A REPORT ON

FOUR DAY WORKSHOP

FROM

11TH TO 14TH SEPTEMBER 2023

ON

AI4S

(ARTIFICIAL INTELLIGENCE FOR SOCITY)

ORGANIZED BY

DEPARTMENT OF COMPUTER SCIENCE AND APPLICATION

ATAL BIHARI VAJPAYEE VISHWAVIDYALAYA,

BILASPUR **(C.G)**

TABLE OF CONTENTS

ABOUT

“Welcome to AI4S-a convergence of cutting-edge technologies and innovation. Our Vishwavidyalaya is proud to host this dynamic event, bringing together visionaries, researchers and pioneers in the area of Artificial Intelligence (AI), Machine Learning (ML), IoT and robotics. Over the course of 11 to 14 September, we invite you to embark on an exhilarating journey into the future of automation, intelligence, and connectivity. In this report, we will see how these transformative technologies are reshaping industries, enhancing productivity, and revolutionizing the way we interact with the world around us.”

“UNLOCKING THE POTENTIAL OF TOMORROW’S TECHNOLOGY TODAY: DIVE INTO THE WORLD OF ARTIFICIAL INTELLIGENCE, MACHINE LEARNING AND INTERNET OF THINGS AT OUR COMPREHENSIVE WORKSHOP, WHERE INNOVATION MEETS INSIGHT, AND KNOWLEDGE FUELS PROGRESS!”

INTRODUCTION

Report on AI4S

Organized by – ATAL BIHARI VAJPAYEE VISHWAVIDYALAYA, BILASPUR (C.G) in association with Scientech Technologies, Indore.

Experience shared by the participants related to four days workshop on AI – ML and IoT organized during 11- 14 September, 2023.

DR. H.S HOTA SIR

(CONVENOR)

DR. JITENDRA GUPTA SIR

(CO- ORDINATOR)

DR. RASMI GUPTA MAM

(CO- ORDINATOR)

OBJECTIVES

PRIMARY OBJECTIVES OF THE WORKSHOP WERE TO:

- Foster awareness and knowledge about AI, ML and IOT.
- Facilitate hands-on learning and practical experience.
- Promote networking among students,faculity and industry professionals.
- Encourage innovative thinking and problem solving using these technologies.

WORKSHOP 1

Topic- Hands-on with raspberry pi & Arduino

11th- 12th September 2023

Target class – MCA-I & M.Sc.(cs) -I

WORKSHOP 2

Topic- Advance applications of IoT

11th- 12th September 2023

Target class - MCA-I & M.Sc.(cs) -I

WORKSHOP 3

Topic- Hands-on with Arduino & raspberry pi

13th- 14th September 2023

Target class - B.Sc.-I, B.Sc. –III & B.Sc.-IV

WORKSHOP 4

Topic- Advance applications of AI -ML

13th- 14th September 2023

Target class - MCA-III & M.Sc.(CS) -III

KEY SPEAKERS

MR. ROHIT SHAH

(R&D) ENGINEER,
SCIENTECH TECHNOLOGIES,
PVT LTD INDORE (MP).

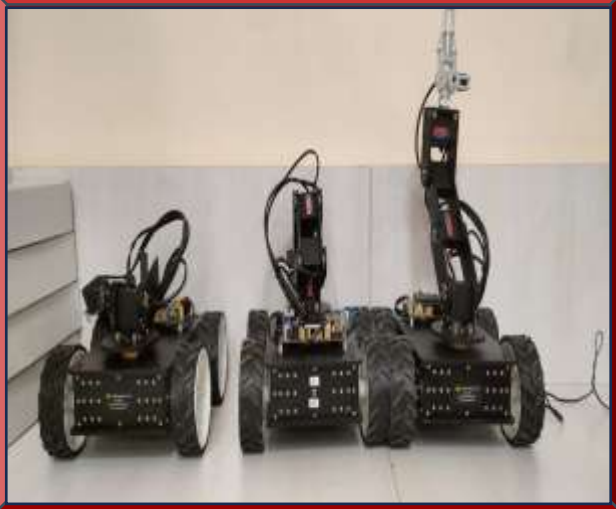
MR. DINESH YADAV

(R&D) ENGINEER,
SCIENTECH TECHNOLOGIES,
PVT LTD INDORE (MP).

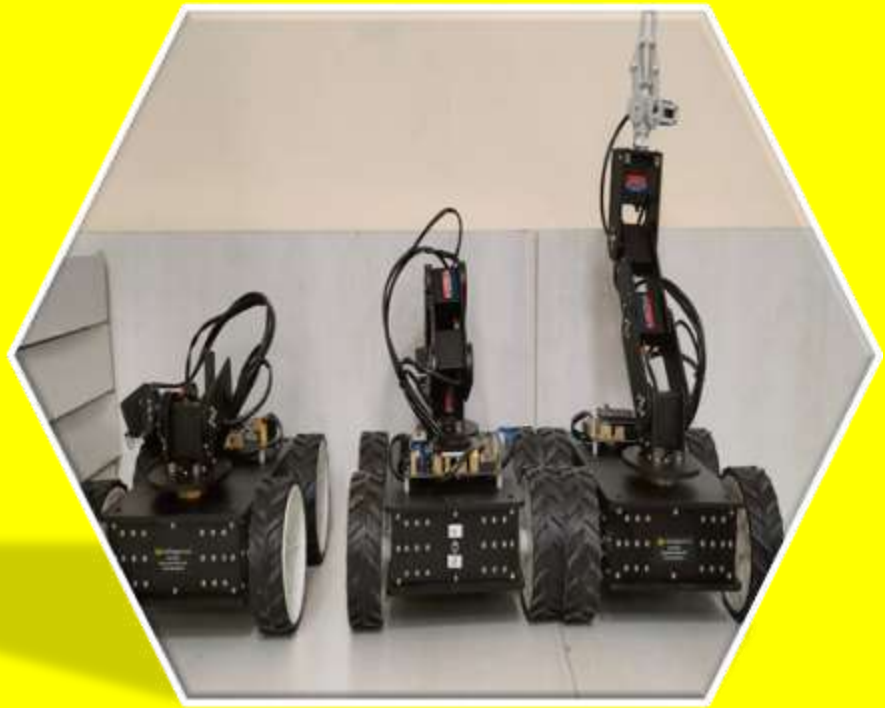
MR. ASHISH RAJVAIDYA

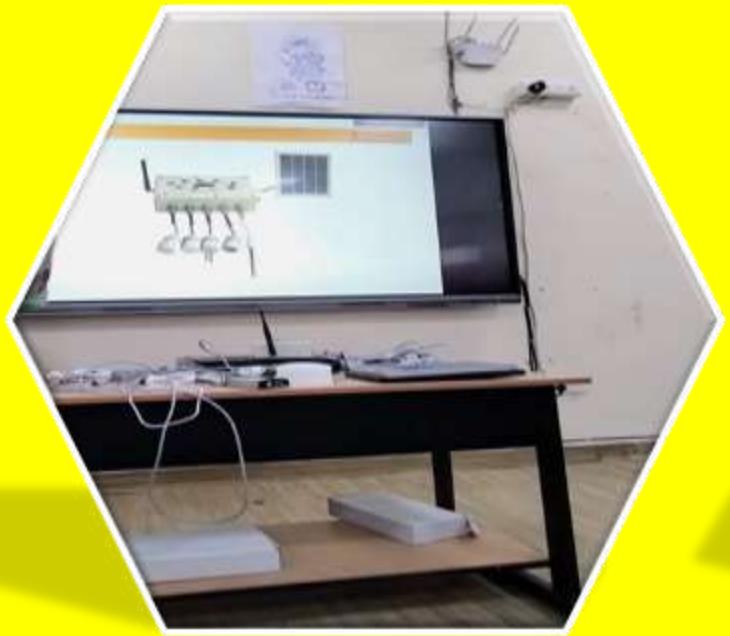
(R&D) ENGINEER,
SCIENTECH TECHNOLOGIES,
PVT LTD INDORE (MP).

