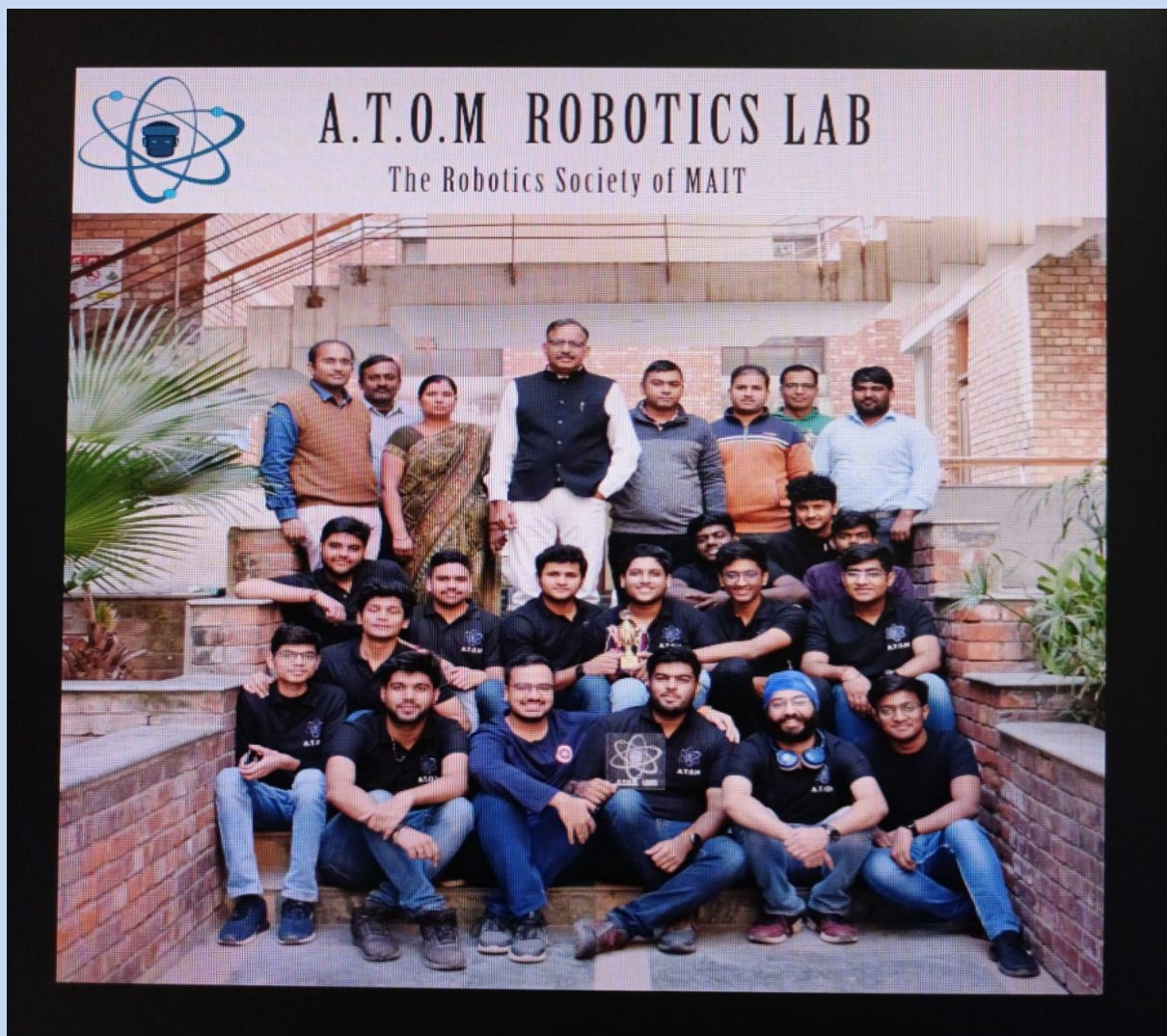# Achievements Report

About Atom

A.T.O.M stands for Advanced Techtronix Organization of MAIT. Here we are trying to build a Society | Community around making more Intelligent and Advanced robots by introducing technologies like ROS (Robot Operating System), CAD (Computer Aided Design), Embedded Systems/IOT, Software Engineering etc.

