

CRIKC-CII Exhibition cum Industry Academia Meet

Punjab University (PU), Chandigarh

on

12th November 2022

A team of the following members from Department of ECE & ECM, JUIT Solan have represented the University in **CRIKC-CII Exhibition cum Industry Academia Meet** held on 12th of November 2022 organized by Technology Enabling Centre (TEC), Punjab University (PU), Chandigarh.

1. Dr. Nafis Uddin Khan (Faculty)
2. Mr. Munish Sood (Faculty)
3. Dr. Ajay Kumar Singh (Lab Staff)
4. Mr. Dharendra Kumar Singh (Lab Staff)
5. Mukul Anand (IV Year Student)
6. Zeeshan Naseem (IV Year Student)
7. Shikhar Trivedi (IV Year Student)
8. Tushar Paul (III Year Student)
9. Ekal Sharma (III Year Student)
10. Abhishek Kumar (II Year Student)
11. Utkarsh Sharma (II Year Student)
12. Deepanshu (II Year Student)
13. Sanat Jain (II Year Student)
14. Parth Gupta (I Year Student)
15. Sambhav Thakur (I Year Student)

In this great event, the students from our Department have presented their ideas of innovation through real time working projects and interacted with industry professionals. I am sure this visit would surely help the students for entrepreneurship and internship opportunities.



The details of the projects presented in the meet are as follows:

1. **Hydrohive (Mukul Anand, Zeeshan Naseem and Shikhar Trivedi (IV Year ECE))**

Hydrohive is a start-up dedicated to providing good quality food crops in adequate time with almost zero percent chance of crop failure under any type of climatic condition and agricultural land. Unlike traditional methods, our method will ensure less investment, and fewer resources, and produce more healthy and nutritious yields. Agri-sector is growing in technology which helps in making traditional methods easy but, the technique we are using will change the traditional methods of farming for the betterment of the farmers as well as the Agri sector's economy. Also, common people can have their own farms at home and eat healthy homegrown crops. Hydrohive will provide system placements as well as crops. According to the need of the customer, we can provide either the whole farm placement on the land given by the customer or if the customer needs only the crops and not the farm itself then that is also possible at a fair amount. We have greatly emphasized our customer outreach so that we can cater to the maximum consumer segment. Being a cloud-based agritech startup, we are keen to improve at any point in time and with our 24/7 customer support, we can handle the slightest issue with any of our clients.



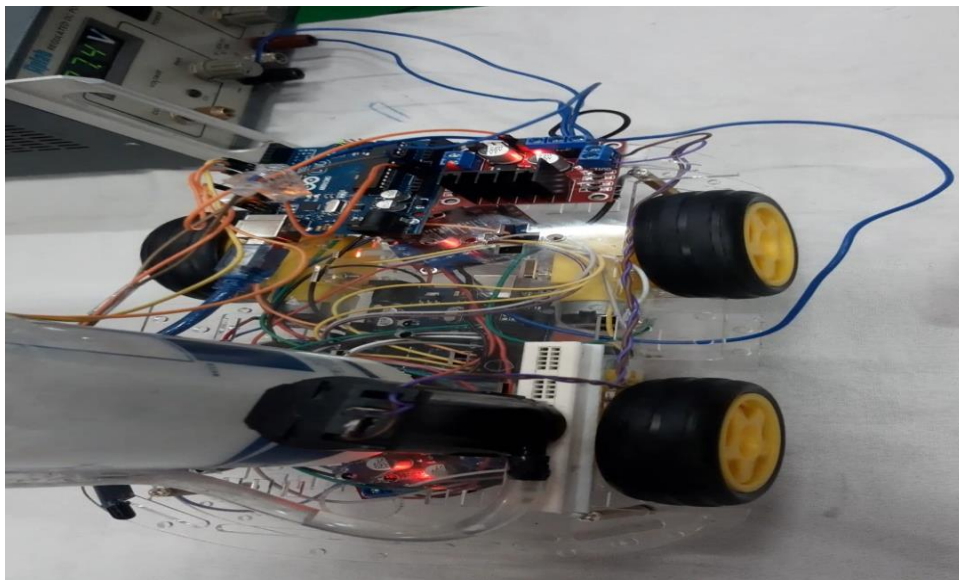
2. **Landslide Prediction System (Tushar Paul and Ekal Sharma (III Year ECE))**