GLIMPSES OF AI TOOLS



GLIPMSES OF AI TOOLS





GLIPMSES OF AI TOOLS

PARTICIPANTS

The workshop attracted a diverse group of attendees, including undergraduates and post graduate students, faculty members, and professionals from various fields. This diversity enriched the learning experience and fostered valuable interactions.

WORKSHOP PHOTOGRAPHS

WORKSHOP PHOTOGRAPHS

HANDS ON ACTIVITIES

Participants had the opportunity to apply their knowledge through hands-on activities:

- Building and programming IOT devices.
- Programming with Arduino kit and Raspberry pi.
- Simulating real-world applications.

WORKSHOP PHOTOGRAPHS

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FEEDBACK

Abhishek Jaiswal

MSc (cs) 3rd sem

In the four -day work shop, we learned

- About Sensor
- About Robots
- About DC Moter
- About IOT Enabled Green House
- About IOT Smart Health
- About Drone

Sensor:- In Sensor, we saw a lot of sensors which are this. Clap Sensor, Light Sensor, Temperature Sensor, Fire Sensor, Line Follower IR Sensor, Soil Moisture Sensor, Soil Temperature Sensor, NO2 Sensor and many sensors read and we also have all these senses.

Robots:- We saw Robot in robots

1. Robot with 5 Asix Moving Arm Kit We have a programming.

2. Robocar did not work in it, we also learned the practical on robo car and learned a lot And also drove.

DC Moter:- We have received many lives about DC Moter and Uses

Iot Enabled Green House:- We have learned a lot about Green House and learned and from it Related Sensor Practical also like Soil Temperature, Soil Moisture, No2 Sensor all these Practical also

Iot Smart Health:-In this we have also made 10 sensors and practicals like BodyWe read and saw Sensors like Temperature Check, Heart Beat Sensor, Pulse Sensor etc.

Drone:- We also took Basic Information about Drones and saw the draone flying.

Thank you!

Nisha devi

Msc Cs 3rd sem

Thank you for giving me such a great opportunity. Thank you for setting up an AI workshop and also providing us with various types of sensors. I want to tell you about the 4 day workshop, how was it for me.

Workshop:

Day 1st: This is the day we got complete theoretical information about sensors, we were told about their physical knowledge, how they are made and how they work, we had some problem because I spent a lot of time talking about physics again. They did however I liked it because it was interesting.

Day 2nd: This is the day when all the sensors have been made practical . fire sensor, light sensor, TSOP sensor, IR sensor and clap sensor, as their name suggests, they help us a lot in sensing the object. Then we also did a practical of the robocar which was quite Goodall things can act.

Day 3rd: This day we learned about the green house, we got some sensors for the soil so that we can know about the soil, how fertile it is, where vegetables can be planted, how much water is required, we learned about all the things how it would applied

Day 4th: day 4thwhich was the last day of the workshop, we did practical about the most interesting thing and learned which was the medical kit it had many sensors likeECG, PCG, EOG, BT, Respiration, SPO2, BP Monitoring, EMG, and HHI theory etcOn 14th September, which is Hindi Divas. In addition our Respected VC sir announced drone day and also told that a 3 month drone course will also be available.

Thank you!

Anjali Khargvansi

MCA 1st

Hello everyone. I am Anjali Khargvanshi student of Atal Bihari Vajpayee VISHWAVIDYALAYA. I would like to express my experience to you in the context of the four-day workshop.

A four-day workshop was organized in our Atal VISHWAVIDYALAYA. Which was done by the Department of Computer Science and Application under the direction of Head of Department Dr. HS Hota Sir, professor Jeetendra Gupta Sir and Dr. Rashmi Gupta Madam. In which AI technology was inspected. New equipment was also brought in the workshop, in which I got information about Arduino Uno, raspberry Pi, IoT builder and smart home. I told my parents about this four-day workshop and they were very happy to hear about it.

This workshop was my first workshop in which I learned about classroom temperature and light billing using sensors in Arduino Uno, commands in Raspberry Pi and got information about the benefits and new technical information of smart house. I thank the teachers of our department and rohit sir

Thankyou…

Bhuwan Singh Karsh

Mca first Semester

My name is Bhuwan Singh Karsh, and I am a student of MCA (Master of Computer Applications). In our VISHWAVIDYALAYA, from the 11th to the 14th, a 4-day workshop related to Arduino, Raspberry Pi, and IoT was held. I attended the entire 4-day workshop, and I would like to share my experience."

In a four-day workshop, we learned about Auridion, Raspberry Pi, and IoT and how they work. Auridion is a new technology used for data communication between various devices, Raspberry Pi is a mini-computer often used in various Internet of Things (IoT) projects, and IoT is the use of devices for data processing and control. This workshop likely helped enhance your technical knowledge and prepared you to use these technologies in different projects.

In this workshop, I learned about the Raspberry Pi kit for the first time. Before this, I didn't know about Raspberry Pi. Raspberry Pi is an electronic kit about the size of a credit card, and it's a kind of mini computer that can perform various computer tasks. With Raspberry Pi, we can connect and use various input and output devices of any kind.

Raspberry Pi operates on the Raspbian operating system, which is similar to the Linux operating system. In this operating system, Linux commands are commonly used, making it a familiar environment for those experienced with Linux.

In this workshop, I learned a lot about IoT (Internet of Things). Currently, IoT is being used in various ways. Through IoT, we can connect sensors to devices and make them smart. It allows us to store, monitor, and control data for various tasks.

Some examples:

- Smart Homes: IoT is used to make homes smart, such as monitoring heating and electricity meters, remotely controlling appliances, and managing security cameras.
- Healthcare: IoT devices and sensors are used for checking and monitoring health parameters for doctors and patients.

Thank you!

Yogesh Kumar Nirmalkar

(MCA-I)

I am writing to express my heartfelt gratitude for the invaluable learning experience I gained during the Raspberry Pi and Arduino workshop conducted by [Atal Bihari VajpayeeVishwavidyalaya Bilaspur] at [Computer Lab] from [11.09.23 to 14.09.23]. This workshop has been instrumental in enhancing my understanding of embedded systems and microcontroller programming.

We learned Sensors in the Internet of Things (IoT) play a crucial role in collecting data from the physical world and transmitting it to IoT devices or systems for analysis and action. IoT sensors come in various types, including:Temperature sensor,Proximity sensor, Light sensor etc.I have learned A smart building is a structure equipped with advanced technology and automation systems to enhance energy efficiency, security, and overall functionality. These systems often include sensors, IoT devices, and AI-driven software to optimize operations, reduce energy consumption, and improve occupant comfort. Smart buildings can also use data analytics to make informed decisions and adjustments in real-time.

I would like to extend my appreciation to [Scientech Technology's Indore] and the entire workshop team for their dedication and commitment to facilitating a successful learning event. This workshop has undoubtedly contributed significantly to my skill set, and I am eager to apply this newfound knowledge to my future endeavors. In conclusion, I am grateful for the opportunity to have participated in the Raspberry Pi and Arduino workshop, and I highly recommend it to anyone seeking to expand their knowledge in the field of embedded systems and microcontroller programming. I look forward to applying the skills and insights gained during this workshop in my personal and professional projects.

