VES Institute of Technology

NEWSLETTER : EIGHT EDITION

DEPARTMENT OF AUTOMATION & ROBOTICS

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Editorial

Resumption of offline mode after the COVID-19 pandemic brought back the hands-on learning with laboratories being recommenced and students taking up internships at various firms. This year, the Department of Instrumentation presented one of the best placement ratio throughout the institute with students being offered jobs in both, Core and IT companies. Conduction of workshops across distinguished domains, research publications in notable journals and organization of immersive learning activities remain the highlights of the year.

We are glad to present to you the eight edition of INNOVETA - an amalgamation of diverse technical testimonials carried out by the department in the year 2022-23.

VISION OF THE DEPARTMENT

To contribute at National as well as International level for excellence in technical education and research in the field of instrumentation and control by creating proactive, noble personalities and integrated individuals who will use the knowledge and be fully dedicated to the progress of society.

MESSAGE FROM DEPARTMENT

Dr. Kadambari Sharma (Asst.Prof)

India is working towards creating its own Silicon Valley, increasing its own electronics production. For this, India is promoting research and development in the Electronics sector. The aim is to create a strong ecosystem of Indian manufacturers, designers and innovators that can promote the growth of the electronics industry in the country and reduce the import of electronic items.

On the same lines, the future of Automation and Robotics in India is also very alluring. After realising these technologies & potential, the government has launched several initiatives to promote their growth. Many Indian companies and startups are investing tremendously in this area. India is set to become the hub of innovations in these fields.

Indian manufacturers are increasingly adopting automation technologies like robotics and the internet of things to improve productivity and improve product quality. As a major agricultural producer, implementing robotics and automation in farming would greatly improve efficiency and yield.

Looking into the high prospects of Automation and Robotics, our department has stepped forward and, with its experienced faculties and state-of-the-art laboratories, is helping the nation build amicable, caring, skilled and intelligent automation and robotics engineers.

PHD Accomplishments

Dr. (Mrs.) Sangeetha Prasanna Ram

- **PhD title :** "Application of Kalman Filter Techniques in Nuclear Data Science"
- **PhD guide:** Dr. (Mrs) J. M. Nair

Dr. (Mrs.) Kadambari Sharma

- **PhD Title :** "Characterization and Measurement of Non-optical Parameters with high resolution and accuracy using Distributed Optical Fibre System"
- **PhD Guide:** Dr. (Mrs) J. M. Nair, Dr. P. P. Vaidya

Internship & Training

- B&R Automation
- IMA-PG India Pvt Ltd
- R.K. Controls
- Nice Counsltancy,
- Perfect Instruments and Control
- AGV SYSTEMS
- JSW, Salav.
- Pidilite Industries Limited
- Powercubby
- Sudarshan Chemical Industries Limited
- Jacobs Solutions Ind Pvt Ltd
- Emerson Automation Solutions
- Endress+Hauser
- HIL

- Rashtriya Chemical Fertilizers (R.C.F.)
- DSP Logics
- R. K. DUTT CONCERNS
- Atul Ltd.
- Precision Mass Products pvt. ltd.
- Sierra Instrumentation and Control
- AGV Systems, Ambernath
- Reliance industries ltd
- Impetus Techsoft PVT LTD (thane)
- BPCL MUMBAI REFINERY
- BEC CHEMICALS PVT LTD, ROHA Raigad

No. of Students placed: 46   No. of Students Eligible: **61**

Our Recruiters

Workshop / Courses Attended by Faculty

- **Dr.Nilima Warke :**
  - SMART BHARAT: Applications of IOT in the multidisciplinary domain(One Week)
  - Advances in Electric Vehicle Industry (One Week)

- **Jayassree Ramakrishnan:**
  - Digital Image Processing- NPTEL-FDP Course(12 Weeks)

- **Dr.Kadambari Sharma :**
  - Regression Analysis(12 Weeks)

Workshop Conducted By Faculty

- **Kader Shaikh & Prasad Godse:**
  - Hands-on training in Automation Workshop(4 Days) from 4th - 7th April 2022 - on Ideation using LabVIEW(30Hrs)

Research Paper Published By Faculty

- **Dr.Sangeetha Prasanna Ram,Dr.(Mrs) J.M. Nair, & Suryanarayana V S, S Ganesan**
  - Published an International Journal Paper about the Application of Kalman filtering technique for evaluation of neutron cross-section data of 100Mo (n, 2n) 99Mo reaction

