims. This paper presents the Fire Fighting Robot competition that purposely to simulate the real-world operation of an autonomous robot to rescue 10 victims (table tennis balls) and stop 5 fires (emergency candles) in a house within three minutes. The robot development is consisting of three elements which is the hardware, electronic, and programming. The robot has three DC motor, two for driving system and another single DC motor for ball suction subsystem and the fire blowing subsystem. Various sensors are also interfaced with PIC16F877A as a feedback to the robot such as photoelectric sensors, fiber optic sensor and RGB color sensor.



Remote Control Based Robot to Assist Patients

Team Members
R. Karthik Raj, S. Dhanush Kumar, Akash Kumar Mahato

Supervisor
Mr. N. Mohammed Abu Basim

This project is to make a robot which will be helpful for mankind. This robot will collect data from remote place and able to send those data to a remote IoT cloud database. This robot will be controlled via android mobile phone. We can control the movement of the robot by sending instructions via Bluetooth from our android phone. The robot will receive the instruction via the Bluetooth module or Wi-Fi module and process the data with Arduino microcontroller. Then it will move the robot in all direction with the help of motor driver L298N by following the instructions received from android mobile phone. Then the robot will collect data of temperature and humidity from that place with the sensor and send those data via Wi-Fi to the cloud database with the help of node. Then the data will be shown as well as the remote place can be monitored from anywhere in the globe from the internet server used.

Hand Gesture Controlled Robot Using RF433 Modules & ADXL335

Team Members
AR Mohammed Nafiz, R. Shakil Ahamed, V. Vishnu, D. Mohanbabu

Supervisor
Mr. G. M. Pradeep

Now-a-days, as a result of the advancements in technology, human-machine interaction is widely increasing that reduces the gap between machines and humans for easy standard of living. Gestures have played a vital role in diminishing this gap. Robots are playing a crucial role in automation across all the sectors like construction, military, medical, manufacturing, etc. This paper describes regarding how the conventional hand gestures can control a robot and perform our desired tasks. The transmitter will transmit the signal in line with the position of accelerometer and your hand gesture and therefore the receiver will receive the signal and make the robot move in respective direction.

Student Projects

Heart Beat Monitoring System with Arduino

Team Members
L. Keerthana, R. Kaviya, G. Roshini Jasmine
Supervisor
Dr. V. Ramasamy

Heartbeat Sensor is an electronic device that is used to measure the heart rate i.e. speed of the heartbeat. Monitoring body temperature, heart rate and blood pressure are the basic things that we do in order to keep us healthy. In order to measure the body temperature, we use thermometers and a sphygmomanometer to monitor the Arterial Pressure or Blood Pressure. Heart Rate can be monitored in two ways: one way is to manually check the pulse either at wrists or neck and the other way is to use a Heartbeat Sensor. In this project, we have designed a Heart Rate Monitor System using Arduino and Heartbeat Sensor. You can find the Principle of Heartbeat Sensor, working of the Heartbeat Sensor and Arduino based Heart Rate Monitoring System using a practical heartbeat Sensor.

Student Projects

Pan Tilt Servo Mechanism and Surveillance

Team Members
B. Mohankanth

Supervisor
Dr. V. Ramasamy

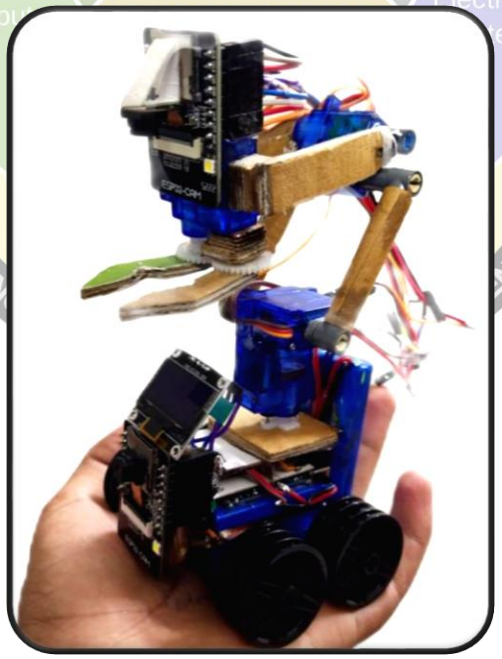
Pan-tilt servo mechanism is a system that allows a camera or other sensor to move horizontally (pan) and vertically (tilt) in order to cover a wider area of view. This mechanism is commonly used in surveillance systems to enable the camera to track movement and capture images or video from multiple angles. In a surveillance system, the pan-tilt servo mechanism can be combined with other hardware and software components to create a comprehensive surveillance.

Personal Desktop Robot (MYCROW)

Team Members
B. Mohankanth

Supervisor
Dr. V. Ramasamy

MYCROW is designed to sit on a desk or workstation and assist the user with various tasks. It typically consists of a small, compact robotic arm or similar mechanism, controlled by software and electronics that allow it to perform specific functions. The ESP32-CAM module can be used as a camera to enable additional features such as facial recognition, object detection, and video streaming. Here are some examples of how the ESP32-CAM can be used as a personal assistant The ESP32-CAM can send you personalized notifications based on your preferences, such as weather updates or reminders for upcoming appointments.



