किर IITH

the crowning glory

A Quartely e-newsletter of IIT Hyderabad

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भारतीय प्रौद्योगिकी संस्थान हैदराबाद
भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

ROBOTICS & AUTOMATION

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Editorial Epistle

Dear Esteemed Readers,

Greetings!!

As we present the latest edition of किरIITH, we take this opportunity to extend our sincere gratitude to each one of you. Your steadfast support and engagement continue to be a source of immense encouragement for our entire team.

Your keen interest, insightful feedback, and enduring curiosity about the developments at IIT Hyderabad consistently motivate us to strive for excellence and deliver content that is both informative and impactful. It is your meaningful connection with our publication that renders this endeavour truly rewarding.

As always, this edition, Vol 6, Issue 4, Oct - Dec 2024 (Issue - 21) is dedicated to one of IITH's key thrust research areas, *"Robotics&Automation@IITHyderabad"*. In today's rapidly advancing technological landscape, Robotics and Automation have emerged as pivotal drivers of innovation, efficiency, and transformation across a wide spectrum of industries. Their growing relevance is not merely a testament to technological progress, but a reflection of society's evolving needs and aspirations.

As we move toward a future shaped by Industry 4.0, the role of Robotics and Automation will only become more pronounced.

Robotics and Automation research in a technical institute serves as a catalyst for innovation, bridging theoretical knowledge with real-world application. It empowers students and faculty to pioneer intelligent solutions that shape the future of industry and society.

At IITH, Robotics and Automation research delves into the convergence of intelligent systems, advanced control, and human-machine collaboration—pushing the boundaries of science to engineer transformative solutions for a rapidly evolving world.

This edition presents a thoughtfully assembled overview of the remarkable progress unfolding in Robotics and Automation at IITH, highlighting groundbreaking research, inventive thinking, and the collaborative ethos at the heart of our academic journey. Your continued encouragement inspires us to come back with even more engaging and insightful editions of "किरIITH."

Wishing you an enjoyable read—stay tuned and stay engaged!

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Dear Readers,

It is with great pride and enthusiasm that I present to you the latest edition of the IITH Newsletter, capturing some of the significant milestones and transformative initiatives that reflect the dynamism and vision of the Indian Institute of Technology Hyderabad (IITH).

At IITH, we remain steadfast in our commitment to addressing pressing societal challenges through cutting-edge research. Our recent work on developing an Urban Flood Information System (UFIS), led by Dr. Satish Kumar Regonda, is a commendable step toward mitigating the recurrent issue of urban flooding in Hyderabad. By integrating data collection, modeling, and forecasting, this system aims to support policy-makers and city planners with timely and actionable insights.

In the field of infrastructure, IITH researchers have proposed the use of GFRP rebar and discrete fiber-based reinforcement systems in concrete, offering a sustainable and long-lasting alternative to traditional construction materials. This innovation aligns with our broader vision of contributing to national development through durable and cost-efficient engineering solutions.

Our ecosystem of innovation continues to thrive. The BUILD Program, launched in collaboration with Greenko, is nurturing student innovators by providing financial and institutional support to 75 bold and unique ideas. Meanwhile, the iTIC Incubator has expanded its reach through strategic collaborations—be it with Hexagon Capability Center India to establish a Precision Lab, or with the College of Defence Management (CDM) to foster defence-oriented startups under the ABCD - Boot Camp initiative.

International engagement is another area of significant growth. The signing of an MoU with Monash University, Australia, during inauguration of Australia India Education and Skill Council meet, marks a major step toward global academic collaboration. The presence of education ministers and dignitaries from both nations underscores the importance of this partnership. The launch of India's first Nikon Centre of Excellence on our campus, a milestone in imaging research and education.

Our involvement in national initiatives such as Yuva Sangam Phase III, in collaboration with BHU and IRCTC, continues to promote cultural exchange and unity among youth from diverse backgrounds. Similarly, our collaboration with NXP India and the Fabless Chip Design Incubator (FabCI) has yielded impressive results, recognizing top semiconductor startups that are poised to shape India's technological future.

Lastly, we celebrated our 4th Annual Alumni Day in hybrid mode, honoring the achievements of our growing alumni network and their contributions to entrepreneurship and social impact.

IITH is also emerging as a powerhouse in Robotics and Technological Innovation. With multiple dedicated research labs and interdisciplinary programs, our faculty and students are engaged in pioneering work spanning autonomous systems, industrial robotics, biomedical devices, and AI-integrated automation. These efforts are supported by strong industry linkages and international partnerships, reinforcing our vision of developing solutions that not only advance the frontiers of technology but also address societal needs.

Each of these accomplishments reflects the tireless efforts of our faculty, students, staff, and partners. At IITH, we remain driven by our vision to innovate, collaborate, and serve humanity.

