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Skill Development program organized by Department of Electronics and Communication Engineering

Advanced Training on Robotics and Industrial Automation

Training on VOICE CONTROLLED AND GESTURE CONTROLLED ROBOT, under CoE in Robotics and Industrial Automation

As a part of **VertechX-9.0**, the Department of Electronics and Communication Engineering, MVJCE, organized an advanced training on Robotics and Industrial Automation, where students trained in **Designing of Voice controlled robot and Gesture based robot.** This training was conducted in collaboration with **Rove Labs Pvt. Ltd.,** Bengaluru, and 61 students from different streams participated. The training was coordinated by Mr. Bhanuteja G (AP, ECE) and Ms. Varsha P H (AP, ECE).

As the Robots industry is reaching its pinnacle, there is a rapidly multiplying opportunity in consumer, industrial, military and office robots. The journey of robotics learning starts with Manipulator (Arm) design and control. In this workshop, students understood about different phases in robotic arm development, calculations, coding involved and electronics control design.

Training on Voice controled robot, organized by ECE dept. on 21st, 22nd and 23rd Feb, 2019. at Robotics Lab
Dr. J Vaideeswaran(Prof, ECE) giving introductory talk about roboics to the students. Dr. I Hameem S (HOD, ECE) and Trainers from Rove labs listening to his lecture.

The Batch 1 training was conducted on **21st, 22nd and 23rd February, 2019.** This training was divided into three sessions. In the first session, the trainers explained to the trainees about the basic of robotics, how to choose components for different robots, and elucidated about the ARDUINO board, and the components required for a basic robot. At the end of the session, students assembled the robot chassis, and created basic movements of robot.

Training on Voice controlled Robot, organized by ECE dept. on 21st, 22nd and 23rd, Feb, 2019 at Robotics lab.
Mr. Shreyas(Co-founder,Rove labs) explaining about difference betwwen development boards and technologies, Mr. Bhanuteja G (AP,ECE) and students listening to his lecture.

The second session of the training was on developing an App on android platform, using MIT App Inventor. Students were made to understand the difference between front end and back end design, after which they designed their own app to control the locomotion of the robot. At the end of the session, students learnt to integrate Bluetooth module to the robot and use voice commands to control the robot.

Training on Voice controlled Robot, organized by ECE dept. on 21st, 22nd and 23rd, Feb, 2019 at Robotics lab.
Arshitha(17AE011), Anusha (17AE010), Sannihita (17CH009) and Kaviya(17CH030) assembling the motors to robot chassis.

On Day 3, students learnt about the Servo motor control, and interfacing with gripper for PICK AND PLACE function. Later, they developed the app for holding the object and moving along with it. The participating students then exhibited their robots in front of the VertechX9.0 venue, to attract other students to Skill Development learning.

Training on Voice controlled Robot, organized by ECE dept. on 21st, 22nd and 23rd, Feb, 2019 at Robotics lab.
Students controlling thier robot using voice commands in front of VERTECHX- 9.0 poster.

During the 3rd day, students learnt to control the robot using GESTURES, with the help of app inventor and inbuilt accelerometer of their mobile phones.

Training on Voice controlled Robot, organized by ECE dept. on 21st, 22nd and 23rd, Feb, 2019 at Robotics lab.
Kavana (17EC057), Chandana (17EC032) and Bhagyalakshmi(17EC023) controlling the action of GRIPPER using voice commands.

Outcome:

- Students learnt about the basics of robotics and how to choose microcontroller, Motors for different robotic applications.
- The 61 students who participated learnt the basics of Robotics and interfacing different components with Arduino development board for VOICE controlled robot.
- Students learnt about Android app development, using MIT App Inventor.
- Students learnt about servo motor interface, and kinematics behind the gripper for PICK and Place of the objects.
- Students learnt to use inbuilt accelerometer of mobile phones, to control the robot.