I sincerely thank you for our respected VC sir,Dr.H.S. HOTAsir(HOD of CSA) and specially thank for ROHIT sir for teaching all this.

Thank you once again for this enriching experience, and I remain available should you require any further information or references

Thank you!

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Akanksha Gautam

Class – MCA - I

The 4-day workshop on AI-ML and IoT was a comprehensive and engaging event aimed at equipping participants with practical skills in the fields of electronics, programming, IoT(Internet Of Things), and smart building technologies. The workshop brought together experts and enthusiasts to foster learning and innovation in these domains.

Day 1, Arduino Basics:- The first day of the workshop focused on Arduino, an open source electronics platform. We were introduced to the fundamentals of Arduino, including components, coding in Arduino IDE, and building basics circuits. Hands-on activities included LED blinking, sensor interfacing(Temperature Sensor), and simple projects to consolidate learning.

Day 2, Rasberry Pi:- Day 2 delved into Rasberry pi, a single board computer captured our imagination as a powerful tool for computing in a compact form. During the workshop we discovered how to set up and operate Rasberry pi systems. We explored the linux operating system and engaged in programming using python, a popular programming language.

Rasberry pi's capabilities extended from gaming and multimedia to running servers and hosting websites .We acquired skills that allowed us to create our applications and control devices, tapping into the potential of this versatile mini-computer.

Day 3, IOT Builder:- The third day was dedicated to IoT Builder, a platform for building IoT applications without extensive coding. We explored IoT Builder's capabilities in creating custom dashboards, data visualization, and connecting IoT devices. We learned how sensors and accuators could collect and transmit data to the internet, allowing for remote control and monitoring. Through practical projects, we understood the importance of data analytics and cloud platforms in managing IoT ecosystem.

Day 4, Smart Building Technologies:- On the final day, the workshop covered smart building technologies. Attendees learned about concepts like home automation, energy efficiency, and building management systems. They also had the opportunity to set up a basic smart home automation system, integrating Arduino, Rasberry pi, IoT principles.

The 4-day workshop proved to be valuable learning experience for participants interested Arduino, Rasberry Pi, IoT, and smart building technologies. We gained hands-on experience, practical knowledge, and deeper understanding of these fields. This workshop not only empowered individuals with valuable skills but also fostered a community of enthusiasts and learners in these exciting technology domains.

Thank you!

Deepshikha Dahire

Class -MCA 1st

I would like to share with you my experience form the recent workshop on raspberry pi and Arduino uno organized by the VISHWAVIDYALAYA.

In these 4 days workshop we learned about Arduino uno and raspberry pi how it is used and what are the things it is used for. In this workshop we also learned what the Microprocessor dose and how much impact dose its work have on our programming. Rohit sir explained us about these in great depth whatever question we asked him. He answered them very well. After explaining he would give it to us to use. Once the program was run. Our confidence increased so much that we did it we also read about smart building. I attended this workshop daily and enjoyed it very much. Overall I found the workshop to be a valuable learning experience.

Thank you for giving us this opportunity to further enhance our experience and skills.

Durga Kaushik

Class – MCA 1ST Sem

This workshop is organized by scientech company. In this workshop we were taught about arduino uno and raspberry pi kit. Arduino kit is a open source microcontroller, we learnt to measure temperature using arduino kit and temperature sensor. In this workshop I knew about so many sensors and I knew about A,B,C and male and female type plugs.Raspberypi kit is a very useful kit and it is a mini computer. We can do all the works done by computer through this raspberypi kit. It is affordable so that it can be baught easily. It is low power consuming kit and it can be run via solar plate.

It saves electricity and it is safe. We can make our home , a smart home by using raspberypi kit and we can make our city , a smart city too. We can also save energy and water too. We can make programs of relay's and LED's. A very good opportunity is given by our VISHWAVIDYALAYA to us to know about this kits. It is very helpful to us.

Lastly, I thank our vc sir ,HOD sir, and all the professors, scientech company and Rohit kumar sir for providing this invaluable learning opportunity and I look forward to any future workshop or event the will organize.

Thankyou!

DYALNAND PATEL
MCA -3 SEM.

First of all, I would like to thank our Vice Chancellor and Teachers for organizing this four-day workshop.In this four-day workshop, we learned how to analyze, optimize and use data in IoT(Internet of Things) through AI&ML.
In which the first day has studied robots, history of robots and robo cars with 5 sensors.

Robots :- a robot is a type of automated machine that can execute specific task with no human intervention and with speed and precision.
History of Robots- ELSIE(1950), SHAKEY(1960), MARS ROVER(1970), SRT CART(1980),WABOT -2(1984), ROOMBA(2002), Self Driving Car(2005), Robonaut-2(2011), Sophia(2017), Nanobots(2019).
In the second day of the workshop, we have learned about robots with 5 axis arms.
In the third day, we learned about smart agriculture, greenhouse effect, sensors.
Such as:- Effectiveness in Farming-
1) Solar radiation sensor 2) Soil moisture sensor 3) Nitrogen dioxide sensor 4) Soil temperature sensor 5) Carbon dioxide sensor 6) Atmospheric pressor sensor 7) Leaf wetness sensor 8) Volatile organic compound 9) Oxygen concentration 10) Temperature and humidity
In the last fourth day, we learned about IoT SMART HEALTH LAB, DRONES and ZIG_BEE(100m range Wi-Fi connector) etc.
IoT SMART HEALTH LAB:-
1) Electrocardiogram(ECG) 2) Electrooculography(EOG) 3) SpO2 signal measuremen 4) Blood pressor measurement 5) Body temperature sensor 6) Electroencephalography (EEG)
7) Electromyography (EMG)

Thank you!

T Anisha

MCA 1ST Sem

I learned a lot in the last 4 days workshop. Like arduino, raspberry pi, IOT builder & many more in few days, it was amazing, different & new from our syllabus & it was very interesting too.

And the most important thing is that Mr. Rohit Sir explained everything us very well, he tried to teach all the students personally in 4 days and gave some opportunity so that we can learn more in less time.

I learned about arduino on the first day & did a small project on temperature sensor. On the second day I learned about installing operating system in raspberry pi or linux commands or, how to reduce it, how to install it, how to run it etc. On the third day, we were told about the basic information about the ScienTech company or where the company is located, its head office, we were told about everything and we were told about the IOT model or 6 types of sensors. And a kit was shown in which raspberry pi and different sensors could be used in many other ways, which was very helpful in making any project.

One of the most valuable aspects of this workshop was the hands-on experience it offered.participants were provided with practical exercise and projects through out the workshop. These hands-on activities range from basic tasks like LED blink to more intricate projects such as building a real-time environmental monitoring system using Ardunio, Raspberry pi and the IOT builder device.

Lastly, I In thank our VC sir, HOD sir, all the professors, ScienTech company & Rohit kumar sir for providing this invaluable learning opportunity. And I look forward to any future workshop or events they may organize.

Thank you!

Hitesh Patel
Class – MCA III

First of all I'm very thankful to our department for organizing the workshop in ADVANCE APPLICATION OF IOT AND AI-ML for 4 DAY'S.

First day of workshop I learn about the what is robot , its introduction , history , working, Features, components(DC-MOTOR etc.). in the first I familiar with robot and get to know what is robot everything about the robot.