Many robotics societies all around never go beyond building line followers and wall followers. Though they are the basics and an integral part of robotics and we will also make them, we also want to go way beyond that and introduce you to industrial robotics through the idea of project based learning by making many amazing projects. From room cleaning roombas to self driving mobile UGVs to industrial robotic arms.

No one is perfect! We are not special either. There are many things that we want to learn from you all as much as we can and in return try to give back as much as we can. That's how we build a community.

Achievements Report

USICT - UHack   **18-19 Nov 2022**

Members of Access_denied Krrish Jindal, Manan Gupta and Pratyaksh Singla participated in `Uhack5.0 - hackathon organised by USICT technical college on 18-19 November 2022.
They won a second prize and a cash reward of Rs 25,000 for creating the Advanced Meet project.

Theme: Open innovation

Even in this modern world, creators, event organisers, especially educators, are still limited to the redundant manual work of an assistant rotating the camera to capture the events. online lectures/videos, creating notes and taking pictures.
These are things that can be replaced by our modern technology.

This project consists of 2 modules: note-making that voice to text all important talks/notes and a camera module that tracks people.
In the note maker, voice to text is used and then displayed in a concise form using the NLP model, also added snapshots feature while taking notes to help capture any non-textual data like flowcharts, diagrams, formulas, etc. using hand gesture recognition.

Live person tracking basically tracks the speaker's facial movements, changing camera orientation to keep the speaker's face in frame using OpenCV and deep learning.
Therefore, it can be used in different platforms such as teaching, seminars and office meeting discussions, project presentations, etc.

Github link: https://github.com/krrish-jindal/advance-meet.git
Devfolio link: https://devfolio.co/projects/advancemeets-d0c6

Urbanize Away   **31st Aug-15th Oct 2022**

Competition name: Urbanize Away hackathon
Conducted by: Hackerearth
Team name: Atom
Prize Amount: 500USD
Team members: Divyansh(ece), hriday(cst), Jayesh(ece), Akshaya(ece)
Project name: H.A.L.T(Holistic Traffic Management System)

Members of A.T.O.M Divyansh, Jayesh Akshaya Hriday participated in 'Urbanize Away - hackathon' conducted by Hackerearth from 31st August to 15th of October 2022.

They won the prize and a cash reward of 500USD for Creating the project H.A.L.T(Holistic Traffic Management System).

Theme: City Traffic

The project consists of multiple proximity sensors which helps to determine the density of traffic waiting on a particular junction and accordingly control the traffic lights. It also integrates the use of RFID which detects a passing by emergency vehicle and appropriately communicates with the traffic junctions and creates a priority route for the emergency vehicles. In addition to this, grafana was used to present data in a more Intuitive way.

GitHub link: https://github.com/atom-robotics-lab/HALT

Urbanize away's website: https://www.hackerearth.com/challenges/hackathon/Urbanize-Away/

Eyantra Fellowship- IIT Bombay   **Jul'22 Aug'22**

Opportunity : Fellowship to work on research and development project
Conducted by: Eyantra IIT Bombay
Prize Amount: 60000 INR
Team members: Jasmeet Singh(ECE),Naman Malik (ECE), Manav Sethi (IT)
Project name:Prota Autonomous Navigation project

The founders of Team A.T.O.M, the robotics society of MAIT received an honorarium award from IIT Bombay for their excellent performance in the Prota Autonomous Navigation project and received a total cash prize of 60,000 for their valuable contribution.

This project was aimed at developing an educational ros based navigation and automation bot.

Best Project Award – IIT Delhi   12-Oct-2022

Conducted By : FSM IIT-Delhi
Member name: Arjun K Haridas
Prize Amount: 5000 INR
**Project :** Integration of ROS with Deep Learning

Arjun, one of the admins of ATOM worked at FSM IIT-Delhi for a duration of 2 months, where his project involved the integration of ROS with Deep Learning for performing pick and place operations on a Cobot.