~ Prof B S Murty
Director
IIT Hyderabad

A Note from "Head of Mechanical and Aerospace Engineering"

KID: 20240401

As we have been entering into the age of intelligent machines in the field of teaching, sports, defence, entertainment, healthcare, space technologies, socializing with newborn and the elderly, the research and development have been ongoing in the development of robust artificial intelligent algorithms based on cognitive process utilizing different sensory organs found in nature [1] and robotics systems of different types and sizes [2]. The future lies in the development of error free communication systems among such automated systems. Recent articles by Billard et al. [3] cites this roadblock in the selection of appropriate AI models developed based on datasets rather than the physical human model. To develop robots of the future generation, more emphasis needs to be given on the human centric collaborative and lifelong learning mechanisms of the robots for safe and sustainable integration of robots with humans. To accelerate the research in this area, automation and intelligent systems/algorithms have been developed in various research verticals such as robotics, mobility, experimental mechanics, smart manufacturing, aerospace and space technologies, theoretical and applied mechanics, computational mechanics, and biomechanical systems. To name a few intelligent technologies, an automated metal 3D printing system, automatic moment of inertia measurement system, stiffened flexible arm manipulator, piezo actuated complaint micropump, system for incremental sheet forming and hybrid fabrication were developed.

To produce the trained manpower for the futuristic intelligent systems, the Department of Mechanical and Aerospace Engineering took the lead to start minor programs in "Robotics" for undergraduate students in 2024 and subsequently starting a postgraduate MTech program in "Robotics and Intelligent Systems (RIS)" in 2025 [4]. The foundation of the RIS program is based on multi domain robots comprising the Soft, Marine, Aerial, Recreational and Transport (SMART) systems.

The important courses such as probability and optimization, machine learning and its applications, control systems designs, robotics kinematics and dynamics supported specialized labs such as sensors and actuators, robotics vision, robotics and automation, advanced robotics lab. Furthermore, specialized elective courses like soft robotics, underactuated robots, marine robotics, autonomous robotics systems, vehicle dynamics.

The current research focus comprises the development of humanoid robotic systems for adaptive locomotion and interaction, engineering and design of aerial-aquatic multirole drones with tiltable thrusters for cross-medium mobility, development of unmanned surface vehicles (USVs) for water quality monitoring and sludge mapping, design of a remotely operated vehicle (ROV) for underwater close-range inspection, creation of GNSS-denied indoor drones for inspection in complex industrial environments, fabrication of a soft, pneumatically actuated autonomous underwater vehicle (AUV) for aquaculture, design and development of AUV for tunnel inspection, TO-SoFiT: topology optimization of soft fish tail design, TO-SoCrawl: topology optimization of soft crawling insect, TO-BiSoGrab: topology optimization of bidirectional soft grippers, design of flexible devices for medical device applications, design of soft grippers and tires for space applications, and human centric control strategy for driver. Apart from these areas, there is immense potential for interdisciplinary research across the disciplines such as artificial intelligence, computer science, electrical engineering, biotechnology, industrial engineering. I am sure the reader will benefit from the contents of the current issues to explore further the interesting field of robotics and automation.

[1] Amos Matsiko, taking inspiration from nature is a no-brainer.Sci. Robot.8,eadi 2720(2023). DOI:10.1126/scirobotics.adi2720

[2] https://www.nature.com/immersive/robotics-ai/index.html#group-section-Features-jS2s0IQWaq

[3] Billard, A., Albu-Schaeffer, A., Beetz, M. et al. A roadmap for AI in robotics. Nat Mach Intell 7, 818–824 (2025). https://doi.org/10.1038/s42256-025-01050-6

[4] https://mae.iith.ac.in/files/2025/MTechRIS-Flyerv3.pdf

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Department of Mechanical & Aerospace Engineering

CERBRUS: An Open-Source Quadruped Robot with a Front-Mounted Gripper Inspired by Ant Morphology


[1]


[2]

KID: 20240402

Inspired by the functional anatomy of ants, CERBRUS is an open-source quadruped robot equipped with a front-mounted gripper designed for mobility and manipulation in constrained environments.

Unlike traditional quadruped robots that mount manipulators on the torso or back, CERBRUS integrates the gripper at the front "mouth" area, mimicking the ant's mandibles. This bio-inspired design streamlines interaction with the surroundings while improving balance and reducing mechanical complexity.

The motivation stems from the limitations of conventional designs, such as shifting centre of mass and reduced reach, which complicate locomotion and interaction in narrow spaces. Drawing from nature, CERBRUS proposes a compact alternative that blends locomotion with manipulation capabilities in one elegant, insect-like form.