After the first learning about the robot second day I learn about robo car and its feature and about the sensor which was present in the robo car, sensor like object detection, clap sensor, fire sensor, etc. one by one learn about the all the sensor after the learning about the sensor I work with the robo car with help of sensor which was present in the robo car. In the same I learn about the FIVE AXIS MOVING ARM (NVIS 3301C) ROBO CAR its introduction , features and technical specification after the learning I work with this five axis arm robo car.

In third day I learn about the sensor lab, first I understand about what is sensor and how many types of sensor like its has two types ANALOG SENOR & DIGITAL SENSOR. After learning about the sensor I work with the sensor it has some sensor like temperature sensor, pressure sensor etc. after this I learn about the IOT ENABLED GREEN HOUSE in this I learn climate change and the solution of climate change which is green house. After that I learn effectiveness in farming like solar radiation, atmosphere pressure, soil moisture, etc. this is all about the third day .

In last day of workshop I know about the drone and see the drone flying and know its advantage of drone.

After that I learn about the IOT SMAT HEALTH LAB it has 11 sensor like ECG, RESPARATION THEORY,

SPO2, BLOOD PRESSURE,ETC. I see the live working of the all the sensor present in smart health lab.

SUMMARY, in the 4-days workshop I learn about the robot ,robo car, five axis moving arm robo car, sensor lab, iot enabled green house, and last smart health lab. I wanna say thank you to our department for organizing this workshop I learn about new things and I have really enjoyed this 4-days workshop.

Thank you!

Aanchal Dewangan

MCA-I

I was recentlyattending the Arduino and Rasberry pi workshop organized by dept. of computer science and application.

It was an incredibly experience. Throughout the workshop, I had the opportunity to learn the microcontroller and sensors.

From the beginning of the workshop, we started with Arduino and we were introduced to the basics of the Arduino and it's components, learning to write code to control LEDs and sensors. It was amazing to see how quickly we could make physically things. We connected wires and sensors to it to make LED lights blink in different patterns.

The best part was making projects. With Arduino, that tell us the temperature.

And the next session, we learn on Rasberry pi, it's like a mini computer. We connected it to a camera and learned how to take pictures with it. We were learned how to build a home automation system using raspberry pi, was very fun and educational experience for me.

The instructor was knowledgeable and guiding us through each step and encouraging us to experiment.Who’s explained things in a way that was easy to understand.

This workshop was a fantastic learning journey and I'm grateful for the skill and knowledge, I gained during this workshop.

I was very thankful to organizers to providing this opportunity.

Thank you!

Huzaifa saify

MCA III

We have learned a lot from this 4 days workshop which will help us to get idea for our minor project and for major project. We got know about history of robots and field of robotics.Also some 5 type of sensors which is –

- Clap sensor - Which contain a mic or condenser microphone and how it works .
- Fire sensor – Named TSOP sensor that contain a special type of photo diode and a lm35 transistor which can sense heat.
- IRsensor – Infrared Ray sensor was used to track black strip and Robot car following that strip through this sensor
- Light sensor - Ldr is used to detect intensity of light.
- We got revision of How Dc Motor Works and how we can use different type of motor in a project.

We got introduced with 5 Axis Arm Robot. With 4Mode which is displayed in a LCD display. And we see how to control robot with our mobiles that was amazing. In Sensor Lab device we can connect 10 sensor at a time. So it would be easy to take more reading at a time. We have learned about IOT enabled smart health kit which helps in various medical measurements of body irregularities. Some of these are EEG ,ECG,EOG,BP and many more. We got introduced with Arduino and Rasberry Pi. For Ex –Atmega2560 board. In the Day 4 we see , Drone with camera which can be used is many sectors and also got to knowlicense is required to fly a Drone.

Thank you!

Kasak Dewangan

MCA III

A four day workshop was organized in our Atal Bihari Vajpayee Vishwavidyalayain which we were told about many new technologies like robo car, robot with 5 axis moving arm, IOT smart health lab, IOT enabled green house,raspberry pi etc. like in Robo Car we Learned the components and mechanics of a robo car. Gained hands-on experience in programming for autonomous navigation. Understanding of real-world applications and trends in autonomous vehicles. Enhanced problem-solving skills through practical assembly and testing. In5-Axis moving Arm Robot weExpanded knowledge of advanced robotic systems.Explored the intricacies of multi-axis robotic arms.Acquired skills in kinematics, motion planning, and precise control.Practical experience in programming and operating a 5-axis moving arm robot.Discovered the wide range of applications in industries and research. In Raspberry Pi weLearned the capabilities of the versatile Raspberry Pi platform.Gained proficiency in setting up and configuring Raspberry Pi.Developed skills in GPIO pin usage and interfacing with sensors.Acquired coding skills in Python for various projects.Explored advanced projects and Internet of Things (IoT) applications. In IoT-Enabled GreenhouseweUnderstanding the concept of IoT (Internet of Things) in agriculture. Learning how sensors and data analysis can optimize greenhouse conditions. Acquiring knowledge about remote monitoring and control of environmental factors like temperature, humidity, and light. Practical experience in setting up IoT sensors and systems within a greenhouse. Exploring sustainable and efficient agricultural practices with IoT technology. In IoT Smart Health Lab weGaining insights into the integration of IoTin healthcare and wellness. Learning about wearable health devices, remote patient monitoring, and telemedicine. Acquiring skills to set up and operateIoT health monitoring systems. Understanding data security and privacy in the context of healthcare IoT.

Overall, these workshops equipped as with a broad understanding of robotics, hands-on skills, and the ability to apply technology in practical projects, from autonomous robo cars to intricate 5-axis arm robots, and the versatility of Raspberry Pi for diverse applications.

Thank you!

Kriparam Kanwar

Class - MCA III

I want to tell you here. Student of the Day, I would like to tell in our Workshop Series that Sir, people were from Indore. He used Arduino and Raspberry Pi. Told us about the new technology and also informed us about its practical implementation and some new ideas. Which gave rise to the idea of doing something new in our mind and gave a new message to our future generations.

Therefore, I would like to thank all my teachers and mentors and all the teachers from outside that they considered us worthy of this and showed us the right path. And continue to guide us like this and let us keep moving forward like this,

Thank you……

Lalima

MCA III Sem

We have learned about various sensors we used in the IOT We have studied about the basic robot car and performs the basic experiments of all the five sensor of the basic robot car. These five sensors are- IR sensor , TSOP IR sensor, light sensor , clap sensor and fire sensor. We have discussed about the five axis moving arm robot and done the 3 experiments of its working, we performed the practical operation of these robot car. Sensor Lab is a device which is collection of module which helps in the sensor preparation of IOT devices. Sensor lab has LCD display which shows the output and graph. IOT enabled green house farming have many no. of sensor which helps to improve and monitoring of the soil and farming under certain suitable conditions Some sensors are soil temperature sensor, soil moisture sensor, solar radiation sensor and many more.

Thank you……

Laxmi Kant Soni

MCA III Sem

ROBOT A robot is a type of automated machine that can execute specific task with little or no human intervention.

History of robot 1984 - WABOT, 1989-Rodney , 2002-roomba, 2005- self driving car , 2017- Sophia . Greenhouse IOT Climate change tradition farming technique. Solution GREEN HOUSE farming

Effectiveness in farming Solar radiation , soil temperature, soil moisture, leaf wetness, IOT SMART HEALTH LAB EGC – Electro cardiogram , EOG, BP, IO Sensor ,human human interface ,BTS , SENCER LAB Power amplifier , protencial meter , LED, source, converter, Sensor type analog sensor , digital sensor,

Thank you!

