

## **SDG report 2020**

### **Goal 9: Industry, Innovation, and Infrastructure**



#### **Summary of Improvements**

Several projects undergone during the past academic year have focused on developing new skills that help to overcome economic, environmental and social challenges faced by due to Covid 19. The projects were focused on developing new techniques or methods addressing the crucial problems people faced during Covid 19, and also improving the quality of life.

- Project 1 aimed at developing a robot that cleans rooms by systematically disinfecting the area with UV light and by killing any Covid 19 virus.
- Project 2 aimed at Developing "Annapoorna"- Food & Drug Delivery Tele-Operated Robot during COVID Pandemic Lockdown
- Project 3 focused on Developing "Bodhi"- Surveillance & PA System Self-Driving Robot during COVID Lockdown

## Projects Highlights

### Amrita Develops “Prabha”- Ultraviolet Room Disinfection Tele-Operated Robot during COVID Pandemic



Year: 2020

Prabha, a robot that cleans room by systematically disinfecting the area with UV light. It can clean a 12’X12’ room, killing any COVID-19 virus that may be lurking, in 30 minutes to one hour depending upon how many lamps are connected to it. Prabha also cleans restrooms and medical equipment. The operator manipulates the robot remotely via Bluetooth.

While Amrita Vishwa Vidyapeetham remains closed as per the Government lockdown, its professors and HODs continue to develop more and more innovations aimed at helping society deal with the novel Coronavirus.

Most recently, Humanitarian Technology (HuT) Lab, Amrita Vishwa Vidyapeetham, Amritapuri campus, headed by Dr. Rajesh Kannan Megalingam (Assistant Professor, Department of Electronics and Communication, School of Engineering, Amritapuri), has unveiled robot prototypes that are ready to help in places unsafe for humans to tread.

The whole purpose of Amrita HuT Lab is to make robots for humanitarian ends. Robots that can assist sick people or that can do jobs that are unsafe for humans,” said Dr. Rajesh Kannan from Amrita Vishwa Vidyapeetham. “For example, some of our early successes were with the creation of a low-cost self-driving wheelchair and a Cocobot that harvests coconuts from places so high that if a human climber were to fall, he would certainly be killed. So, as soon as we realized the seriousness of COVID-19, we began working on robots connected with the pandemic.”

## **Amrita Develops "Annapoorna"- Food & Drug Delivery Tele-Operated Robot during COVID Pandemic Lockdown**



Year: 2020

Need a robot to serve food and water and deliver medicines to quarantined patients? Annapoorna does all that as well as facilitates remote communication between the patients and healthcare professionals. It is also operated either by a joystick or by using a smartphone app, either with Bluetooth or WiFi.

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This remotely operated robot using WiFi can serve food, water and medicine to patients in isolated wards. It also has a telemedicine facility and enables patients in isolated wards to interact with doctors/nurses remotely. It will be very useful for front line workers who supply food, water and medicine to the patients during the pandemic/ epidemic in hospitals.

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## **Amrita Develops "Bodhi"- Surveillance & PA System Self-Driving Robot during COVID Lockdown**



Year: 2020

Bodhi, a robot that can patrol streets during the lockdown and broadcast messages if necessary. Operated remotely via smartphone at up to a distance of 500 meters and fitted with a 360° camera, Bodhi was designed for use by police and security personnel. It can be used in containment areas on streets where even police/security personnel can't access it. Police/security personnel can play recorded messages or even give live instructions from the control station.

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