Mechanically, CERBRUS is designed using SolidWorks and optimized through several iterations to balance weight and strength. The final structure measures 550 mm in length, with a 300 mm shoulder width and weighs approximately 3.6 kg. Structural analysis under a 20N load for each leg has been carried out, indicating a load-bearing capacity of up to 8 kg (80N) considering all four legs. The gripper, actuated via servo-driven gears, offers 2 degrees of freedom and rubber-ended tips for better grip, suitable for simple pick-and-place tasks.

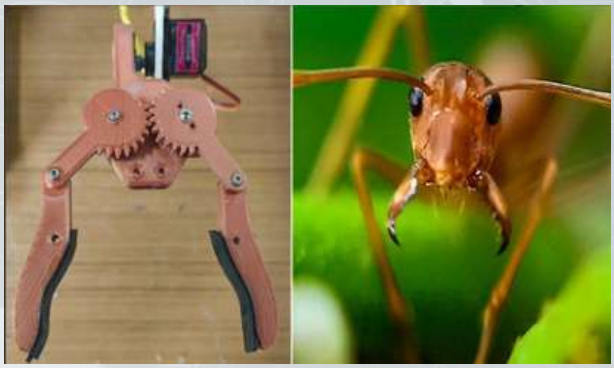

Figure 1: Comparison of the designed Gripper and an Ant for reference

Electronically, CERBRUS is powered by a Raspberry Pi 5 paired with Arduino Mega and Nano boards. A variety of sensors, including BNO055 IMU and voltage sensors, support telemetry and stabilization. Communication between the robot and its custom-built controller is handled via HC-12 radio modules. The controller features joysticks, potentiometers, and a touchscreen LCD interface, making the system fully interactive and field- ready. The software stack is built around ROS2 (Jazzy), hosted on Ubuntu 24.04, with modular packages handling tasks like gait control, hardware interfacing, pose estimation, and fall recovery.

Custom ROS messages streamline data transmission, while nodes such as commander-node and pose-detect-node manage locomotion and visual feedback. A PID-based balancer maintains robot orientation, actively adjusting leg heights to stabilize the robot in real-time.

In terms of motion, CERBRUS employs a trot gait, where diagonal pairs of legs move simultaneously. Cycloidal trajectories have been implemented to create smooth, biologically inspired footpaths. Trajectory generation scripts are optimized for control loop frequencies of up to 103 Hz, offering real-time responsiveness.

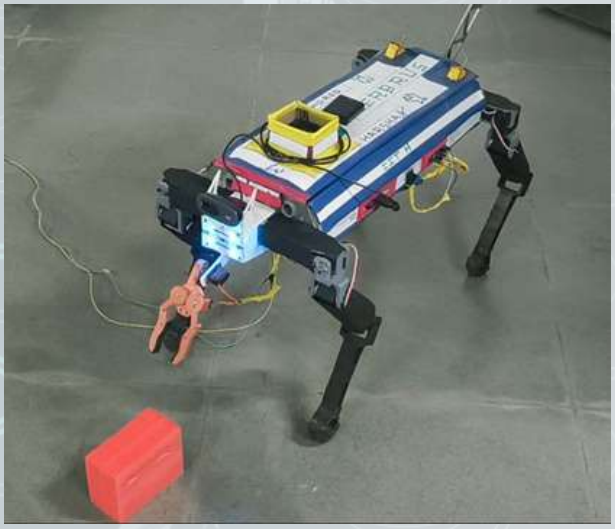

Figure 2: Final Design of the Robot

A key highlight is the project's modularity. The user guide enables seamless operation from boot-up to execution, and a dedicated developer mode allows for code modifications via SSH or HDMI interfaces. The robot's capabilities were validated through indoor and outdoor testing across different terrains.

CERBRUS bridges a critical gap in mobile robotics by fusing bio-inspiration with robust design and open-source accessibility. It holds potential for applications in search and rescue, exploration, and other domains where volume, weight, and environmental interaction are crucial.

Future directions include enhancing autonomy with sensors like LiDAR, integrating machine learning for gait optimization, and exploring swarm robotics to enable cooperative robotic behaviors.

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Open-Loop Centering of Parts on a Horizontally Vibrating Frictional Table

KID: 20240403

Parts manipulation refers to the process of handling, orienting, and assembling mechanical or electronic components in industries such as manufacturing, robotics, and automation.

The simplest type of manipulation is parts feeding, which involves the automated movement of one or more objects to a target position. Prehensile and non-prehensile feeding techniques are two major categories used in automation. Prehensile techniques involve grasping or holding the part using robotic grippers, which are common in robotic arms and are used to pick and place objects precisely.

On the other hand, non-prehensile techniques do not involve direct grasping but rely on pushing, sliding, vibration, rolling, or controlled motion to guide parts to the desired location. Examples include vibratory bowl feeders, conveyor belts, air jets, etc.

Reznik [1] proposed using a flat rigid frictional table as a universal planar part manipulator. Time asymmetric vibrations are given to the table to ensure the continuous net frictional force is acting on the particles that are placed on the table.