Research Paper Published By Faculty

- **Dr. Sangeetha Prasanna Ram**
  - Published an international journal Paper about the Application of Machine Learning Algorithms in the Identification of Anaemia Diseases
  - Published an international journal Paper about the Non-Linear Unscented Transformation Techniques for Error Estimation of HPGe Detector Efficiency

- **Dr.(Mrs) J. M. Nair & Madhumati Khuspe**
  - Published an International Journal Paper about the 6th International Conference on Computational Vision and Bio-inspired Computing about Random Matrix Theory Application for Denoising Gene Co-expression Date

- **Dr. Kadambari Sharma, Dr.(Mrs) J. M. Nair & Dr. P. P. Vaidya**
  - Published an International Journal Paper about the Design and Construction of an Analogue Signal Processing System for Distributed Fiber Optic Sensors
  - Published an International Journal Paper about the A System Design Perspective for Measurement of Parameters Using Different Scatterings Associated with Fiber Optic Sensors
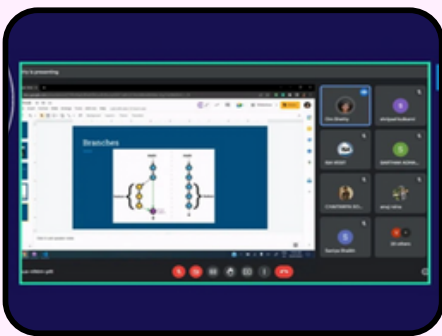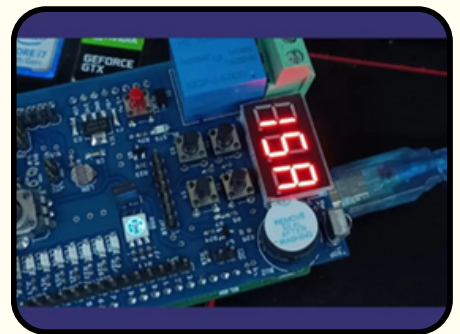
ISA-VESIT

ISA-VESIT is the official student section of the International Society of Automation (ISA) at VESIT. It provides a plethora of facilities that give exposure to all the various domains which in turn benefit the students of VESIT through its various project-oriented workshops, technical events, initiatives, international conferences, and lots more.

TECHNICAL WORKSHOPS

IOT BOOTCAMP:
Speakers: Mr. Shripad Kulkarni, Ms. Hrutika Pakhale, Ms. Nidhi Mundhada, Mr. N. Gopalakrishnan (14th - 25th of March 2022)
The Fundamentals and advanced IoT concepts were covered in this boot camp. Participants built projects like Blinking LEDs in loops, Alarm buzzers, Glowing LDR, and Controlling LED speed, Bluetooth Voice Controller, BLE Server Data Transfer, Wi-Fi Web Server, and Firebase Real-time database were discussed and built.

WEBAPP USING FIREBASE:
Speakers: Mr. Shripad Kulkarni, and Mr. Om Shetty (2nd - 3rd July 2022)
ISA-VESIT conducted a workshop on the development of web applications using Firebase. . The participants were acquainted with Git and GitHub, how to use it, various Git commands and how to clone GitHub repositories. The fundamentals of HTML, CSS and JavaScript were also covered. The various advantages of Tailwind CSS were explained along with Firebase and its various services. A web application was built wherein authentication and login were implemented.

8051 EMBEDDED C PROGRAMMING:
Speaker: Mr. N. Gopalakrishnan (30th July, 6th August & 13th August 2022)
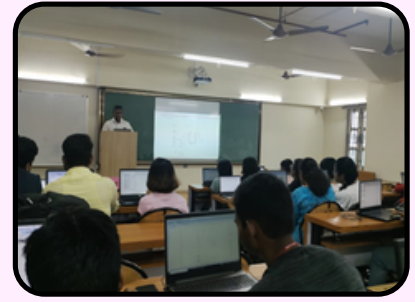This three-day workshop started with basic ideas about embedded systems & their current market trends. Based on the MS51 board, this workshop covered its different modes and functions. Participants got acquainted with the configuration and application of the board. They worked on projects like blinking single LED, 4x4 LED, Running LED and Binary counter, and concepts like accessing the timers & counters of the 8051 board.