Smart Surveillance Adaptor

Team Members
B. Mohankanth

Supervisor
Dr. V. Ramasamy

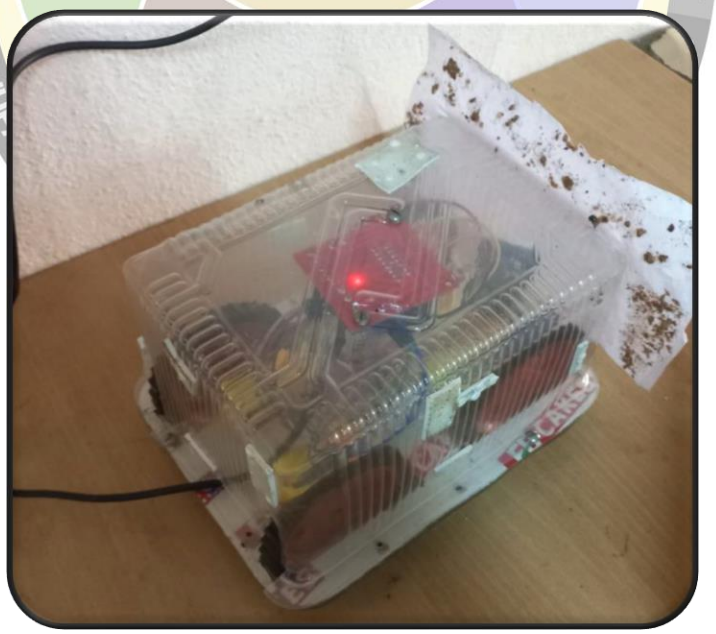
Device that can be used to enhance the functionality of existing surveillance systems and automation of the adaptor using cloud database like (AWS, BLYNK, Google etc..). It typically involves the integration of various sensors, cameras, and other equipment, with intelligent software that can analyze data in real-time. Using a relay, capacitive switch, and ESP32-CAM can offer a variety of features to make it a versatile and useful tool for controlling and monitoring electrical devices. ESP32-CAM can offer a range of features that make it a useful tool for controlling and monitoring electrical devices remotely.

Spy Stone

Team Members
R. Syed Haseebur Rahman, B. Harish, R. TamilSelvan,
J. Jerine Selvakumar

Supervisor
Mr. N. Mohammed Abu Basim

The SPY STONE is a portable device that incorporates an ESP32-CAM module, L298N motor driver, and battery. This device can be moved around by controlling the motor using the ESP32-CAM module. The device can be used for surveillance or other applications where remote access to a camera is necessary. In this project, we assembled the hardware components and programmed the ESP32-CAM module to control the motor. We then tested the device and made adjustments to ensure that it functioned properly. The SPY STONE provides a low-cost and versatile solution for remote surveillance and other applications where a portable camera is needed.



Student Projects

Smartphone Controlled Robot Car Using Bluetooth Module

Team Members

H. L. Arun Prasad, R. Chandra Bose, K. Gopinath

Supervisor

Dr. V. Ramasamy

The aim of this project is to develop a prototype of a smartphone-controlled robot car that performs a various function in order to provide a very powerful and versatile robot while also reducing the hardware usage as much as possible. In this project, Arduino UNO is used as a central component, to which all the other components are interfaced. The designed vehicle is controlled wirelessly through a smartphone with the help of a Wi-Fi module. On detecting an obstacle, a notification is sent to the smartphone and the robot performs pick and place operation with the help of a robotic arm mounted onto the vehicle. A combination of Temperature sensor, Gas sensor and Fire sensors are used to provide explosion sensing and detection and a buzzer goes on with the detection of explosion prone region. Further, a live surveillance is provided to monitor every movement of the vehicle.