However, closed-loop control was used for manipulation, with feedback of the part's position using a camera. Vose et al. [2] achieved open-loop control of parts on a vibrating table by exciting it in all six degrees of freedom using six actuators. In our work, we introduce a novel open-loop method to vibrate the table purely horizontally, causing parts placed on it to move toward the center due to friction.

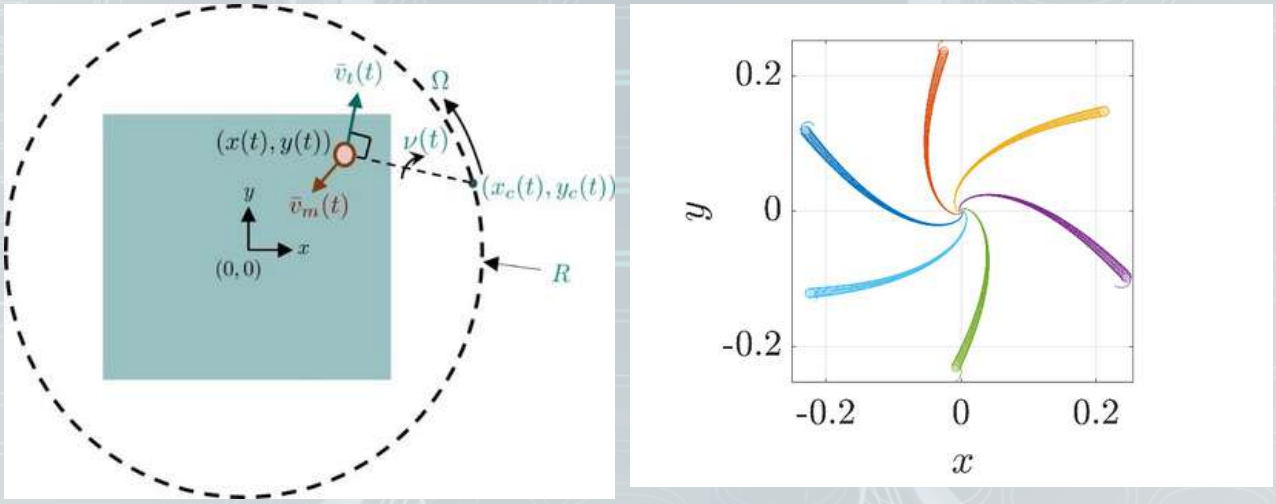

Figure 1 (a). Schematic representation of the horizontally vibrating table and the particle. The table moves in the x–y plane. It rotates about its instantaneous centre with angular velocity. The sliding particle is instantaneously at the point in space. The velocity of the sliding particle is, and the velocity of the physical point of the table instantaneously touching the particle is given by. (b) Trajectories of the particle in the x–y plane for different initial conditions show the approach to the target location (the origin).

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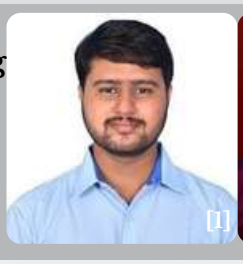
Development of Unmanned Surface Vehicle Platform for Lake Monitoring and In-Situ Water Sampling: An Initiative for lake health monitoring in and around GHMC

KID: 20240404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[3]

1. Introduction

Urban lakes are vital ecological assets that provide water for domestic and industrial use, regulate microclimates, and offer recreational value. However, many such lakes are increasingly under threat due to untreated sewage, industrial effluents, and unregulated dumping. Traditional monitoring methods—manual water sampling and periodic laboratory testing—are labour-intensive, limited in spatial coverage, and often lag in detecting pollution trends. To address this challenge, IIT Hyderabad is developing a modular Unmanned Surface Vehicle (USV) platform based on the Blue Robotics Blue Boat, equipped with a comprehensive navigation and environmental sensing suite. The system aims to autonomously monitor, map, and sample urban lakes, generating high-resolution spatio-temporal datasets to support lake health monitoring and enable informed decision-making for sustainable water resource management.

2. System Architecture and Capabilities

The IITH-USV platform shown in Figure-1 is a compact, modular robotic system tailored for real-time monitoring, autonomous navigation, and adaptive sampling. Key hardware and software features include:

2.1. Navigation and Control

- GPS-aided INS for navigation and control
- Autopilot controller with real-time mission execution
- Path planning and obstacle avoidance algorithms
- Vision camera for obstacle detection and situational awareness

2.2. Environmental Monitoring

- Real-time water quality sensing suite: pH, Oxygen Reduction Potential (ORP), Dissolved Oxygen (DO), and Electric Conductivity (EC) sensors
- Echosounder and Side Scan sonar for bathymetry and sludge profiling
- GIS-based tools for geospatial visualization of water parameters profiles

2.3. Modular Sampling Mechanism

- Custom-built carrousel water sampler capable of collecting discrete samples from targeted coordinates,
- Samples collected will be sent for extended lab analysis to sample for water parameters including nutrients, heavy metals, microbial content etc.