A total of 852 candidates applied for this internship and a total of 61 candidates were selected spread over 8 project domains for the internship after two levels of shortlisting. Out of these, 61 candidates completed the internship and 18 were selected for presentation before the jury members. Finally, 6 candidates were awarded with a prize of INR 5000/- for Best Project Award in each domain. Arjun received the award for Best Project under the Robotics Category, under the mentorship of Prof. Sunil Jha

Github : https://github.com/topguns837/manipulator_ws
Youtube : https://youtu.be/ol3baT544XE
Linkedin : https://www.linkedin.com/posts/arjun-k-haridas-9a5844207_connections-ros-computervision-activity-6987168235997540352--xST?utm_source=share&utm_medium=member_desktop
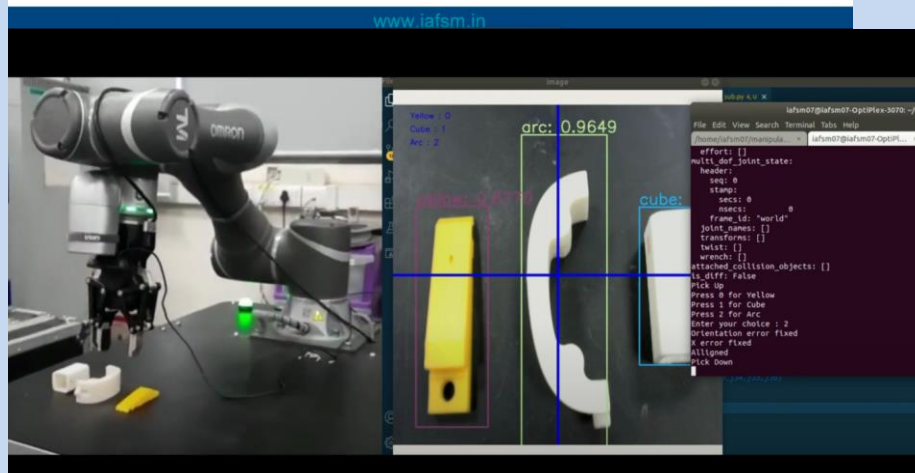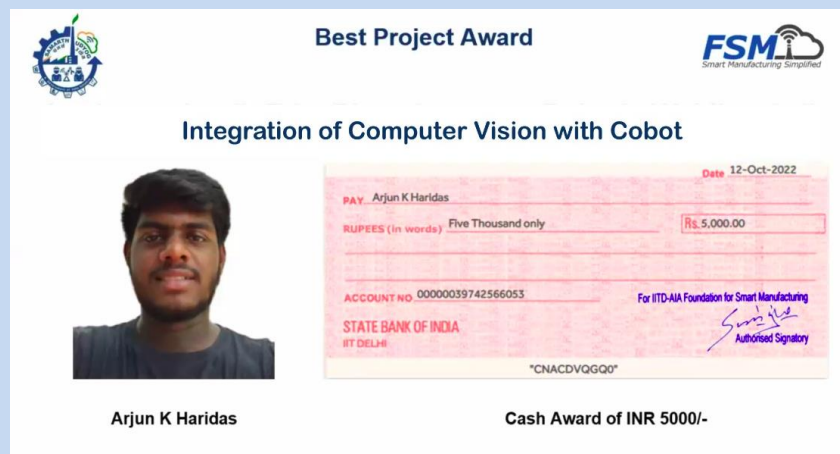
Competition name: MakeItHappen hackathon
Conducted by: GTBIT
Team name: Musketeers
Prize Amount: 5000 INR
Team members: Hriday(cst), Anandita(ece), Aditya(cst), Vansh(ece)
Project name:Cheque-IN

They scored Second Position at the hackathon.The idea was based on fintech aimed at automating the cheque processing procedure in Indian Banking system.

Theme:Fintech

The Project was developed using python and its libraries. The developed solution was capable of processing a large volumes of cheques reducing the human effort required to process the banking transactions manually.

GitHub link: https://github.com/Hriday31/cheque-processing

Hackathon Website:
https://unstop.com/hackathon/make-it-happen-institute-of-electrical-and-electronics-engineers-gtbit-411949

Competition name: Ideathon-Mait
Conducted by: Techcom Mait
Team name: Atom and Finquad
Prize Amount: 3000 + 1000 INR
Team members:
(Atom): Manav Sethi(It),Divyansh Sharma(ece)
(Finquad): Hriday(cst), Anandita(ece), Aditya(cst), Vansh(ece)

Project name: HALT & Cheque-IN

Two teams from Atom participated in the ideathon organised by techcom department of mait. Team Finquad and Atom stood 1st and 3rd respectively in the ideathon with their project ideas.