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PCB Design:

Speaker: Mr. N. Gopalkrishnan (3rd - 5th of August 2022)

ISA-VESIT conducted the 'PCB Design'. The workshop focused on understanding the steps and processes involved in PCB designing. All the participants were given first-hand knowledge about PCB fabrication using EAGLE software., basic operations and tools of EAGLE software and how to use the commands of the software for selecting the required components such as resistors, capacitors, LEDs, etc. The participants developed the schematics of the IC 555 circuit and dual layer board using EAGLE and concluded with a demonstration of various PCB-based projects.
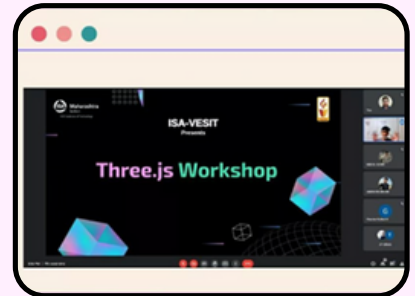

3D PRINTING:

Speakers: Mr. Nikhil Gore, Mr. Vinayak Rasal (25th - 26th of August 2022)

It focused on understanding the fundamentals of 3D printing and its applications, learned about FreeCAD software, specifications of a 3D printer and slicing of a 3D model using FlashPrint. At the end, a spur gear was designed and printed using 'FlashForge Adventurer 3' 3D printer.

THREE JS:

Speakers: Aman Rajbar, Mr. Yash Chavan (17th - 18th September 2022)

The workshop focused on the fundamentals of CSS, HTML and JavaScript, which are the building blocks for designing a website and an application, followed by setting up an environment in Three.js, a popular JavaScript library used to create 3D graphics. Participants were then introduced to various projects such as the Virtual World, Cyber Ninja 3D and Box Animations.
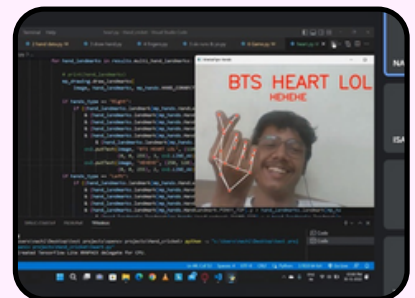

ROBOTICS:

ISA-VESIT successfully conducted this workshop in collaboration with Techfest, IIT Bombay on the 24th of September 2022. This workshop was conducted by the instructors from Techfest which is conducted at IIT Bombay. It covered the basics of TinkerCad to create circuit designs and acquainted with the basic mechanism of line following robot followed by demonstrating a prototype of the line following robot to all the participants.

OPENCV:

Speakers: Mr. Nachiket Suryawanshi Mr. Prathmesh Komte (29th - 30th of December 2022)

The first day focused on the fundamentals of Image Processing and the OpenCV library, Basics of image processing (RGB, CMYK, HSV & HSL, greyscaling of the image, etc.) along with other concepts like contour, shape detection, HAAR Cascade, etc. were explained in detail along with an interesting project of face detection. On the second day, a mini project of live sketching using a webcam and a car detection system was built. A fascinating project of Hand Cricket Game was made in the successive session.

Automation & Robotics Department

SCAVENGE TO BUILD (Praxis'22):

It amalgamated the fun of finding technical treasures and then utilizing them to build. The event comprised of four rounds - Treasure Hunt, Bidding Components, Bargaining Components, Building Circuits. The teams left with maximum credit points and the fastest circuit building won.
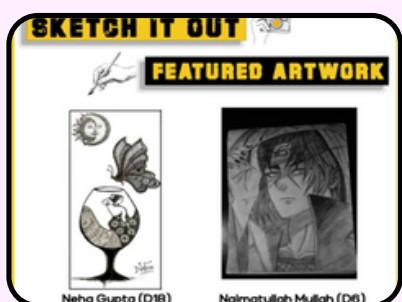

THE TECH-GAME QUADRANGLE (Pre-Praxis on 29th March 2022):

It involved a total of 4 games namely 'Build and Hit', 'Danger Word', 'BeWire' & 'tick, tick...BOOM!'. These games were played based on the technical knowledge of students.

ARTICLE WRITING (April 2022):

The competition advocated the views of students on various aspects of revolutionary technology. Members participated in this competition in huge numbers. The best articles

SKETCH IT OUT:

ISA-VESIT organized a fun competition 'Sketch it Out' where the participants submitted their sketches, paintings, and digital artworks and edited photographs in huge numbers. All the submissions were exceptionally beautiful which made it a very tough decision to select a few among them. The best artwork and photographs were featured in Envisage' 22, which is the annual magazine of ISA-VESIT.