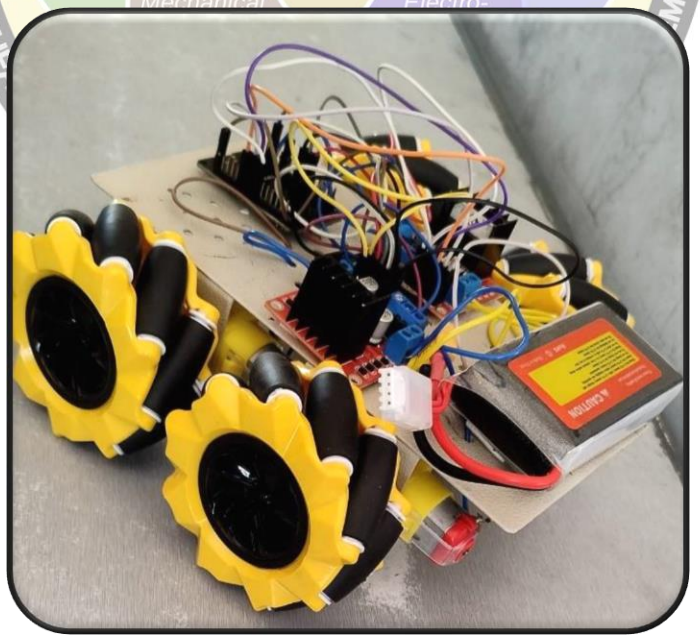
Student Projects

Driving Innovation Using Mecanum Wheel

Team Members
G. S. Arunachaleswaran, R. Mukesh, S. Navin Babu,
M. Pugazhenthi

Supervisor
Mr. G. M. Pradeep

This project aims to design, develop, and implement an automation system that uses mecanum wheels for locomotion. Mecanum wheels are unique in their ability to move in any direction, making them ideal for applications such as indoor transportation, robotics, and material handling. The project will involve building a prototype mecanum wheel platform and developing control software to enable autonomous motion. The system will be tested for its ability to follow predefined paths and avoid obstacles, and its performance will be evaluated in terms of speed, accuracy, and efficiency. The project aims to demonstrate the potential applications of mecanum wheels in automation and to provide a basis for further research and development in this area



Student Projects

Roboneir
Volume 1 Issue 2

Department of
Mechatronics Engineering

Technological Insights

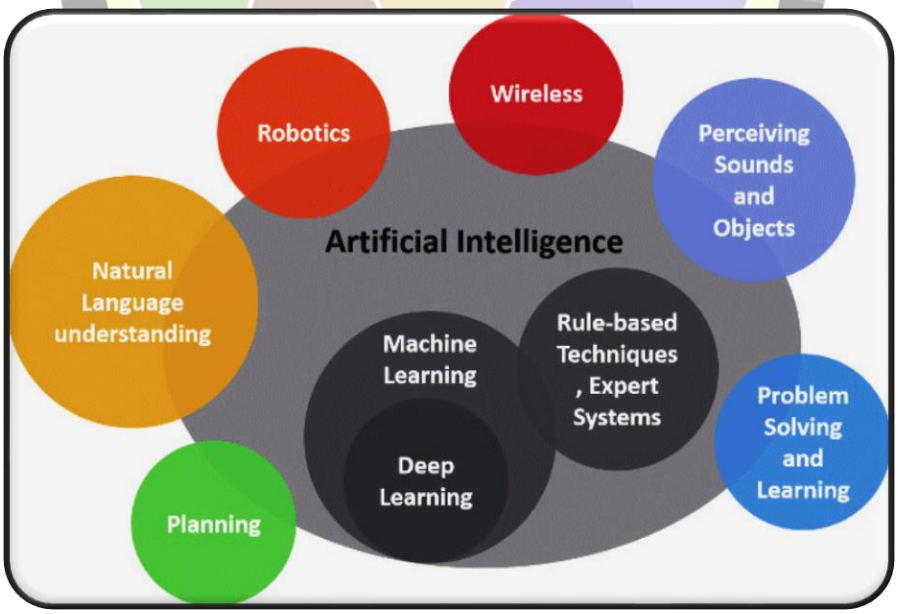
Velammal Institute of Technology

Top 10 Trending Technologies

No. 1

AI and Machine Learning

This year AI and ML will continue to emerge as the most transformative technologies of the current times. Leaving for a business trip tomorrow? Your intelligent device will automatically offer weather reports and travel alerts. Planning a marketing campaign? Your AI assistant can instinctively segment your customers into groups for targeted messaging and increased response rates. According to the IHS report, in 2015, the install rate of AI-based systems in new vehicles was only 8%; this number is expected to increase to 109% in 2025. The average annual salary for AI engineers in the US is over $110K. In India, the entry-level annual average AI engineer salary is around 8 lakhs. An experienced AI engineer can earn as high as 50 lakhs to 1 crore per annum. Be it Google, IBM, Facebook, or any other tech giants you can think of, they are putting Artificial Intelligence in front of everything. The future belongs to this technology. And there's a dire need for skill sets in these domains.