This project is to promote disaster preparedness & to minimize the losses of lives during landslide. For the prototype model we used different sensors including the moisture sensor, vibration sensor, humidity and temperature sensor, ultra-sonic sensor, gyroscope, ESP-32 and Arduino UNO. Arduino IDE is used to get the output from the sensors. In the lab real time landslide model was created, the slopes were built at different angles to test the model multiple times. Output is then send to the Thing Speak software where it can be seen graphically and the results can be analysed & processed. All the different outputs including the soil moisture value, humidity value, vibration value, distance by ultra-sonic sensor, temperature in Celsius and Fahrenheit and acceleration values can be analysed on the laptop or mobile phones.



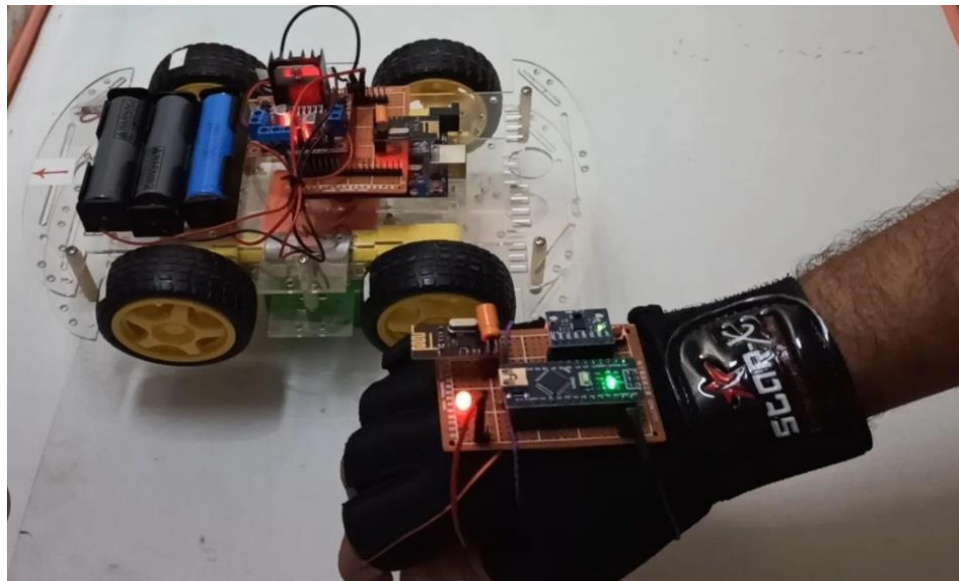
3. Fire Fighting Robot (Abhishek Kumar, Utkarsh Sharma, Sanat Jain and Deepanshu (II Year ECE & ECM))

The problem with the existing system is that the firefighting environment is hard to reach and, being the hilly area it make the situation even worse as it hard for Fire Truck to reach the fire scene and fight for the same. Additionally, the current methods applied in firefighting are inadequate and is heavily relying on humans who are prone to error and life thread due fire debris falling from the hills. The Proposed model will be able to solve all the problem mentioned in existing system like, ability to be deployed at fire location, detect the fire and spray the water or CO₂ accordingly. The robot will feature tank like design having spikes on its continuous track that will provide skid prevention and will make it suitable for all weather and terrain. It will also have four hydraulic arm having small wheel attach that will prevent the robot from flipping over.



4. Gesture Recognition (Parth Gupta and Sambhav Thakur (I Year ECE))

Gesture recognition can be seen as a way for computers to begin to understand human body language. Compared to the primitive user interfaces, such as keyboard and mouse, it builds a richer bridge between the computers and humans. In the project we made we used various integrated circuits and a simple microcontroller i.e. Arduino Lily Pad to act as a brain of computer robot. Accelerometer has also been used to get relevant data deciphering various physical movements and all to deduce and move the vehicle according to the gestures given. We made a handheld vehicle that can be integrated into just about anything and remotely control it to perform various tasks simultaneously with some integrated function too.



Key Highlights:

1. Exhibition of showcase real time working projects and technologies in front of industry people.
2. Expression of Interest (EoI) from industry for commercialization of exhibited projects and technologies.
3. Panel discussions of industry people to know R & D needs of industry.
4. Start – Up and entrepreneurship opportunities in collaboration with industries.
5. Discussions on Industry-Academic relationships for placements and employability.