Competition name: Erudite Ideathon
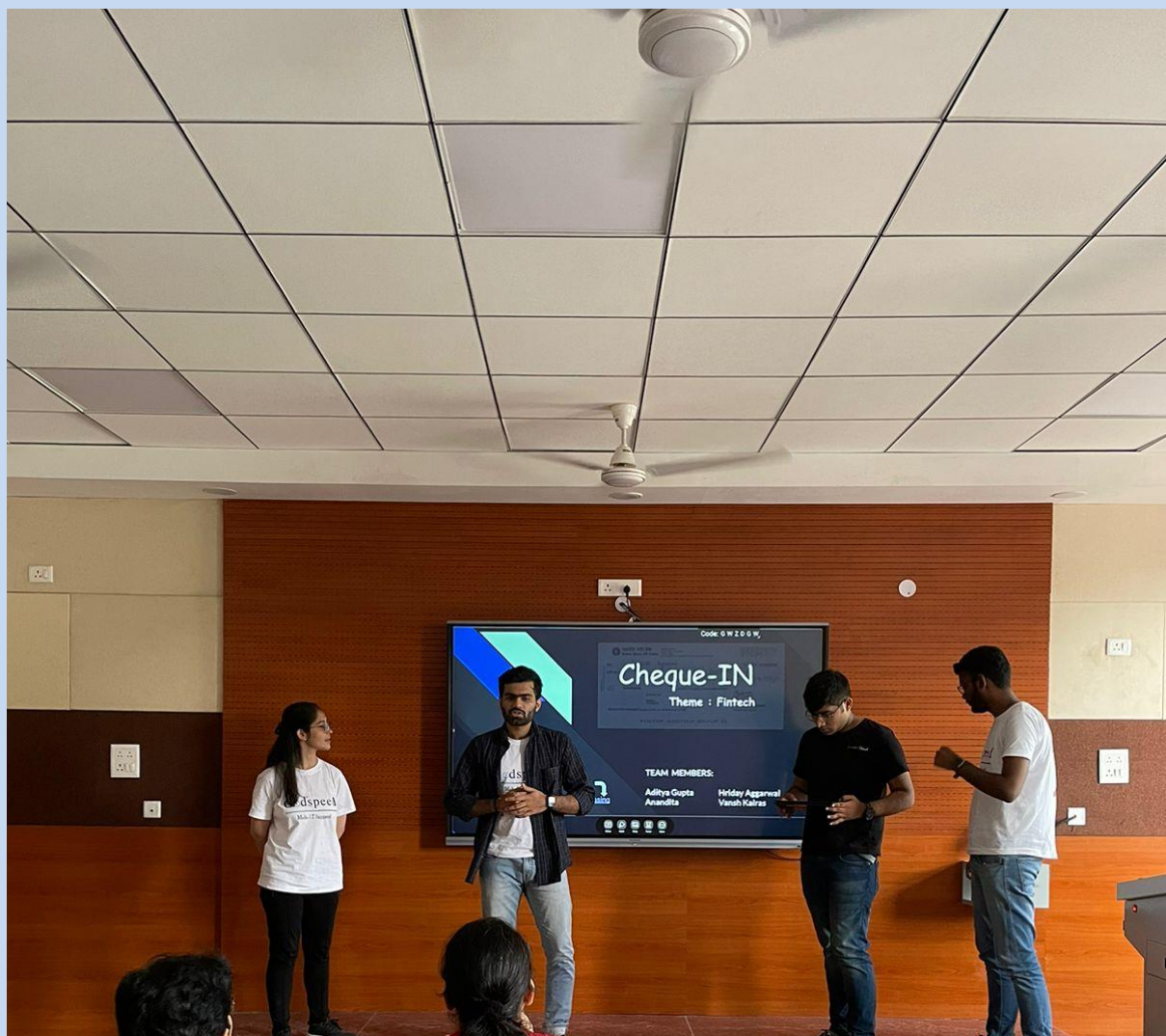Conducted by: IGDTUW
Team name: Cheque-IN
Prize Amount: 2000 INR
Team members: Hriday(cst), Anandita(ece), Aditya(cst), Vansh(ece)
Project name:Cheque-IN

The team stood third at the ideathon..The idea was based on fintech aimed at automating the cheque processing procedure in Indian Banking system.

