



**Sri Sai Ram Engineering College**  
Department of Instrumentation & Control  
Engineering



# **Report**

## **Webinar On Robotic Operating System**

**22<sup>nd</sup> May, 2021**

**Saturday**

**3PM-4PM**

**Resource Person : Mr. Arun Balaji**

Project Engineer,

Department of Robotics and Automation Engineering,

PSG College of Technology,

Coimbatore

### **Webinar Coordinator**

Assistant Prof. Mohan Raj K

(Department of instrumentation

and control engineering Sri Sai Ram Engineering College)

(IEEE RAS Student branch advisor)

### **Conveners**

Sai Dasaradharam G

Vignesh B S

**(Members of IEEE RAS)**

### **Written By:**

Sai Dasaradharam G

Sai Santosh L

Vignesh B S

## **Preamble :**

The IEEE's Robotic Automation Society at Sri Sai Ram Engineering College in association with IEEE RAS society at PSG college of technology, conducted the webinar on the topic "Robotic Operating System" on 22nd May , 2021 from 3PM to 4PM. The Speaker was MMr. Arunbalaji, Project Engineer, Department of Robotics and Automation Engineering, PSG College of Technology, Coimbatore.

## **Event Summary :**

The webinar began with a formal Welcome address given by Sai Dasaradharam G on behalf of IEEE RAS, Sri Sai Ram Engineering College. Also the HOD of Instrumentation and Control Engineering, Mrs. T. Mangayarkarasi, welcomed everyone to this webinar. Sai Dasaradharam G, then introduced the speaker, Mr. Arun Balaji, briefly. Then, Mr. Arun Balaji Started the webinar by stating the agendas of the webinar "Robotic Operating System". He projected a clear understanding about Robots, sensors and controllers, Also he gave an idea about Robot programming and why do we need OS in robots. Then he discussed some of the free Robotics Software Framework simulators like Gazebo, Rviz and Moviel. He gave a brief explanation about ROS and started with an example listing out the challenges that we will be facing when working on that. He also presented a simulation of a working robot using a gazebo simulator. He provided us with some open source links and tutorials to learn and practise. He also listed the Future scope of ROS and he discussed the Job opportunities once we Take ROS as a career option and ended the session from his side. He then replied to the questions asked by the students. A Feedback form was provided to the students for the webinar. At the end of the webinar, Vignesh B S offered his thanks to Mr.Arun Balaji, along with other IEEE heads. He thanked all of the invited guests and participants for their solemn presence.

## POSTER OF THE WEBINAR:



# Sai SRI RAM ENGINEERING COLLEGE

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Student Branch Chapter



## WEBINAR ON ROBOT OPERATING SYSTEM (ROS)

Hosting on  Saturday, 22.05.2021  
@ 3.00 PM - 4.00 PM



Resource Person

**Mr. A. Arunbalaji**

Project Engineer  
Robotics & Automation Engineering  
PSG College of Technology,  
Peelamedu, Coimbatore, TN, India.



Mr. K. Mohanraj  
IEEE RAS Advisor

Prof. T. Mangayarkarasi  
HoD/ICE

Dr. A. Rajendra Prasad  
Principal / SEC

Shri. Sai Prakash LeoMuthu  
Chairman & CEO

# MOMENTS FROM THE WEBINAR:

Zoom Meeting | You are viewing MOHANRAJ K's screen | View Options

Participants: G SAI DASAR..., Sri Sairam Engin..., Vignesh B. S..., MADHUMITA..., Karthikeyan-ICE, MOHANRAJ K

Recording...

