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Skill Development Training 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 in Robotics and Industrial Automation, at which students trained in **Designing of Voice controlled robot and Gesture based robot.** This training was conducted in collaboration with **Rove Labs Pvt. Ltd.** Bengaluru, with 54 students from different streams participating. The training was coordinated by Mr. Bhanuteja G (AP, ECE) and Ms. Varsha P H (AP, ECE).

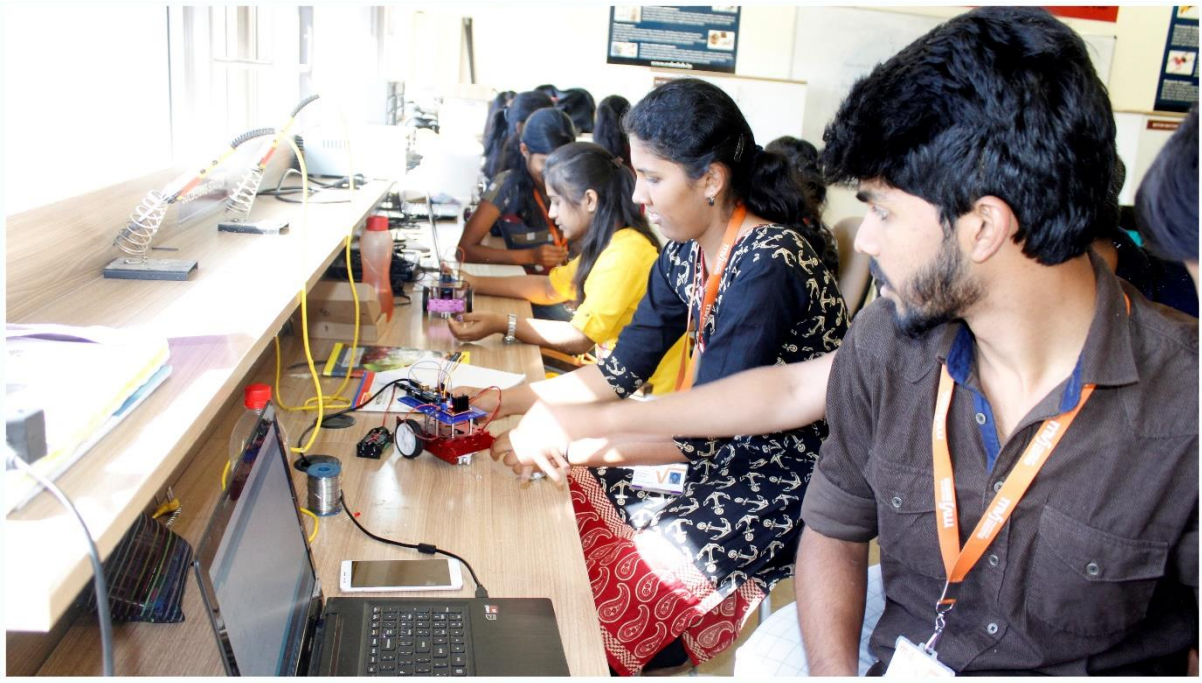
As the Robots industry is reaching its pinnacle, there is a rapidly multiplying opportunity in consumer, industrial, military and office robots. The journey of robotics learning starts with basic design and control. In this workshop, students understood about different phases in robot development, mathematical calculations, the coding involved, electronics control design for pick and placing the objects using voice commands.

Training on Voice controlled Robot, organized by ECE dept. on 25th, 26th and 27th, Feb, 2019 at Robotics lab.
Mr. Shreyas(Co-founder, Rove Labs) explaining about the difference between development board and technology biult using board to the students.

The Batch 2 training was conducted on **25th, 26th and 27th February, 2019.** This training was divided into three sessions. In the first session, the trainers explained to the trainees about the basics of robotics, how to choose components for different robots, and elucidated about the ARDUINO board and the components required for basic robot. At the end of the session, students assembled the robot chassis and made basic movements of the robot.

Training on Voice controlled Robot, organized by ECE dept. on 25th, 26th and 27th, Feb, 2019 at Robotics lab.
Students learning about basic interfacing experiments using Arduino board during training

The second session of the training was on developing an App on android platform, using MIT App Inventor. Students were taught about 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 25th, 26th and 27th, Feb, 2019 at Robotics lab.
Deepakrupa (1MJ15ML004) and other students working on Assembling the robot and verifying the final connections.

On Day 3, students were taught about the Servo motor control, and interfacing with gripper for the PICK AND PLACE function. Later, they developed the app for holding the object and move along with it. Students were also given the task of making changes in the code, according to the delay that the trainers specified for different tasks.

Training on Voice controlled Robot, organized by ECE dept. on 25th, 26th and 27th, Feb, 2019 at Robotics lab.
Student working on MIT App Inventor environment to develop an android app to control the robot using Voice commands

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 25th, 26th and 27th, Feb, 2019 at Robotics lab.
Mr. Shreyas (Co-founder, Rove labs) explaining to students about the concept behind how accelerometer is used in mobile phone for gesture recognition.

Outcome:

- Students learnt about the basics of robotics and how to choose microcontroller, Motors for different robotic applications.
- The 54 student participants learnt the basics of Robotics, and interfacing of 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 the kinematics behind the gripper for PICK and Place of the objects.
- Students learnt to use inbuilt accelerometer of mobile phones, to control the robot.