Nisha Kumbhkar

MCA I sem

My hello to all of you! I am Nisha Kumbhkar, a student of Atal Bihari Vajpayee VISHWAVIDYALAYA. I want to share my Arduino & Raspberry Pi Workshop experience with you guys.

This was my first workshop in programming, which was of 4 days. Here we learned many things related to Raspberry pi and Arduino. I liked the practical the most. By programming temp in Arduino, used sensor and saw the temperature of the class and understood many commands and smart building in Raspberry pi. Which gave me confidence that I can do many things in future. Got to learn something new. I thank Rohit sir as well as all the sirs, teachers and all the members who organized the workshop.

Thankyou!

Manisha Gupta

MSc CS III sem

Day 1: Robust Robotics Insights

The journey began with an exploration of robotics, delving into its historical context, the intriguing laws of robotics, and a comprehensive understanding of their capabilities and limitations. This foundational knowledge ignited a spark of curiosity, drawing me deeper into the world of robotics. We then dived into the creation of a "Robo Car," pieced together with 5 sensors, 2 motors, a motor driver, and more. This practical experience not only unveiled the wonders of DC and Servo motors but also ignited my passion for this field.

Day 2: Hands-On Robo Car Experiments

Day 2 was a hands-on adventure as we conducted 8 experiments with the Robo Car, connecting jumpers and cables strategically to explore its various functionalities. These experiments proved to be invaluable, providing essential insights for both minor and major projects. Our understanding of DC and Servo motors was deepened further, enhancing our technical expertise.

Day 3: Sensor Insights and Arduino Mastery

The focus shifted to sensors on Day 3. In the Sensor Lab, an array of tools awaited our exploration, from breadboards to variable potentiometers. We delved into various sensors, including temperature, light, solar radiation, soil moisture, NO2, and Atmosphere sensors. This knowledge empowered us to choose sensors for our upcoming projects. Additionally, we embarked on an Arduino journey, learning to write code in C and C++, including the art of loading and burning our code onto microcontrollers.

Day 4: IoT Smart Health Lab

The workshop concluded on a high note, as we ventured into the realm of healthcare with the IoT Smart Health Lab. This innovative device enabled us to collect readings for ECG, PCG, EOG, BT, Respiration,SPO2, BP Monitoring, EMG, and HHI theory. With a microcontroller as the lab's brain and a small LCD displaying sensor readings, we gained insights into the vast possibilities of IoT in healthcare.

Thankyou!

Parwati Shriwas

MCA 3rd Semester

In these 4 days workshop I have learned so many advance topics of IOT(Internet of Things) and Artificial intelligence(AI) and Machine Learning(ML) some of the major learning outcome of these workshop are:-

- Knowledge about the basic Robo car, its history, components and working.
- We have done practical implementation of all the 5 sensors of the basic robo car. These sensors are -Infrared sensor, TSOP IR sensor, Fire sensor, Clap Sensor and light sensor.
- We have learned the operation of 5 axis moving arm robo car (Educational)., we have also paired it with our mobile phone with the help of application and operate it wirelessly.
- Sensor lab – A device of Scientech which is used to program sensors
- IOT enabled Green House Farming – In which we had learned about smart farming using Iot.
- Smart Health kit –Iot enabled smart medical device which performs ECG,EEG,SPO2,PCG,BTM, BP , EOG , NIBP, Respiration and many more .

Thankyou!

Barakha soni

M.Sc.(CS) III sem

I am Barakha soni from M.Sc.(CS). I would like to share my experience about four days AI and IOT workshop, which held from 11 September to 14 September. These four days workshop were really precious for us. In this workshop we learnt about basic robot which had five sensors IR sensor, TSOR-IR sensor, Light sensor, Clap sensor, Fire sensor. We practically perform and operate this robot by connecting it's wires. We learnt about five Axis arms robot which moves there arms in any directions, this robot can move any thing from one place to another by it's arms.

In both robot DC(Direct Current) motors are used. This DC motor is used to convert Analog signal to electrical signals. These robots has some capabilities as well as some limitations. A microcontroller is used to operate this robot.

We leant the functionalities of each sensor, in IR sensor we use compare register as comparator and photo diode. Using IR sensor, robot follows a specific path. Clap sensor takes sounds from outer environment and convert it into electrical signals and follows the sounds. It works as a transducer and converter of signals. Fire sensors are act on fire, this sensor follows the light of fire and works on the heat of fire. We perfomed all experiment of basic robot one by one. In five axis robot we also use servo motors and LCD. We can operate this five axis robot by mobile by connecting it using connection. Servo motor works based on feedback system while, DC motor doesn't give any feedback. We also learnt about IOT Green house sensors which are used for monitoring plants and tree and protect them from different environment.

Thankyou!

Aakash Nirala

Class - MCA III

We have learned about Five senser ROBO CAR. All the five sensors of the basic ROBO CAR are- IR sensor, TSOP IR sensor, light sensor, clap sensor and fire sensor. Sensor Lab is a device which is collection of modules which helps in the preparation of IOT devices or simply a smart environment.

Sensor lab has LCD display which shows the output and graph. We also studied about Smart Drone. It is technology which is based on the AIML. IOT enabled greenhouse farming have many numbers of sensors which helps to improve and monitoring of the soil and farming under certain suitable environment. Some sensors are soil temperature sensor, soil moisture sensor, solar radiation sensor and many more.

Thankyou!

Priti Kashyap

Class- MCA I

IN THESE 4 DAYS WPRKSHOP WE LEARNED ABOUT ABOUT ARDUINO UNO AND RASPBERRY I IN THIS WORKSHOP WE ALSO LEARNED WHAT MICROPROCESSOR DOES AND HOW MUCH IMPACT DOE IT'S WORK HAVE AN OUR PROGRAMMING .

ROHIT SIR EXPLAINED AS ABOUT THESE IN GREAT DEPTH WHATEVER QUESTON WE ASKED HIM HE ANSWERED THEM VERY WELL AFTER EXPLAINING WE WOULD GIVE IS TO US TO USE ONCE THE PROGRAMM WAS RUN WE ALSO LEARNED ABOUT SMART BUILDING.

I ATTEND THIS WORKSHOP DAILY AND ENJOYED IT VERY MUCH LEARNING EXPERIENCE.

THANK YOU!

Omprakash Yadav
MCA 3rd Semester

Major learnings of these workshop which is based on Advance IOT technologies and AI and ML are:-

Basic Robot Car –History , features ,its components and sensors . Basic robot car has five basic sensors 1) Infrared Sensor 2)TSOP IR sensor 3) Fire sensor 4)light sensor 5) Clap sensor.

Nvis 3301C Robot with 5 axis moving arm – History , Features , its components and the 5 axis of the robot arm, learn its operation with built in LCD touch screen and wirelessly with smartphone.

Sensor Lab - Scientech 2311 SensorLab comprises of Sensors and Transducers which provide the fundamental knowledge of sensing Light, Pressure, Temperature, IR and many more non electrical entities. And inbuilt touch LCD display for ouputs and graph.

IOT enabled green house farming – learnt about various helpful sensor in green house farming some are solar radiation sensor, soil moisture sensor and many more.

Smart Health Kit – It contains 10 sensors which performs different 11 experiments which is based on healthcare, some examples are ECG,EEG,EOG,SPO2,BP and many more.

Thankyou!