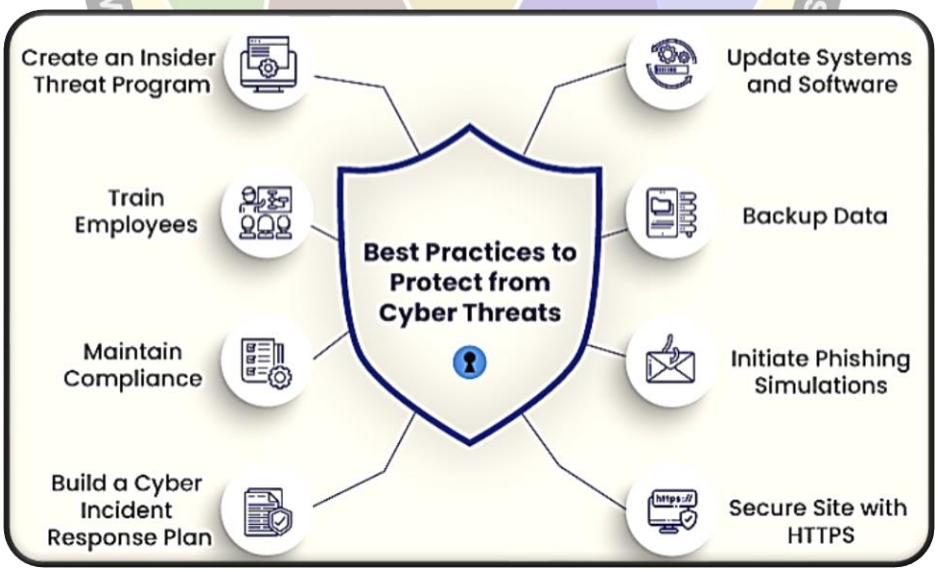


Top 10 Trending Technologies

No. 2

Cybersecurity

In the fast-growing Tech-world, where there is a new tech trend now and then, global cyber crimes are increasing at an even bigger rate. A new report from McAfee estimates that global cybercrime losses are now more than $1 trillion. The threat is urgent, the stakes are incredibly high and there aren't enough highly educated and qualified Cyber security experts to meet the demand. That's why companies are paying high salaries for well-trained cybersecurity professionals — and that's the reason why learning and upskilling in cybersecurity could be the best investment for you today. The average cyber security salary in India is INR 7,00,000 per annum and in the United States, it is $115,867 per annum. A recent LinkedIn search for "cybersecurity" resulted in more than 50,000 search results. Other well-known companies with cybersecurity job postings on Indeed include Deloitte, Paypal, AT&T, IBM, Oracle, and Apple. If there was ever a time to enter the cybersecurity field, it is now.

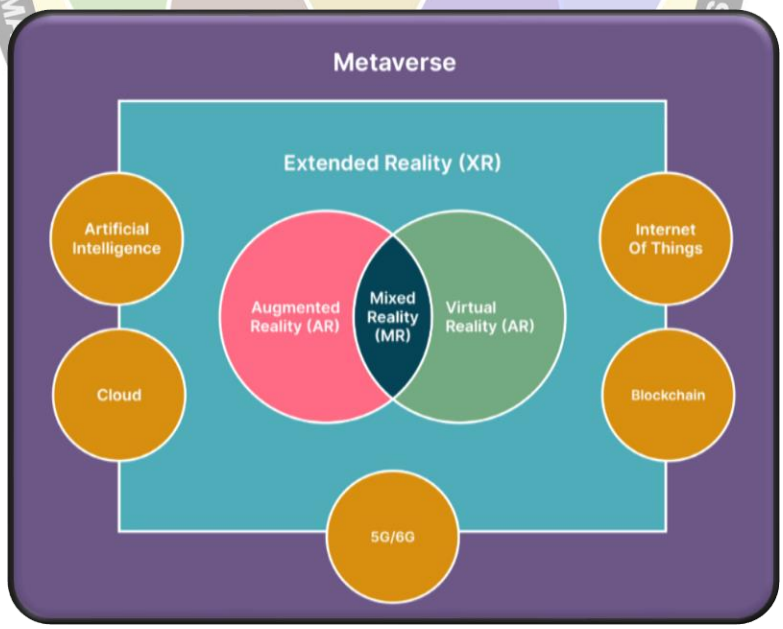


Top 10 Trending Technologies

No. 3

METAVERSE

Mark Zuckerberg describes the metaverse as "the internet that you're inside of, rather than just looking at it." The metaverse is a network of shared, immersive virtual worlds where people can connect with friends, create and play games, work, and shop. The tech giants have already started building metaverse-like experiences, such as virtual fashion shows, live concerts, and workspaces. Metaverse can give a realistic approach where students can learn everything more intimately. According to a report, Facebook will create around 10000 jobs in the next five years via the metaverse. As per the Goldman Sachs forecast, the metaverse market size will be worth $2 to $12 trillion in the future. Many big brands like Disney, Hyundai, Gucci, Samsung, Adidas, and Nike have identified the potential for business value in the metaverse and have come up with innovative metaverse-based initiatives. The world is gearing up for the Metaverse. Are you?