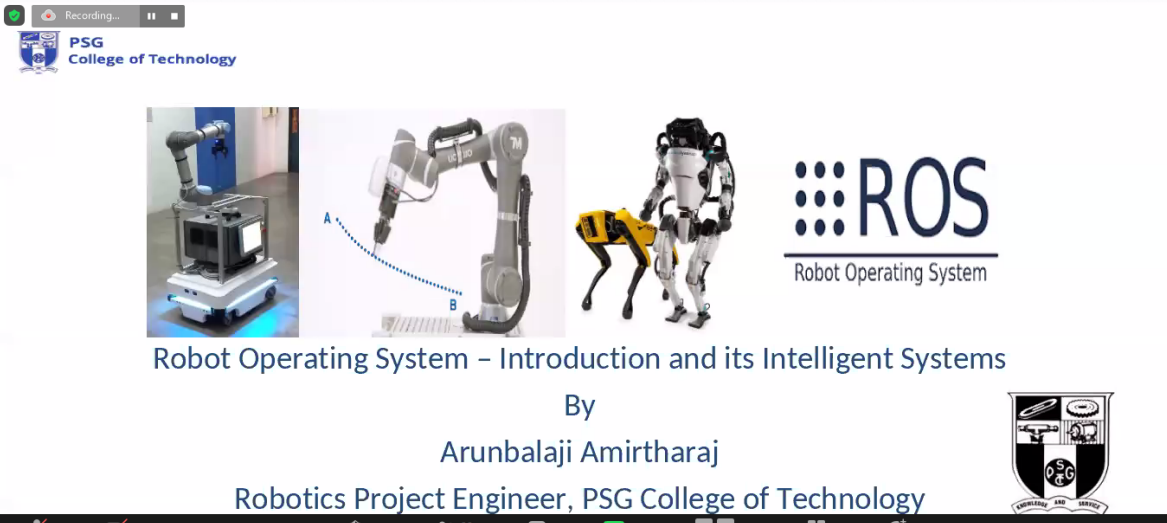


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Zoom Meeting | You are viewing Arunbalaji Amirtharaj's screen | View Options

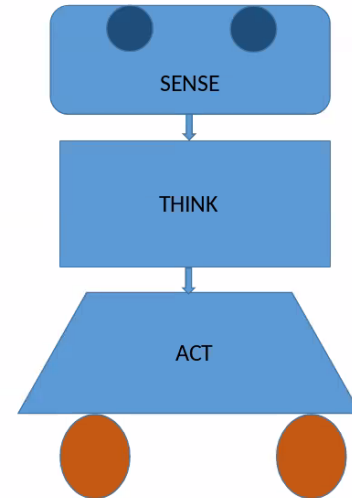
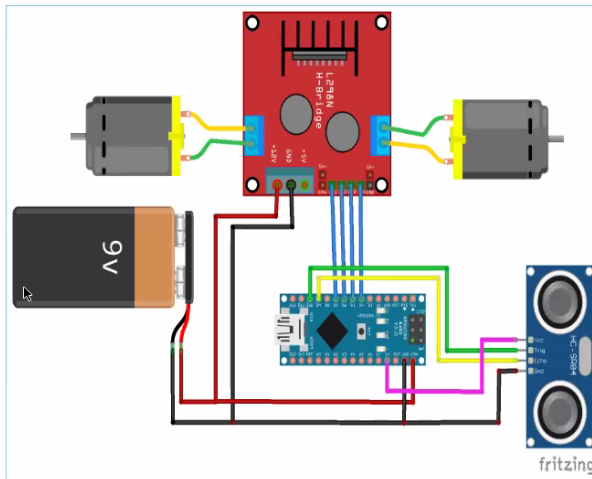
Participants: Manu Bharathwaj, G SAI DASAR..., Sri Sairam En..., MOHANRAJ K, Arunbalaji Amirt...

Recording...



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# Sense – Think – Act - Robot



## What is Robot Programming:

### • Robot Programming

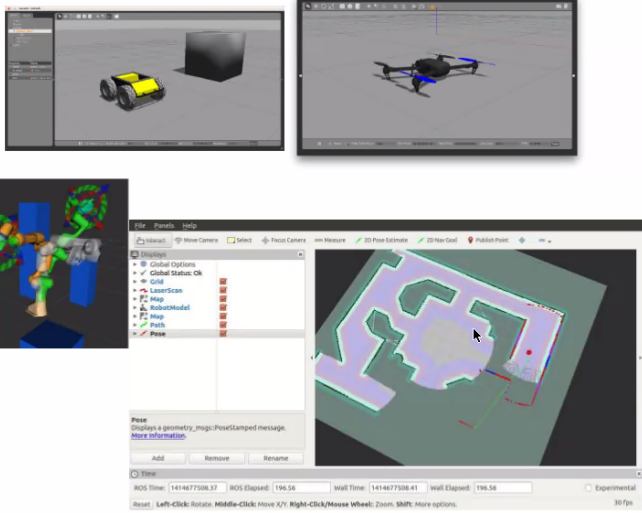
- Modelling the Behavior of a Robot using Programming language
- Robot Sensor Value as input to the Model
- Robot Actuators as output of the Model
- By using Communication Module robot can be monitor and controlled
- By monitoring input Sensor Values robot itself learns and take decision on its own with that we can be said the system as Autonomous.
- By using Programming Languages We can achieve all its Intelligence from semi Intelligence to Autonomous decision Making Systems.