Pooja Kaiwart

MCA I

I would like to share by experience for the recent workshop on raspberry Pi and Arduino. Which is organised by VISHWAVIDYALAYA. Actually, Arduino is an open source electronics platform based on easy to use hardware and software. And raspberry Pi is a low cost, credit card sized computer that plugs into a computer monitor on tv, and uses a standard keyboard and mouse.

This workshop is very informative and interesting. First day we learn about Arduino Uno and how to use the uno board with sensors, we measure room temperature and humidity and learn about different types of sensors and how to make your own hands-on projects or gadgets. And also learn how to write simple computer programming to make your own gadgets work.

Second day of workshop we learn about raspberry Pi and how to they operate in monitor. Raspberry Pi uses a raspberrian operating system and any task which is to be performed we used linux command like creating a folder, files and install any software.

And last two days we learn about IOT devices, the workshop provided a hands-on opportunity to delve into the fascinating world of Internet of Things (IoT), where everyday objects are interconnected to enhance functionality and efficiency. Throughout the workshop, we learned about sensor integration, data collection, and the intricacies of IoT architecture. The practical exercises, such as setting up a simple IoT device and programming it to transmit data to a cloud platform, were incredibly instructive.

We are shown a smart building model and learn how to use the technology for making smart and advanced things. For making smart building we use temperature sensors, fire sensors, PIR motion sensor, smoking detection electronic platforms, relay and sensors. Thank you for providing us with the opportunity to expand our knowledge and skill.and LPG gas sensors. This workshop is very skillful and amazing they introduce different types of things,

Thankyou!

Priya Koshle

MCA-III

In these 4 days' workshop of IOT and AIML we have learned About Various concepts: -

- We have learned about the DC Motor.
- We have discussed about the five-axis moving arm robot and done the 3 experiments of its working, we performed the practical operation of these robot car.
- We have learned about various sensors that can be used in IOT
- We have learned about Five senser ROBO CAR. All the five sensors of the basic ROBO CAR are- IR sensor, TSOP IR sensor, light sensor, clap sensor and fire sensor.
- Sensor Lab is a device which is collection of modules which helps in the preparation of IOT devices or simply a smart environment.
- Sensor lab has LCD display which shows the output and graph.
- We also studied about Smart Drone. It is technology which is based on the AIML.
- IOT enabled greenhouse farming have many numbers of sensors which helps to improve and monitoring of the soil and farming under certain suitable environment.
- Some sensors are soil temperature sensor, soil moisture sensor, solar radiation sensor and many more.

Thankyou!

RAVEENA RAJAK
MCA III SEM

In this workshop I have learned about various AI tools like:

Sensors are devices with inbuilt mechanical, electrical, or chemical features. Their functioning depends mainly on the transduction principle. The principle is based on the conversion of energy from one form to another.

ROBOT SENSORS
A Robot Sensor is used to measure the condition of the robot and its surrounding environment. Sensors pass electronic signals to robots for executing desired tasks. Robots need suitable sensors that help them control themselves.

Servo motors are slow, but precise. we send a command to the servo that will command the servo to rotate at a specific rotational speed. With Arduino, you'd usually use the Arduino Servo library and a constant rotation servo.
Servo's also tend to require less power to run. they are used in robotic arms, legs or rudder control.

DC motors can give considerably more power and/or speed, but can be tricky to control as accurately. If we don't have an encoder attached to each DC motor, it'll be very difficult to make each wheel spin the same speed. they are used in car wheels, fan etc.

IOT Enabled Green House
IOT-based intelligent soil management system is designed to monitor and manage the soil, enabling it to be suitable for agriculture and crop growth.(Climate Changes)

Green house farming-Solution
- Large enough space inside to grow crops.
- Sensors to get optimum growth and productivity.
- Partially and fully controlled environment conditions.

Effectiveness in farming-
- solar radiation
- soil moisture
- soil temperature
- carbon dioxide
- leaf weather

Thankyou!

RAVI KUMAR BAGHEL

MCA 3RD SEM

In this workshop of four days, we have learnt so many things that we never thought about. Being a part of Computer Science background, I found that only being a part of IT or Computer Science solely is not going to change the world. We need to integrate with the others to create a revolution. Also, there we learn about a sector called Mechtronics (combination of Mechanical & Electronics). We have explored how this field can integrate with our sector and how we can enhance the performance and efficiency of helping the human being improving the progress of developing the society and convenience for the world. In the first & second day of workshop, we have explored how the mechanical and electronics is being integrated to develop various sensors and devices which can generate an accurate and more precise information.

Thankyou!

ABHINEET TRIPATHI

MCA 3RD SEM

I am Abhinit Tripathi, Student of MSc. 3rd semester computer science. In these 4 days Advance Application of IOT & AI-ML Workshop I learn so many things.

Robocar – The Robo car workshop was a great experience. I leraned a lot of the different components of a robo car such as sensor, motor and so on.

Robot with 5 axis moving arm – The Robot with 5 axis moving arm workshop was another great experience. I learn a lot of different components of robot. I also learned how to program the robot to perform different task. I also learned the concept of servo motor and DC motor.

Smart Health – The smart health kit like EEG , ECG Device was a great introduction to different types of sensor that can be used to monitor human health.

I would like to say thanks to Hota Sir and all teachers who organised workshop.

Thankyou!

RAVINDRA KUMAR SHRIWAS

MCA IST

I had the privilege of attending a remarkable workshop organized by the Computer Science Department and AI Club from September 11th to September 14thWorkshop Highlights:

The workshop served as an eye-opener, providing insights into various modern technologies. It was an enriching experience as we delved into the world of emerging technologies.

We gained a comprehensive understanding of Arduino, a versatile microcontroller platform. The engineers showcased how Arduino can be employed in creating a home automation system, a concept that left a lasting impression on us. The potential applications of Arduino were truly fascinating.

Raspberry Pi, a credit-card-sized computer, was another exciting area of exploration. We were shown how Raspberry Pi can be utilized to develop innovative gadgets like robots and drones. Witnessing the possibilities opened up by this technology was both educational and inspiring.

The engineers from Scintech who led the workshop were not only knowledgeable but also exceptionally courteous and humble

I would like to express my heartfelt gratitude to our esteemed Vice Chancellor (VC), the Head of Department (HOD), our dedicated teachers, and all the members of the AI Club who played pivotal roles in organizing and ensuring the success of this workshop. Their commitment to fostering a culture of learning and exploration is deeply appreciated.

Thankyou!

RITU SAHU

MCA 3RD SEM

In this workshop of four days, we have learnt so many things that we never thought about. Being a part of Computer Science background, I found that only being a part of IT or Computer Science solely is not going to change the world. We need to integrate with the others to create a revolution.

Also, there we learn about a sector called Mechtronics (combination of Mechanical & Electronics). We have explored how this field can integrate with our sector and how we can enhance the performance and efficiency of helping the human being improving the progress of developing the society and convenience for the world.

In the first & second day of workshop, we have explored how the mechanical and electronics is being integrated to develop various sensors and devices which can generate an accurate and more precise information.There we learn about two robotic car like models: Robo Car & 5-Axis Arm. In the first model, we explore how the sensors work and how it reacts to the environment and its surroundingsThis model is programmed using the microcontrollers fitted on it which is remotely accessed through an application from android devices.

These two models are basic models which explains the thing like how sensors react, how to control the machine and so on. On third day, we learned about the IoT Enabled Green House. The basic idea behind the model is to understand how the plants and crops are being grown in what kind of environment, what type of soil is more fertile, which weather is appropriate to grow the productivity of the crops. In the final day of workshop, we learnt about IoT Smart Health Labwhere ten different sensors are used to check the heart rate, blood pressure rate, respiration measurement, pulse rate, and many other things which can be helpful in detecting any kind of disease in human body.