This integrated robotic system is designed not only to conduct autonomous surveys and lake health monitoring but also to adapt payloads depending on specific use cases. Figure 2 shows the USV platform being tested in the in-house pool at IITH. Figures 3a and 3b illustrate the waypoint navigation and survey missions conducted in the same pool

Objectives and Novelty

This project's vision extends beyond routine data logging. It aims to build a scalable, autonomous lake monitoring solution with the following key goals:

1. **Design a Modular USV:** Develop a robust platform with modular architecture, supporting future sensor and payload upgrades.
2. **Sensor Fusion for Navigation Safety:** Integrate data from GPS, radar, sonar, and vision to enable real-time collision avoidance and optimised routing.
3. **Comprehensive Water Monitoring:** Acquire high-resolution spatio-temporal data on water quality parameters, visualized through GIS mapping.
4. **Sludge Profiling and Bed Mapping:** Leverage sonar data for anomaly detection models and bathymetry
5. **Data Dissemination and Public Engagement:** Build a database for sharing water health dashboards with urban bodies, pollution control boards, and the public.

With its real-time data streaming and sample-collection abilities, the platform acts as both an automated scout and a mobile lab assistant, providing a rapid lake monitoring system. This initiative marks a significant step toward human-centric and environmentally responsible robotics.

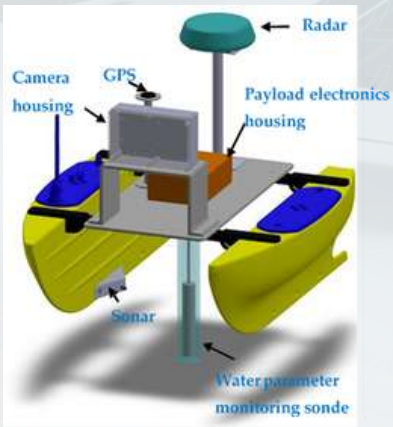

Figure 1. Configuration of the USV-IITH

Figure 2. Trails of the platform – inhouse pool - IITH

Figure 3a. Survey mission

Figure 3b. Waypoint mission

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[2] Mr Vishal Khandare
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A SUCSHM (सूक्ष्म) Soft Robotic Gripper

SUCSHM Lab, Department of Mechanical and Aerospace Engineering

KID: 20240405

As Shakuntala Devi (Indian mental calculator) said, “Everything around you is mathematics.” Therefore, at SUCSHM (Searching Unique Class of Small-scale High-performance Materials) Lab in the Department of Mechanical and Aerospace Engineering at IITH, we emphasize the development of mathematical models to understand the fundamental physics that governs various physical problems involving actuation techniques of multiphysics-based slender, rod-like soft robotic grippers, plant growth, innovative and energy-efficient metamaterials.

In this article, we will limit our discussion to the growing field of soft robotics. Soft robotics is a booming field that focuses on designing and developing robots made from flexible and highly deformable materials. These robots can mimic the adaptability and dexterity of biological organisms.

Unlike traditional rigid robots, soft robots are built from highly compliant materials, such as silicone, elastomers, and shape-memory alloys, allowing them to interact safely with humans and delicate objects without causing harm or damage. These soft robots can undergo large deformations, thus making them capable of being used in medical applications such as minimally invasive surgery (MIS), targeted drug delivery, and many more.

We primarily model these soft robots as slender multiphysical bodies that can either bend, twist, translate, or undergo a combination of these mentioned deformations to perform the desired task.

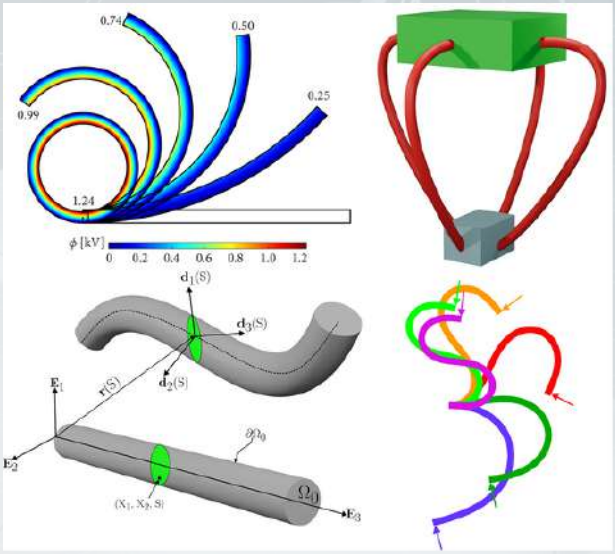

Figure 1. A Glimpse of our work at the SUCSHM (सूक्ष्म) Lab

Unlike conventional (rigid) robots, soft robots can grasp objects without causing damage and are safer for human interaction.