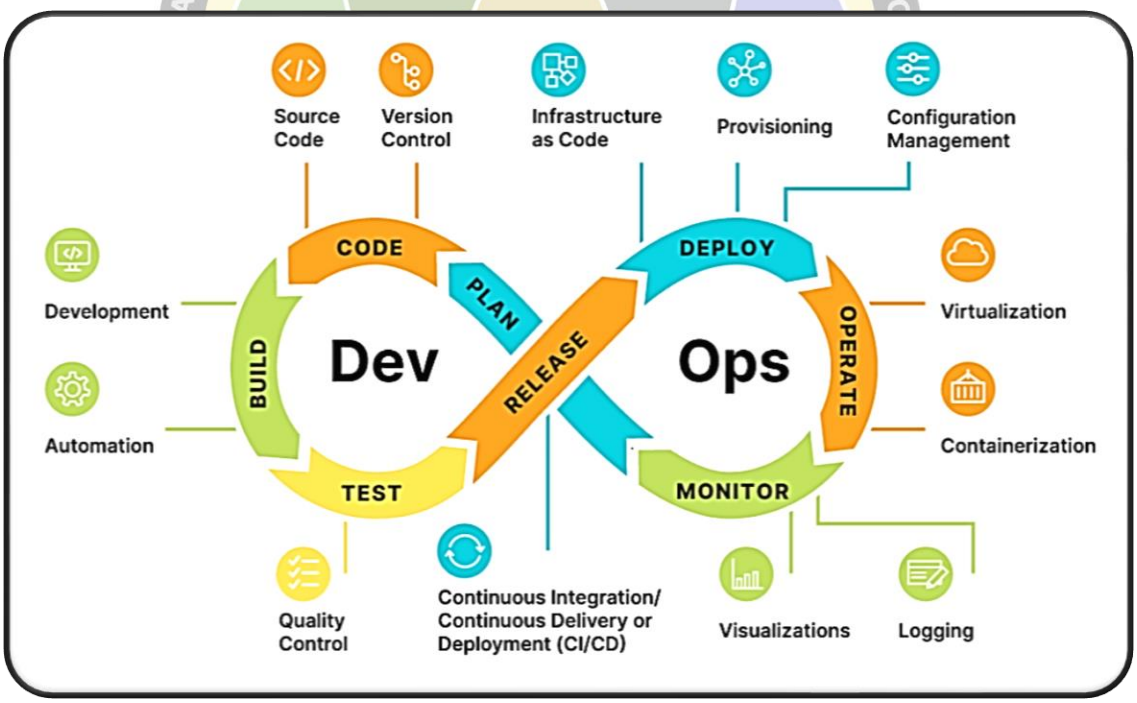


Top 10 Trending Technologies

No. 4

Devops

In its most basic form, DevOps is a collaboration of the development and operations teams. There are significant changes in the DevOps ecosystem that makes it stand beyond any other tech advancements. New practices, technologies, and trends are making DevOps an exciting place to be right now – and in the future. According to Indeed.com, there are 18,000+ jobs available for Devops in India and according to Linkedin, there are 144,000+ jobs in the United States. A DevOps Engineer can earn up to 28 Lakhs per annum in India. In the United States, a DevOps Engineer can earn up to $145,000. A few companies that are on a hiring spree for DevOps engineers include Amazon, Netflix, Target, Walmart, Meta, Etsy, and Adobe.

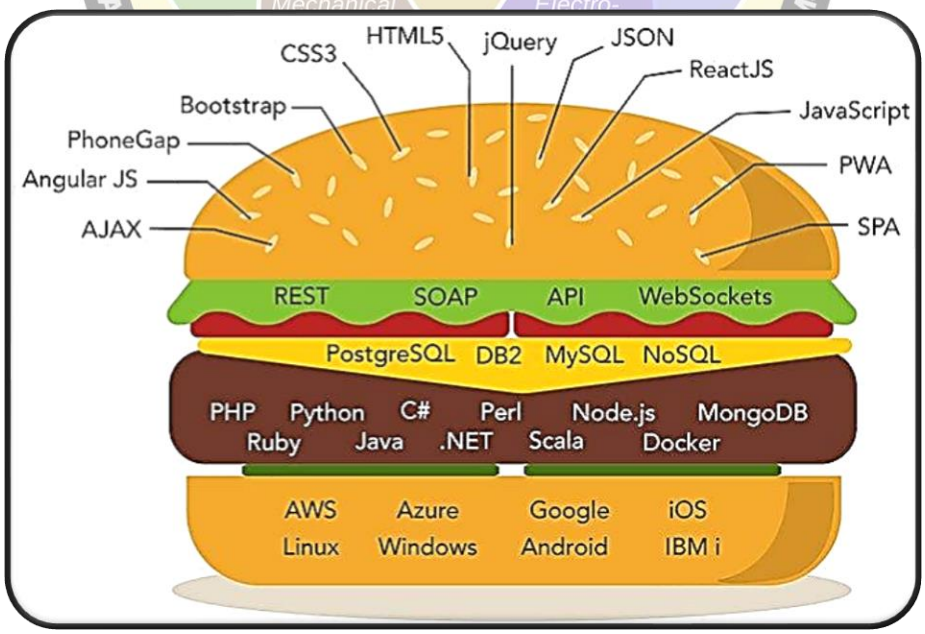


Top 10 Trending Technologies

No. 5

Full Stack Development

Full Stack web developers can easily handle the work of 2-3 developers due to their expertise in multiple areas. A Full Stack web Developer is a software expert who's equally proficient in frontend development and backend development. According to a report from LinkedIn, the demand for full-stack web developers has been increasing by 35% each year since 2015. Another report from the US Bureau of Labor Statistics states that the number of jobs available for these professionals will increase from 135,000 to over 853,000 by 2024. An experienced full-stack web developer can earn anywhere between 16 to 20 Lakhs Per Annum in India.According to Glassdoor, The average salary for a full-stack web developer in the US is $109,393. TCS, Infosys, Cognizant, IBM, HCL, and Accenture are a few companies that are on a constant lookout for Full-stack web developers. If you incline to dabble with technology and want to dive into the world of Full Stack web Development.