Thankyou!

RIYA SHROTE

MCA 1ST SEM

Respected Sir,

With all due respect I want to state that I Riya Shrote from MCA 1ST Sam. I am here to tell you about my experience about the workshop held on our VISHWAVIDYALAYA to introduce about Arduino, Raspberry Pi and IoT 8n collaboration with Scientech company who sent their engineer name Rohit sir and teach us all these things.

In very first day sir introduce about Arduino like what is Arduino ,types, how to code in Arduino, how it works with different sensors like room temperature detect sensor, soil humidity sensor, soil temperature sensor, LDR, Air quality sensor, Relay – one channel, two channel, four channel, and many more sensors. Than we done an experiment with Arduino UNO we detect room temperature using LM35 sensor that detect room temperature.

On second day sir introduce about Raspberry Pi that is small in size like ATM card. It is mini computer where we can install different OS and perform our task. In this we install Raspbian OS which is command based OS. Here we know about different commands to perform a tasks inside it. On third and fourth day sir introduce about IoT i.e. Internet of things. Here we know about IoT things and devices. Here sir teaches us how to IoT made and use them. By using Arduino, sensor and raspberry Pi we make smart buildings, hospital vehicles and many more.

Also we see different types Robots and drones that are also example of IoT. As we all know that we all are living in 21st century. 21st century is all about AI and this type of workshop is very helpful for the student like us. As I am part of IT sector so this workshop is very helpful for me. I learnt so many knowledgeable topics/ things from that workshop. If I focus on that and really do hardwork and implement that topic in my daily project so in my future I really achieve very great success in my future. And at the end I really thankhful to HOD sir and our department to organized such a valuable session for us and Rohit sir who gave us his precious time and share his very tremendous knowledge and experience with us.

Thank you!

RUPANJALI BARETH

MSC 3RD SEM

First day of the workshop was full of theory and basics of Robots here we learn the robotics from it's root where it began and how its evolution goes by the time here in our Centre of Excellence (CoE) lab we have two types of robo cars one is basic robo car which only need power to move from one place to another and it has many more sensors fitted like Clap sensor, Light sensor, IR sensor and TSOP sensor and another one is with Five Axis moving arm robo which is controlled by an application and connected wireless via Wi-Fi.

Second day we had hands on with both robo cars and brief information about Sensor Lab Kit which is facilitated by many sensors some of them are Temperature Sensor, Humidity Sensor, etc. Later we explore IoT enabled Green House which helpful in plantation and other agriculture activity we can find the moisture of the soil and leaf of plant also with the help of sensors.

Third day we had introduced Drone and they gave us a brief information about that like how many versions of are there

Fourth day we perform several practice with Smart Health Kit which very easy and comfortable to the patients.

I would like to thanks Dr. H.S. Hota Sir who organized this workshop.

My heartfeltthanks to our HonourableVice Chancellor Prof. A.D.N. Bajpayee Sir who provide this kind of lab to us.

Thank you!

SAUMYA DEWANGAN

MCA 1ST

I would like to express my appreciation for the recent workshop on Raspberry Pi and Arduino,Organized by the VISHWAVIDYALAYA.The workshop was informative, engaging and well structured and comprehensive understanding of these two popular electronic platforms. I particularly enjoyed learning about the differences between Raspberry Pi and Arduino and they can be used for different types of projects.The practical exercise were challenging but rewarding, allowing us to applying the concept we learned in a real world context. On the first two days we learnd about Arduino Uno and how to operate along with the practical of temperature sensor and on the last two days we learned about IOT and their devices. While the workshop covered a range wide range of topics. I would have liked to see more emphasize on troubleshooting and problem solving overall I found the workshop to be a valuable learning experience.Thank you for providing us with the opportunity to expand our knowledge and skill.

Thank you!

SHASHIKANT SAHU

MSC (CS) 3RD SEM

Date 11th Sept, 2023 the workshop on Advance Applications of IoT begin and the Engineers taught us from the basics of Robotics and the told us the history of robotics and much more about the working of robots and features of basic robo car and also about some laws of Robots which are following :-

LawOne

A robot may not injure a human being or, through inaction, allow a human being to come to harm.

LawTwo

A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.

LawThree

A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Date 12th Sept, 2023 second day of workshop was full of practical session their we practiced with basic robo car under the instructor we work with different sensors like : clap sensor, light sensor, fire sensor, IR sensor and TSOP sensor. We explore the robo car with all sensor as we clap the robo will move in forwarddirection and the robo will stop itself when we clap 2-3 times, with the help of IR sensor we followed a path by robo the path should be drawn in black colour with white bright background and then we practiced hands on with Educational Robo with 5 Axis Moving Arm Robo has a small display and three buttons in the right side of display to move and select any operation like Reset, Move, SelectDate 13th Sept, 2023 third day of workshop we learnt about sensor lab where we had introduced with different kind of sensors for example Temperature Sensor this will sense the temperature of surrounding area and send the data to the microcontroller and then the microcontroller analyse the data and shows the output. We also learn basics of Drone.

Thank you!

TANU BHARTI

MCA 1st SEM

I Recently Had The Opportunity Of Participating In 4 Days Workshop That Offered A Unique Combination Of Learning Experiences, In 4 Days Focusing On Arduino Uno, Raspberry Pi - 4, And The Iot Builder Device And As Well As Smart Building. The Workshop Was Held In Computer And Well-Equipped Lab.

The First Day Of The Workshop Began With An Overview Of Arduino UnoWe Were Introduced To Concepts Of The Arduino Uno Includes 6 Analog Pin Inputs, 14 Digital Pins, A Usb Connector, A Power Jack, And An Icsp (In-Circuit Serial Programming) Header. On The Day Install Respberry Pi 4 In Lab Smartboard And Run The Respberry Pi With Help To Command.How To Install It,How To Run It, How To Install Any Application,And How To Command Any Operation,And Also How To Install Operating System On Respberry Pi 4.

Third Day Told AboutIot Builder Device.Connect 6 Different Sensor With Help Of Iot Builder And Reading Data With Help Of Iot Device. Final Day Told About Smart Building Automation. A Smart Building Is Uses Automated Processes To Automatically Control The Building's Operations Including Heating, Ventilation, Air Conditioning, Lighting, Security And Other Systems With The Help Of Different Types Of Sensor Connect With Iot Enable. On This Day Hand On Experience With Different Types Sensor And How To Work On It. Smart Building Are Different Types Sensor Less Building Like - Lpg Gas Sensor , Smoke Sensor , Fire Sensor , Pir Sensor , Rfid Sensor , Co2 Sensor , Temperature Sensor Etc. Like - Lpg Gas Sensor , Smoke Sensor , Fire Sensor , Pir Sensor , Rfid Sensor , Co2 Sensor , Temperature Sensor Etc.

Thank You To Our RespectedVc Sir , Hod Sir, All The Professors, Scientech Indore CompanyandRohit Kumar Sir For Providing This Invaluable Learning Opportunity, And I Look Forward To Any Future Workshops Or Events They May Organize.

Thank you!