Additionally, they do not require precise control or complicated algorithms to operate effectively. This approach utilizes hydraulic or pneumatic, thermal, or electric actuators that can undergo large deformation rather than traditional motors or rigid linkages.

As a result, soft robots can effectively mimic natural movements, which reduces mechanical complexity and allows for safe operation in environments designed for human interaction.

Furthermore, the absence of bulky motors makes soft robots lighter, quieter, and more energy-efficient. For these soft grippers to securely grasp and hold objects, friction plays a critical role in its performance. When the soft gripper interacts with the surface of the object, the friction between the gripper's surface and the object prevents the slipping of the object and provides secure grasping. The friction is directly influenced by factors such as surface texture, material properties, and the normal force exerted by the gripper.

In our work, we control the normal force that the gripper acts upon the object via different designs and voltage actuation. By carefully adjusting frictional forces, engineers can design more reliable and efficient grippers capable of handling delicate objects without causing damage.

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Advancing Intelligent Robot Motion Planning and Learning in Dynamic Environments

KID: 20240406


[1]


[2]


[3]


[4]

Motion planning in dynamic and unstructured environments remains a critical challenge in deploying intelligent robots for real-world applications. At the Robotics and AI Lab at the Indian Institute of Technology Hyderabad (IITH), we focus on developing advanced motion planning algorithms that enable robots to operate autonomously in environments characterized by a mixture of movable and immovable obstacles. Our research targets both indoor and outdoor settings, ranging from assistive indoor robotics that rearrange furniture to enable navigation, to agricultural robots that interact with natural elements like leaves and branches to harvest fruits efficiently.

Our group, comprising one PhD and three master's students, investigates hybrid strategies that combine classical motion planning algorithms with machine learning and reinforcement learning (RL) techniques. These strategies aim to enhance the robot's adaptability, decision-making, and long-term autonomy in complex tasks.

At the core of our research is the integration of semantic understanding and physical interaction in motion planning. Unlike traditional planning approaches that treat the environment as static or binary (free vs. occupied), our algorithms distinguish between static obstacles and dynamic or manipulable objects. For example, in indoor scenarios, a mobile robot may push chairs out of its path to reach a desired location. In agricultural environments, our robots must plan efficient trajectories while dynamically repositioning foliage to access fruit-bearing branches. To tackle these challenges, our lab explores three key research directions:
We build upon traditional planners such as Rapidly-exploring Random Trees (RRT) and A* algorithm by embedding scene semantics and manipulability information.

This allows the planner to reason about potential object interactions and make informed trade-offs between path optimality and manipulation effort. Our use of deep reinforcement learning (DRL) facilitates the development of policies that learn from environment interactions and improve over time. Robots trained using DRL can explore the action space involving pushing, pulling, or avoiding objects based on rewards tied to goal achievement and energy efficiency.

To enhance situational awareness in occluded or cluttered environments, we integrate NBV planning to guide robot sensors (e.g., RGB-D or stereo cameras) towards the most informative viewpoints. This is particularly useful in agricultural settings where visual occlusion from leaves can hinder object detection and manipulation.

Our experimental platform consists of simulated and physical testbeds equipped with mobile manipulators and 3D vision systems shown in 1. We benchmark our algorithms using indoor navigation challenges and outdoor harvesting scenarios, demonstrating improvements in success rate, task completion time, and robustness to environmental uncertainty.

Our ultimate goal is to enable robots to intelligently interact with their environment rather than merely navigating around it. By pushing the boundaries of motion planning, learning, and perception, we strive to bring robot autonomy closer to deployment in real-world, human-centric, nature-integrated settings.

As we look ahead, our focus will continue on developing generalizable frameworks that combine model-based reasoning with data-driven adaptability. We also aim to contribute to open-source simulation tools and datasets that encourage collaboration and innovation in the robotics community.


(a)

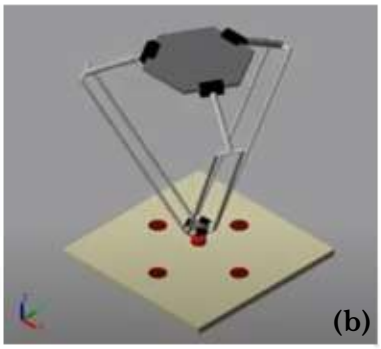
(b)

Figure 1. Robots are built at the Robot Learning Lab, IITH.
(a) Mobile robot,
(b) Delta robot

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[2] Mr Shibajyoti Das
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Topology Optimization and Pneumatic Soft Grippers

KID: 20240407

These days, the use of soft grippers is constantly increasing as they ensure insignificant or no damage to gripping objects [1]. Such grippers are made with material that has Young's modulus in the kilopascal to megapascal range, and they perform their tasks using elastic deformation. They are typically actuated via different means; the most sought-after currently is actuated using pneumatic load [1]. However, because of the lack of a systematic approach, these grippers are designed using manual/ad-hoc methods, which greatly depend on the designer's ability, experience, and expertise. A systematic method, such as topology optimization, to design such grippers will help increase their applications [1].