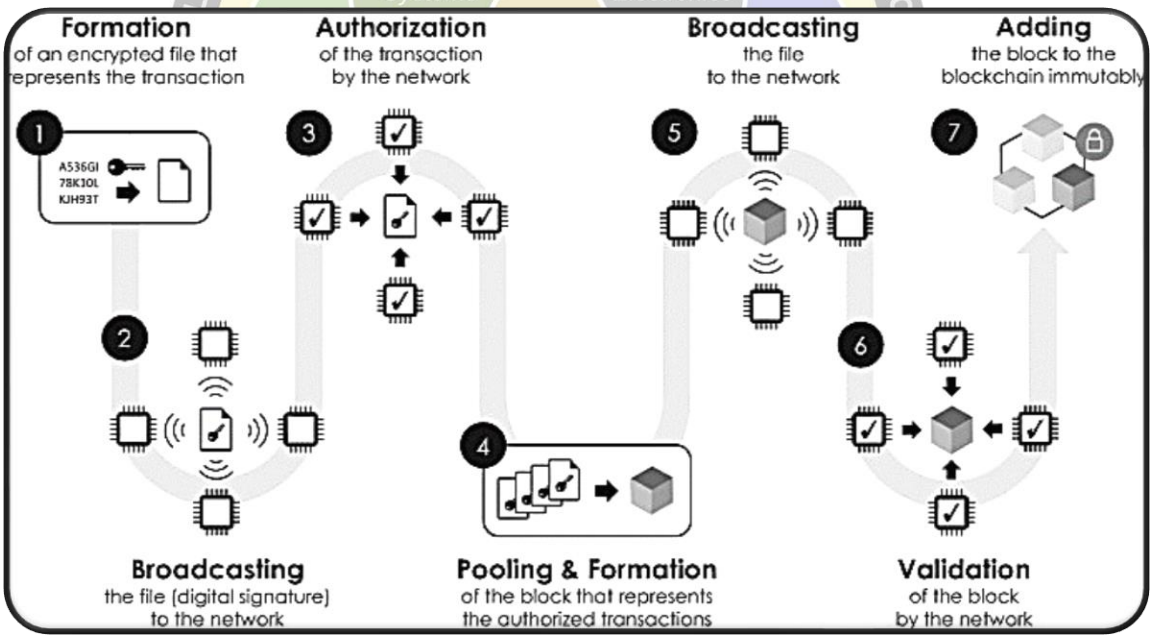


Top 10 Trending Technologies

No. 6

Blockchain

Blockchain applications go far beyond cryptocurrency and bitcoin. Gartner forecasts that the business value generated by blockchain will grow rapidly, reaching $176 billion by 2025 and $3.1 trillion by 2030. The average salary of a blockchain developer in India is 8 lakhs per annum. With 5-7 years of work experience, a blockchain developer can expect to receive close to 45 lakhs annually. A blockchain developer's average salary in the US is $136,000. Some of the companies that hire blockchain developers are Infosys, TCS, Accenture, Tech Mahindra, and Capgemini India Pvt Ltd.