**Programming Languages : C++ and Python etc**

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# Free Robotic Software Frameworks

- **Simulators**
  - Gazebo Simulator : <http://gazebosim.org/>
  - Rviz Simulator: <http://wiki.ros.org/rviz>
  - Moveit Simulator: <http://wiki.ros.org/moveit>

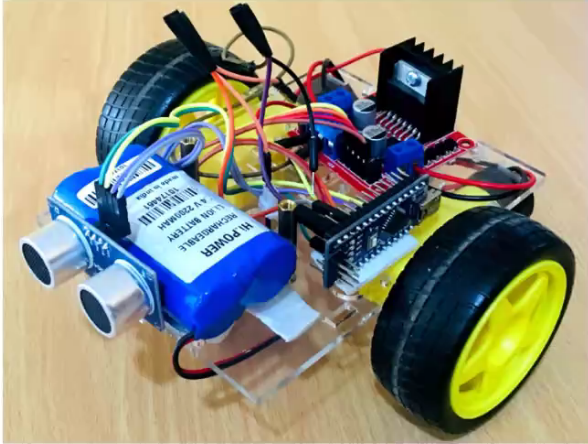


The image shows three screenshots of ROS simulators. The top left shows a Gazebo simulator with a yellow and black mobile robot. The top right shows a Gazebo simulator with a blue and black drone. The bottom right shows the Rviz simulator interface with a 2D floor plan map and a 3D robot model. The bottom left shows the Moveit simulator interface with a 3D robot model and a trajectory visualization.

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# Lets Discuss with some Basic Example

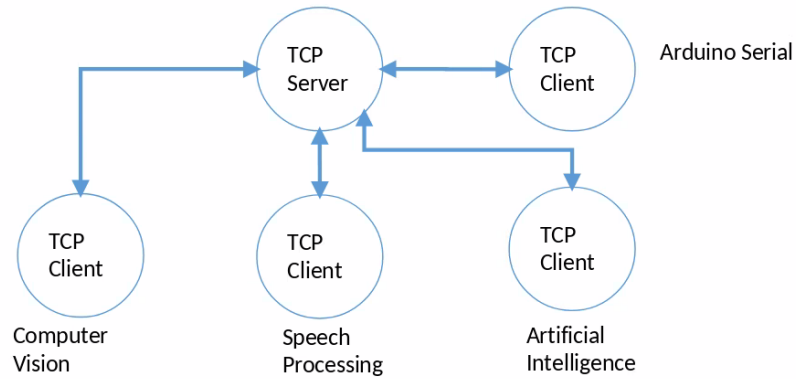


The image shows a photograph of a basic mobile robot. It is a small, rectangular robot with a clear acrylic base. It has two large black wheels with yellow hubs. The robot is equipped with a blue motor driver, a black microcontroller board (likely an Arduino), and various electronic components like resistors and jumper wires. The robot is sitting on a light-colored wooden surface.