Topology optimization (TO), a systematic computational technique, provides an efficient way to arrange material layout within a given design domain while optimizing the desired objective with the given constraints. The finite element method is used to solve the associated partial differential equations. Each element is assigned a design variable that varies between 0 and 1. A design variable of 0 and 1 implies the element's void and solid phases, respectively. The optimized design is expected to be made up of design variables with 1. A pneumatic load is a design-dependent load that can change direction, location, and/or magnitude. Thus, dealing with such loads while considering their design-dependent nature is challenging [2, 3] in a TO framework. Kumar et al. [2] proposed a novel method to deal with fluidic design-dependent pneumatic load in a TO setting. The approach uses Darcy's law with a conceptualised drainage term to model the evolving nature of the pneumatic load while considering the discretised system as a porous medium. Herein, we demonstrate the efficacy of this method for designing a pneumatically actuated soft gripper. Various MATLAB codes, such as TOPress [3], SoRoTop [4] and TOPress3D [5] for pedagogy purposes, have been developed using the method presented in [2]. A soft gripper can consist of three to four fingers, depending on the applications and the required grasping action. Each finger contains a set of pressurised chambers that deform to provide the motion necessary for the soft gripper.

Figure 1. Conventional and optimized pressure chambers. The optimized chamber is obtained using the SoRoTop MATLAB code [4].

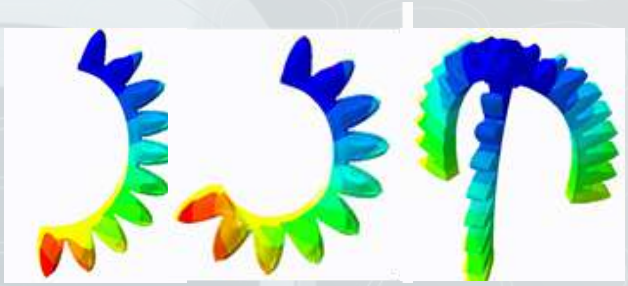

Figure 2. Deformation profiles of the single finger and a soft gripper with three fingers

A conventional soft finger consists of rectangular pressure chambers [1]. To increase performance and automate the design method, a unit pressure chamber of the finger can be optimized, considering it a compliant mechanism actuated by pneumatic load [1]. The optimised chamber is eventually sequentially combined to create a finger for the grippers. We use the SoRoTopMATLAB code [4] to design a soft finger unit (Fig.1). The optimized chamber is different than its conventional counterpart. The optimized design is extracted, extruded, and sequentially combined to create a finger of the soft gripper. The deformation profiles are shown in Fig. 2a-b. A softgripper with three fingers is also depicted in Fig. 2c. Therefore, we believe that TO can be exploited smartly to design different types of soft robots for various applications.

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Revolutionizing Campus Transportation: Deployment of LiDAR Enabled 3D Point Cloud Map - Based Autonomous Campus Shuttles at IIT Hyderabad

KID: 20240408

Autonomous Campus Shuttle (ACS) is a self-driving electric vehicle designed for autonomous transportation within controlled environments like university campuses, research facilities and smart cities.

NMICPS TiHAN foundation at IIT Hyderabad has been at the forefront of autonomous mobility research and innovation.

TIHAN has developed ACS by employing in-house developed drive-by-wire. Over the past two years, TiHAN has successfully deployed ACS within the IIT Hyderabad campus at different routes(as portrayed in Fig. 1) marking a significant step toward smart and sustainable transportation. ACS is equipped with LiDAR, Cameras, GNSS and AI-based perception systems enabling it to navigate predefined routes without human intervention.