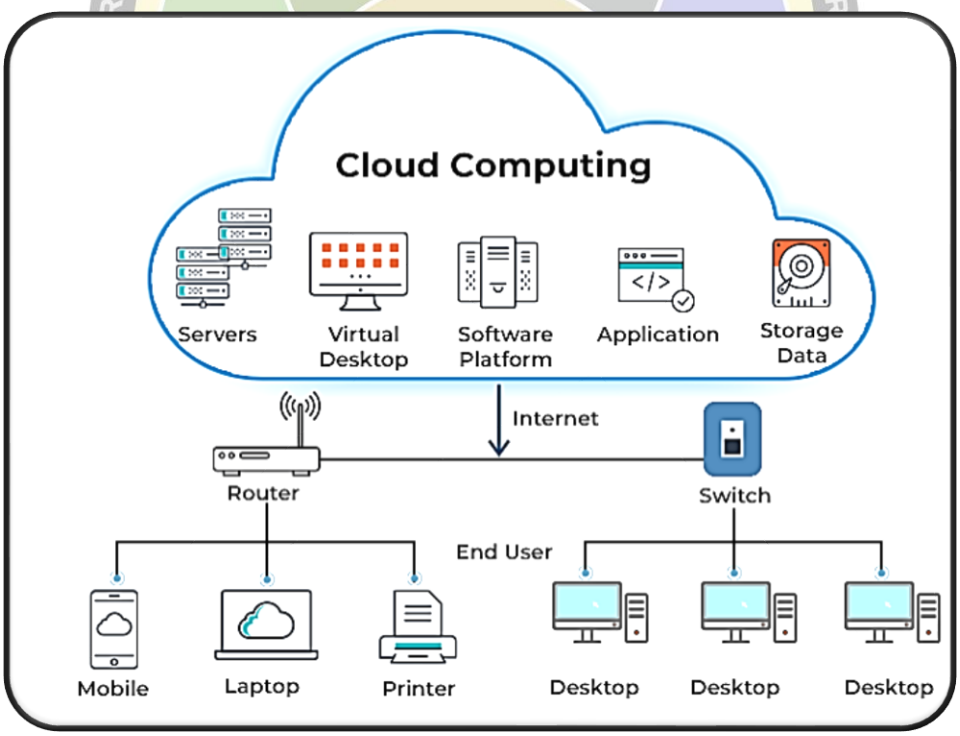


Top 10 Trending Technologies

No. 7

CLOUD COMPUTING

At this point, using cloud services is no longer optional. To remain competitive, one has to embrace the cloud and commit to modernizing their IT, Healthcare companies are using the cloud to develop more personalized treatments for patients. Financial services companies are using the cloud to power real-time fraud detection and prevention. And video game makers are using the cloud to deliver online games to millions of players around the world. Companies like General Electric, Apple, Netflix, Google, and eBay are looking out for cloud professionals. Cloud architects can earn between 10 LPA to 20 LPA, depending on their job role and expertise in India. In the United States, the salary range typically falls between $119,908 to $140,836.

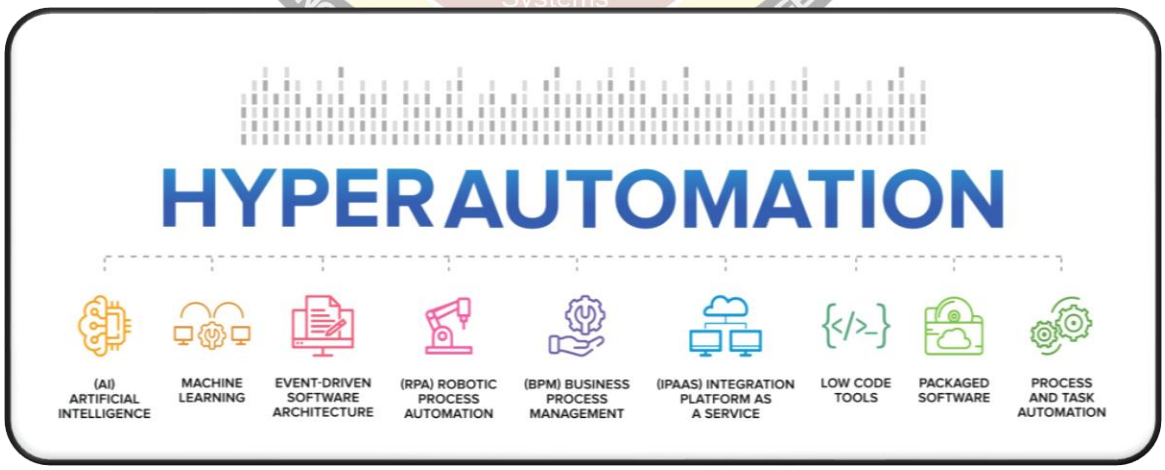


Top 10 Trending Technologies

No. 8

Hyper-Automation

Hyper-Automation involves the use of multiple technologies like Artificial intelligence, Machine Learning, and Automation technologies such as Robotic Process Automation, Natural Language Processing to automate as many business processes as possible. Techies who know Hyper Automation earn an average salary of 28 lakhs in India and $127,000 in the United States. The world's Prominent Companies that are Operating in Hyper Automation Market are TCS, UiPath, Wipro, Infosys, Automation Anywhere Inc., and Appian to name a few. Gartner predicts that by 2024, the drive towards hyper-automation will lead organizations to adopt at least three out of the 20 software that enables hyper-automation. At the same time, though, human involvement in workflows is both necessary and desirable. Compliance requires human oversight and customers often want to engage directly with another person, even when digital solutions are effective. Done right, hyperautomation delivers the efficiency and insights that advanced tools can provide with a human touch when it provides important oversight and customer value. The result is greater operational agility and reduced risk.