Ideathon Website:
https://unstop.com/hackathon/erudite-innerve-2022-indira-gandhi-delhi-technical-university-for-women-igdtuw-delhi-435598

Plan2Hack   **12th May 2022**

Competition name:Plan2Hack Hackathon
Conducted by: BVCOE
Team name: HALT
Prize Amount: 2000 INR
Team members: Divyansh Sharma(ece), Hriday(cst)
Project name:HALT

The team stood third at the hackathon..The idea was based open innovation to implement a smarter way of managing traffic situations in metropolitan cities.

Hackathon Website:
https://unstop.com/hackathon/plan2hack-bharati-vidyapeeths-college-of-engineering-bvcoe-new-delhi-279977

BVICAM - Bhartiya Vidyapeeth College Of Engineering (11th March 2022)

First Position (Rs 10,000)

On 11th March 2022, our A.T.O.M society participated in HACK-BVICAM distributed in 3 teams led by 3 of our admins Naman Malik, Jasmeet Singh and Manav Sethi. The competition had 5 positions on the podium, out of which our teams bagged 3 positions! The teams won a total of 15k cash prize, 3 smart phones & many goodies leading to a total prize pool of 50k! The hackathon had many tech related themes like AI/ML, Future Mobility, IOT, FinTech etc. Out of these tracks our teams developed real world projects related to Future Mobility, IOT & Smart City tracks. The team which bagged the first position led by Naman Malik, developed a hardware-based project for monitoring working conditions of workers in hazardous conditions like coal mines. The project consisted of a smart wearable device, which could be attached to the belt buckle of the worker, like a holster. This piece of hardware contained a plethora of sensors like accelerometer, smoke sensor, humidity sensor and temperature sensor. Long range Radio-Frequency modules were used to transfer this data to a central hub with internet connectivity. This data was then visualised on a Grafana Dashboard, where an admin could monitor sensory data for each worker..

GitHub link: https://github.com/atom-robotics-lab/BVPICAM-RUNTIME_TERROR
Hackathon Website:https://bvicam.ac.in/hack-bvicam/

Second Position (Rs 5,000)

The team which bagged the second position led by Manav Sethi, developed a hardware-based project for a holistic traffic management system. The project had multiple IR sensors embedded on the road to determine the density of traffic waiting on a particular signal and accordingly control the traffic lights. Apart from this the red-light sensors also had a RFID receiver which detected a passing emergency vehicle such as an ambulance and appropriately changed the traffic lights. The third team led by Jasmeet Singh, received the runner's up position. Their project was based on making a smart parking system that allows you to book parking spots in public spaces just like you book seats for a movie show. The project used Computer Vision on live video stream from CCTV cameras using OpenCV to detect empty parking spots and accordingly update a Django based web interface. The web interface allowed the user to book a spot which was then blocked by a barrier in real time. All this was demonstrated to the judges using the Gazebo Simulator and ROS (Robot Operating System).

GitHub link: https://github.com/atom-robotics-lab/HALT
Hackathon Website:https://bvicam.ac.in/hack-bvicam/

Third Position (Rs 2000)

The third team led by Jasmeet Singh, received the runner's up position. Their project was based on making a smart parking system that allows you to book parking spots in public spaces just like you book seats for a movie show. The project used Computer Vision on live video stream from CCTV cameras using OpenCV to detect empty parking spots and accordingly update a Django based web interface. The web interface allowed the user to book a spot which was then blocked by a barrier in real time. All this was demonstrated to the judges using the Gazebo Simulator and ROS (Robot Operating System).

GitHub link: https://github.com/atom-robotics-lab/Know_Parking
Hackathon Website:https://bvicam.ac.in/hack-bvicam/