VINOD KUMAR PATEL

MSC(CS)3RD SEM

चार दिवसीय वर्कशॉप में हमने बहुत सारी जानकारी प्राप्त की और हमने बहुत कुछ पढ़ा और सीखा जैसे

- sensor के बारे
- Robots के बारे में
- Dc moter के बारे में
- Iot enabled green house के बारे में
- Iot smart health के बारे में
- Drone के बारे में

Sensor :- sensor मे हमने बहुत सारे sensor को देखा जो इस प्रकार है |Clap sensor, Light sensor, Temperature sensor, Fire sensor, line follower IR sensor, soil moisture sensor, soil temperature sensor, No2 sensor और बहुत सारे sensors को पढ़ा और हमने इन सभी sensors का practical भी किया |

Robots :- हमने robots मे दो robot देखा

1. Robot with 5 asix moving arm kit इसमें हम programming कर सकते है|

2. Robo car इसमें हम programming नहीं कर सकते,हमने robo car पर practical भी किया और बहुत कुछ सीखा और चलाया भी

Dc moter :- हमने Dc moter के बारे मे बहुत सी जानकारियां प्राप्त की और Uses देखे इनका

Iot enabled green house :- हमने green house के बारे मे बहुत कुछ जाना और सीखा और इससे related sensor का practical भी किया जैसे soil temperature, soil moisture, No2 sensor इन सभी पे practical भी किये|

Iot smart health :- इसमें हमने 10 sensors को देख और कुछ का practical भी किये जैसे की body temperature check करना, heart beat sensor, pulse sensor आदि sensors को हमने पढ़ा और देखा |

Drone:- हमने drones के बारे मे basic information भी ली और drone को उड़ते हुये देखा |

Thank you!

ANKIT BARAI

MCA 1ST SEM.

This 4 days workshop about arduino and raspberry Pi kit was a great experience for me. First time in my life I attended a workshop on artificial intelligence and IoT. I learned about sensors and I knew how to use it. There in the workshop I knew how to code in different sensors and run them. I told my parents about this workshop, they were very happy to know that our college is inspiring us to move forward to artificial intelligence.

There are my friends who didn't choose this college for MCA. I told them about this workshop, now they are regretting to know about this. They said that a very good opportunity is missed by them. On the first day of workshop was all about arduino I learned to program in arduino. On that day I did a practical of temperature measurement.

On second day we were taught about raspberry Pi kit and it's uses. The third day was all about IOT builder and on the last day a drone was flown by the engineers of Scientech but I missed that. Our last day was all about smart building. Smart building is a building where things happen automatically like opening the door and switch on and off the light etc.

It was a great experience I have ever experienced.

Lastly, I In thank our VC sir, HOD sir, all the professors, ScienTech company & Rohit kumar sir for providing this invaluable learning opportunity. And I look forward to any future workshop or events they may organize.

Thank you!

Radha Singh Chauhan

Msc 3rd Sem. (Computer Science)

हमारे कॉलेज मे 11 सितंबर से 14 सितंबर तक AI &IOT based वर्क शॉप आयोजित की गई थी | इस वर्क शॉप को AI Club के मेम्बर्स ने आयोजित किया था | इस वर्क शॉप मे हमने Robot के बारे मे जाना कि Robot क्या होता है, रोबोट का इतिहास जाना, रोबोट को कंट्रोल कैसे कर सकते है, रोबोट बनाते समय क्या क्या रुल्स फॉलो करने पड़ते है, रोबोट की सीमाये के बारे मे जाना,रोबोट क्या क्या कर सकता है |

5Axixmoving Arms Robot - 5 Axixmoving Arms robot को कैसे operateकरते है और हमने इसे operateकरके देखा | इसमे हमने DCMotor और Servo Motor के बारे मे जाना कि ये motors कैसे काम करती है | ये रोबोट को Wi –Fi से भी कंट्रोल किया जा सकता है |

Basic RoboCar –Basic Robo Car मे Micro Controler के बारे मे जाना | Basic Robo Car मे विभिन्न प्रकार के sensor के बारे मे जाना जिसमे Clap Sensor , IR Sensor , Fire Sensor , Light Sensor , TSOP-IR Sensor के बारे मे जाना | इसमे Sensors के द्वारा path detection , Wall following , Object Following , Obstacle Avoiding , Light detection , Clap Sensing , Fire Sensing आदि application को explore किया |Robo Car को हमने operateकरके देखा |

Green House System –Green House System मे भी विभिन्न प्रकार के sensor को explore किया जिसमे हमने Solar Rediation, Soil Moisture, NO_2, Soil Temperature, Co_2, Atmospheric Pressure , Leaf Wetness , Volatile Organic Compound, O_2 Concentration , Temperature & Humility Sensors को explore किया | इसमे हमने Arduino के बारे मे जाना कि Arduino मे programming कैसे कर सकते है |इसमे हमने Zikbeeके द्वारा sensor से आने वाले डाटा को दूसरे कंप्युटर मे भी देखा जा सकता है , इसकी range 100 मीटर थी ,इसमे Zikbeeको दूसरे कंप्युटर से connect कर दिया और उस कंप्युटर मे हम डाटा देख पाते है |

Smart Health Lab -Smart Health Lab मे हमने ECG(Electro Cardio Gram) , BT(Body Temperature), PCG(Phono Cardio Gram), EOG(Electro OculoGraphy), EMG(Electro Encephalo Gram), SPO_2(Pulse Oximetal) , NIBP(Non-Inversive Blood Pressure), HHI(Human-Human Interface) Sensors को explore किया | इसमे Base Module और Sensor Module एक – दूसरे से Bluetooth से connect थे | 160*128 TFTcolorLCD interface था जिसमे Sensor से ली गई value को देख सकते थे | इसमे हम IFTT service के द्वारा किसी विशेष value पर फोन पर मैसेजऔर ईमेल भेज सकते थे |

Thank you!

Khushi Dewangan

MCA 1st sem

I would like to share my experience on absolutely amazing and enlightening workshop. Totally enjoyed and learned a lot in a comfortable environment. This workshop intended to familiarize the students with the Raspberry Pi and Arduino Uno as processers and their applications.

Dive into the practical side of things by working with Arduino Uno. One of the most popular microcontroller boards in the Arduino family. Learn how to set up the board, write and upload code and interact with various types of sensors.

During the session, the students were given an insight into introduction to Raspberry Pi, Python basics, Software installation, Introduction to IOT, LEDs, switch and Camera interfacing.

Get a Comprehensive understanding of the Internet of things, its significance and how it's transforming industries worldwide. Learns about the various components that make up an IOT ecosystem and discover real world example of IOT application.

Thank you!

DINESHWAR DAHARE

MCA -3 SEM.

In this workshop, I have learned about various sensors, basic robo cars, 5-axis robot etc. I got the opportunity to hands on with these AI tools.

Thank You!


AI
IMPACT
The workshops impact extended beyond the event itself. Many attendees reported using the knowledge gained in their academic project and workshop tasks.

The Atal Bihari Vajpayee Vishwavidyalaya plans to organize follow -up workshop and create an ongoing community focused on AI, ML and IoT exploration. The future plans of the Vishwavidyalaya are as follows-

- AI sensitization for student.
- Development of user-friendly AI application.
- AI- powered healthcare assistance.
- Education and AI literacy program.
- Community engagement and feedback channels.

The AI, ML and IoT workshop organized by "ATAL BIHARI VAJPAYEE VISHWAVIDYALAYA" was a resounding success, providing a platform for participants to delve into these transformation technologies. It not only increased awareness but also empowered attendees with practical skills and knowledge that will shape their future endeavors.

Prepared by-

Geetanjali Soni

&

Shivangi Pathak

MCA- I