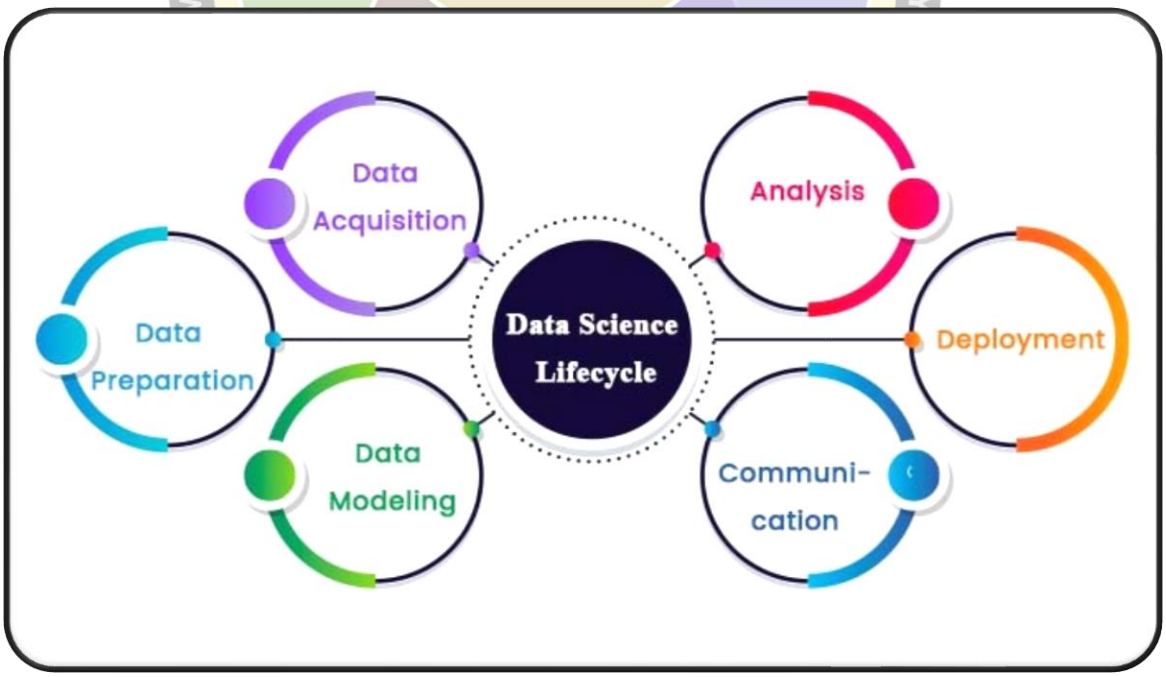


Top 10 Trending Technologies

No. 9

Data Science

No wonder why Data Science makes it to this list of trending technologies. The rapid increase in data has made data science an attractive career choice. Data scientists source data, clean it, then develop models and algorithms to unearth patterns in the data. US News ranks data scientists at #3 on its list of the best jobs in technology, and at #6 among all jobs. There has been a 650% increase in data science jobs since 2012 and another 11.5 million jobs are expected to be added by 2026. The annual average salary for a Data Scientist in the US is a whopping 111,000$, in India the average salary of a Data Scientist is 11 Lakhs per annum. Organizations like Microsoft, JPMorgan Chase & Co., Amazon, EY, and PwC are hiring Data Scientists across the globe.

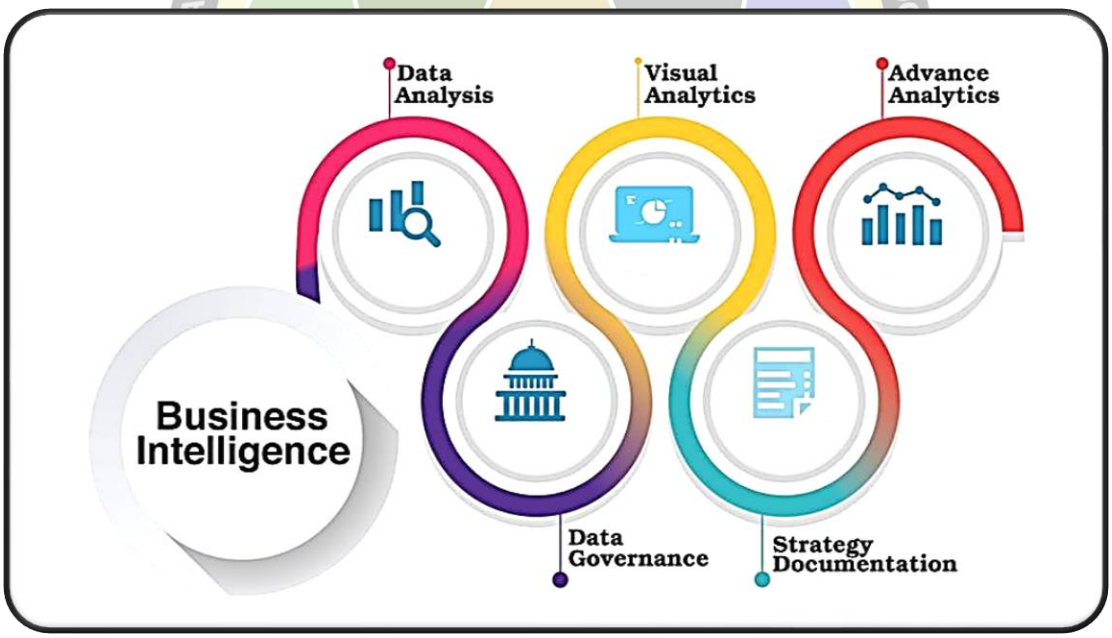


Top 10 Trending Technologies

No. 10

Business Intelligence

Business Intelligence transforms a pool of raw data into useful information that helps make decisions and leads to actions that yield positive bottom-line impact. From financial institutions like American Express to social media giant Facebook, the most advanced and successful companies in the world leverage the power of BI. The earning potential of experienced Power BI developers is incredibly high. The average salary of a BI expert is 9 lakhs per annum in India and $134,000 in the United States. A few organizations using this technology include SAP, Microsoft, Azure, Mphasis, Capgemini, Accenture, Sony, and Infosys.



Roboneir

Volume 1 Issue 2

Never complain about the difficulties in life, Because a director (God) always gives the hardest roles to his best actors.

Dr. A. P. J. Abdul Kalam

Thank You