THE HORCRUX HUNT (5th - 6th March 2022):

The participants were needed to anticipate some trivia and puzzles with a hint of programming in this adventurous journey. The event was played in a group of 3. On the first day, 4 rounds were held with

alternate rounds of coding and Trivia which involved unshuffling codes in C, completing dialogues, identifying movie characters and designing a webpage. The second day started with a round wherein participants had to simulate a hardware circuit. This was followed by a funnier round where the participants tried out different tongue twisters. The teams selected into the next round had to code the lightning scar. The final round involved an intense quiz battle between the remaining two teams.

INNOVATION & CREATIVITY SESSION BY INNOVATION AMBASSADOR

Title: Innovation and Creativity Session By Innovation Ambassador,
Under the guidance of Internal Quality Assurance Cell (IQAC)
and Association with Institution's Innovation Council (IIC)
(13 th January 2022)

Speaker : David Wittenberg, Professor of Entrepreneurial Innovation, ATLAS Skilltech university.

Organized by : Dr. Anjali Yeole, Assistant professor, AI & Ds and Mrs. Jayassre Ramakrishnan, Assistant Professor-Instrumentation

Hosted by : Mrs. Indira Bhattacharya, Assistant Professor- MCA and Mr. Yash Bhise, D14 –EXTC (coordinated and streamed on YouTube)

Technical support : Mr. Rahul Patil, and Mr. Gaurav Govilkar, D13-Instrumentation

Total no. of participants : 116 [All departments of VESIT (CMPN, IT, MCA, INST, H&A, EXTC, AI&DS and ETRX)]

OBJECTIVE:

To make the faculty aware about the different ways to nurture creativity and design thinking among students. Professor David described Lack of Confidence, Fear of Failure, Family background are some of the obstacles to creativity. He also suggested to the faculty to encourage students to think differently, assign tasks that require innovation and not to criticize creative ideas. Empathize, define, Ideated Brainstorm & Evaluate, Prototyping, Test , take feedback and validate are the steps involved in design thinking & innovation of a new product. He gave a usable definition for innovation as : "Combining existing elements in new ways to create value for customers"

MIC Driven Activity 1-e-SYMPOSIUM ON BUILDING INNOVATION & ENTREPRENEURIAL ECOSYSTEM IN EDUCATIONAL INSTITUTIONS

Title : MIC Driven Activity 1-e-SYMPOSIUM ON BUILDING INNOVATION & ENTREPRENEURIAL ECOSYSTEM IN EDUCATIONAL INSTITUTIONS
(11th January 2022)

Organized By : Ministry of Education Innovation Cell, AICTE, Ministry of Commerce and Industry (DPIIT) In collaboration with Ministry of Culture, Govt. of India

Coordinator : Mrs. Jayassre Ramakrishnan, Assistant Professor-Instrumentation, VESIT

Duration Of the Event (Number Of hours) : 5 Hours and 30 minutes

Total Participation : 168

About The Program : As a part of National Innovation Week, Azadi Ka Amrit Mahotsav(AKAM) celebration , e-Symposium on Building Innovation and Entrepreneurial Ecosystems in Educational Institutions has been organized by Ministry of Education Innovation Cell.

Objective

1. To promote innovation & Entrepreneurship among students and in HEIs.

2. The Innovation week was a part of celebration and 75 Innovative technologies, led by students and faculty from various academic institutions

Outcomes

1. Had learnt about many innovations and startups based on different themes like Clean & Portable water, Smart vehicles, Mobile App development, Sports & Fitness, Sustainable environment and Agriculture and Rural Development for improving prosperity and integrity of India.

2. Learnt about Toycathon which included Objective, Themes and the winning teams which were classified into Board games, Digital Games, Physical Toy and Puzzles

Instru-International Talk
Series - 2

Career Avenues In Instrumentation & Control System
Speaker : Mr. Karan Parekh (Director & Principal Technical Consultant, Omni Technology Solutions Pty Ltd.)
10th August 2022
An understanding of the industry landscape and the opportunities it provides for an Instrumentation &.Control Systems professional. The briefing will help students understand job opportunities as well as the roles and responsibilities that are associated with them.

From Instrumentation to Cybersecurity
Speaker : Mr. Rahul Rajewar (Senior Staff Security Researcher, Palo Alto Networks, United States.)
24th September 2022
A brief discussion on job prospectus, research opportunities and challenges when considering a career in Cybersecurity, being an Instrumentation Engineer.