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# Software Communication Program

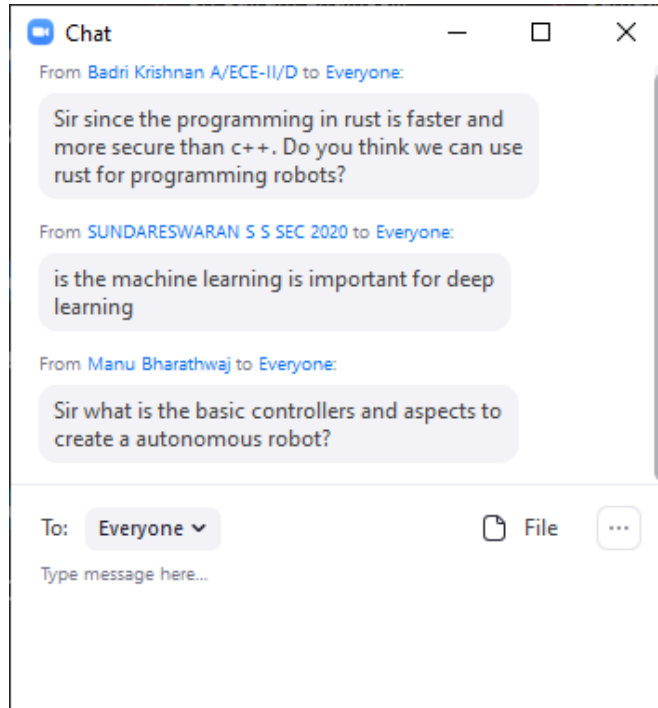


# What is Robotic Operating system

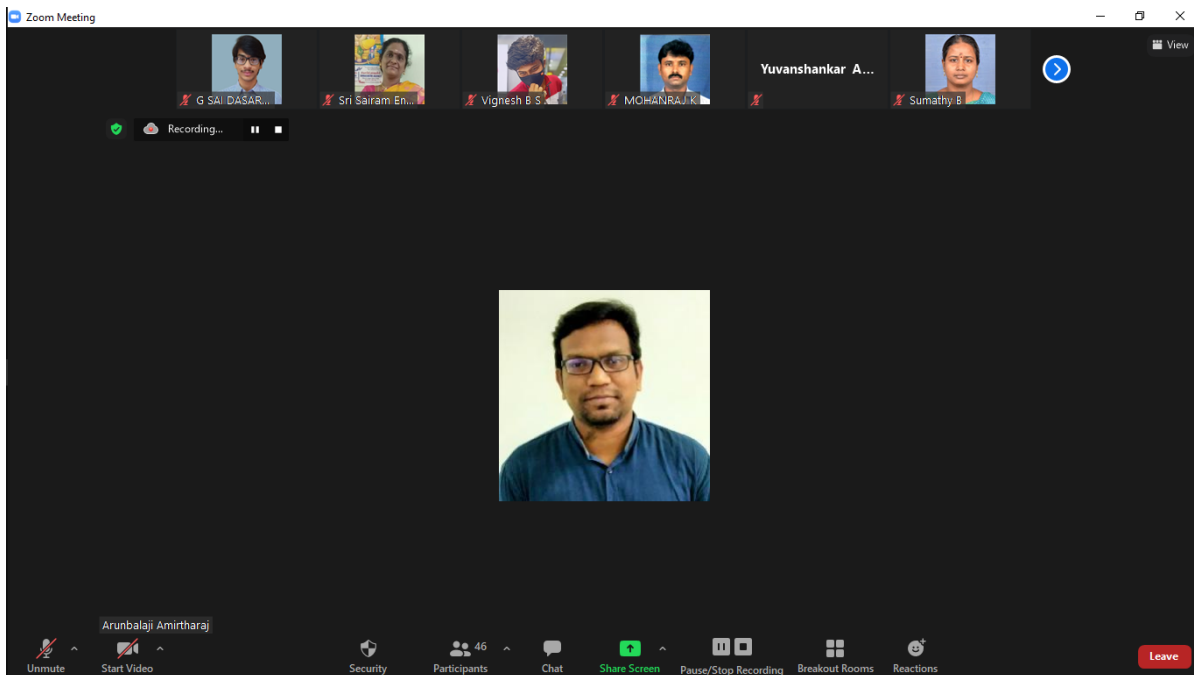
- Open Source Robotic Software Framework, <http://wiki.ros.org/>
- Robotics Middleware, Not a operating system
- Need a Host operating system to Run. Eg: Ubuntu

## • Ros Equation:





**Questions asked by students.**



**The objective of the webinar was achieved.**

-----END OF REPORT-----