A Journey From Instrumentation To Aerospace
Speaker : Dr. Omkar Pradhan (RF/MW Engineer. NASA's Jet Propulsion Laboratory (JPL), California Institute of Technology)
20th August 2022
Talk about career path guidance and the skill sets that students should equip themselves with to pursue a career in aerospace engineering.

Breaking into the Embedded Domain as a Masters student
Speaker : Mr. Diptarshi Chakraborty (M.S in Embedded Systems. Cellular Firmware Engineer, Apple, San Diego, California, United States.)
27th August 2022
The session briefed about overall grooming of student for studying aboard, the intricacies in job application process to build a strong network and the by-lanes of studying and pursing a career in embedded domain

Journey from Instrumentation to Robotics
Speaker : Mr. Kalki Kapoor (Software Engineer I, Fresenius Medical Care, San. Jose, California, United States.)
17th September 2022
The talk is about career path guidance and the skill sets that students should equip themselves with to pursue their future career in Robotics domain

Automation & Robotics Department

Alumni Speaks

Studying Instrumentation at VESIT was definitely one of the best decisions I ever made. Apart from having the best faculty for this course at VESII, Sarang Kulkarni, am working as a scientific assistant at NPCIl, RR site. Excellent infrastructure, great faculty members, friendly non-teaching staff, good exposure to all academic as well as non-academic activities, a prodigious placement cell, considerable lab facilities, and an attractive environment are self-explanatory for VESIT. Studying at VESIT was a great experience. The college is perfect in terms of the education they provide and the teaching methodology they use. Apart from studies, they also provide a huge space for extra-curricular activities through various events organised by the institute management team.

Apart from the academic part, they put major focus on the students' personality development so that he/she could easily crack the selection process. I myself improved a lot during my college tenure. A lot of pre-placement activities are conducted for this. In short, the college is perfectly amazing for those who wish to enjoy and build their career in engineering, a wide range of multinational core companies visit the campus for placements which provides varied opportunities to students for pursuing their career in the most demanding fields of Oil & Gas, petrochemicals and renewables sector.

Sarang Kulkarni
Batch-2021

Bachelor of Engineering, Instrumentation Engineering, batch of 2019. I can't help but think of how instrumental those 4 years have been in shaping me into the person I am today. Apart from my academic pursuits, serving as the class representative and as an active council member of ISA-VESIT have to be some of the defining moments of my college life. These roles not only helped me meet my bunch of close pals, a lot more like-minded people and come out of my nutshell but also made me embrace discomfort and turned me into a more confident and agile person. Life at VESIT was truly a journey of self-discovery and transformation.

Make the most of your college days. Pick yourself up, dust yourself off and remember that this is a process!

Swarna Shenoy
Batch-2019

This is Shivashakti Pillai completed B.E. in Instrumentation Engineering from Vivekanand Education Society's Institute of Technology (VESIT) – Batch 2022. Got placed in Tata Consulting Engineers Ltd. (TCE) as Graduate Engineer Trainee (GET) in Instrumentation and Control (I&C) Discipline through College Campus from VESIT.

VESIT is one of the top colleges in Mumbai. It is a well-established college with excellent infrastructure, security and facilities. Here, both co-curricular and extra-curricular activities are given equal importance. Every student gets placed in well reputed and renowned companies. College provides us internships for better future and experience.

The faculties here are well educated and experienced. The hostel services are too good with all the facilities available 24X7 with good food.

All of these makes VESIT a dream institute for anyone who wants to pursue higher education and I'm sure it's going to be an amazing experience studying here.

Shivashakti Pillai
Batch-2022

My name is Saloni Shah, alumni of Vivekanand Education Society's Institute Of Technology (VESIT) 2018 batch. I'm currently working in Aker Solutions as Senior Instrumentation Engineer. I had a career goal to become an Engineer which was fixed in mind from the very beginning. Now, I am here fulfilling my goal.

VESIT has help me grow personally as well as professionally. The professors here are extremely generous and talented. VESIT has one of the well reputed labs having facilities that we commonly see in the industry. This helps the students to visualize and learn in depth.
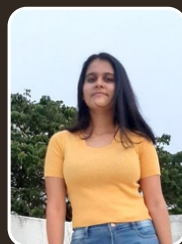
Saloni Shah
Batch-2018

Editorial team

| Mrs.Mugdha Jogalekar | Ms. Tanaya Gaikar | Ms. Madhura Padge | Ms. Srushti Gharat | Ms. Shikha Negi | Mr. Akash Koyalkar |

Special Thanks to Gaurav Govilkar for the Departmental Editorial!

Thank You