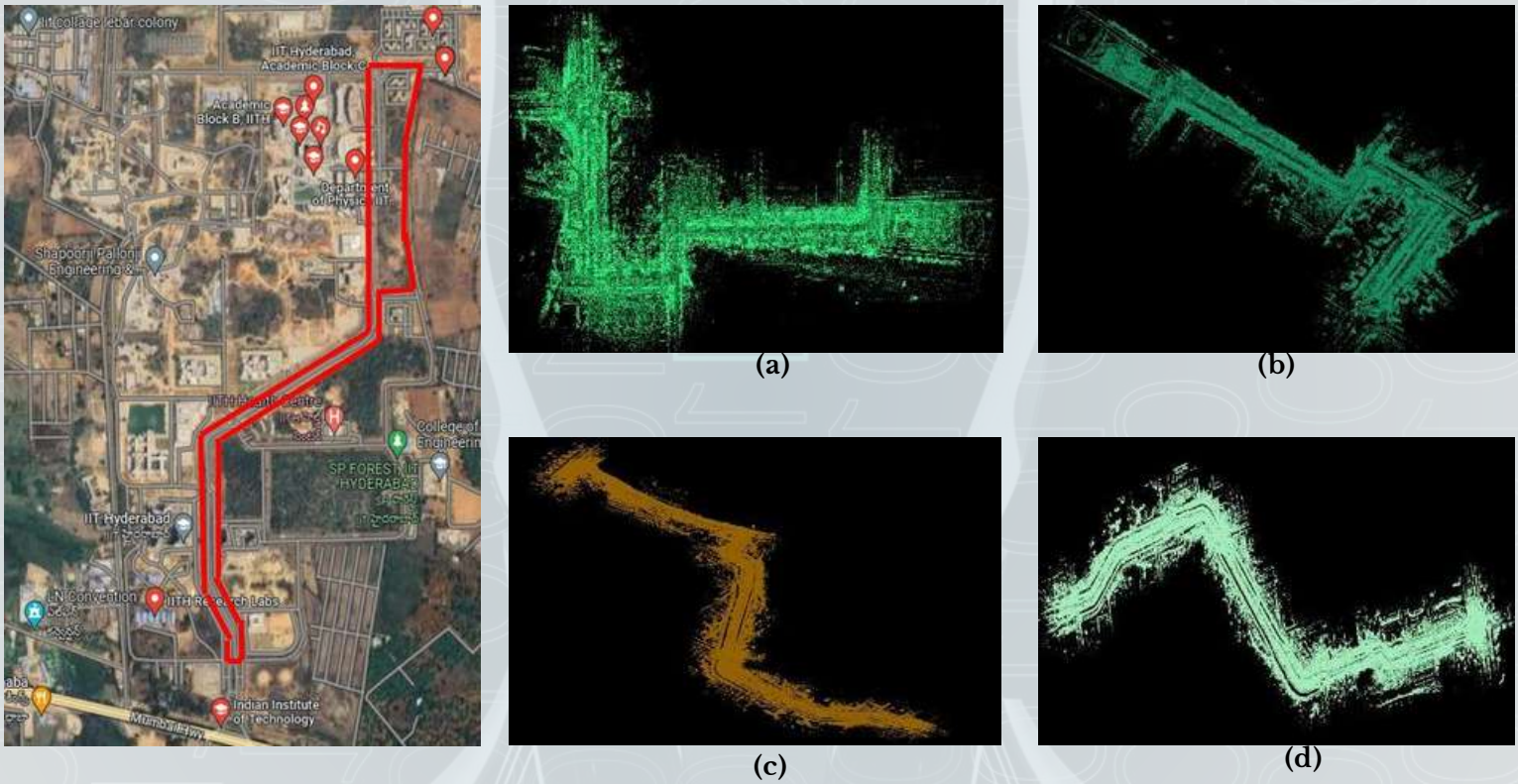

Fig. 1. 3D PointCloud map of different routes within the IIT Hyderabadcampus (a) TiHAN testbed to hostel circle,(b) hostel circle to IITH main gate, (c) IITH main gate to hostel circle and (d) hostel circle to TiHAN testbed.

TiHAN has successfully deployed its in-house developed ACS on various routes (as shown in Fig. 1) at the IIT Hyderabad campus operating seamlessly for the past two years (as illustrated in Fig. 2).

The shuttle has covering 7 km per trip with six daily trips around the IITH campus and served over 1,500 passengers.

Passenger feedback indicated strong confidence in the shuttle's safety with 97.3% of respondents feeling secure during their rides.

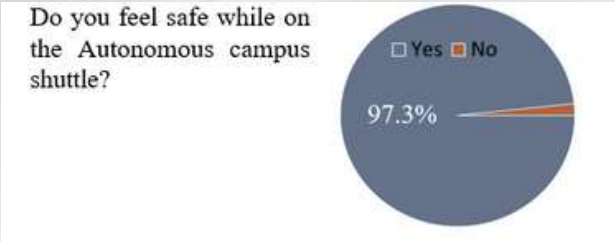

Fig. 2. Autonomous campus shuttle deployed in IIT Hyderabad campus

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INNOVATORS PAVE DIGITAL PATH IN FARM SECTOR

From creating an app that drafts contract farming to using sensors for soil health, over 200 innovators from across the country took part in Smart India Hackathon's finals at IIT Hyderabad. Reports Ashresh Marupaka

APP FOR FERTILISER ADMINISTRATION

Innovators | Go Pandas 24/7 from Acropolis Institute of Technology and Research, Indore

Problem | Unscientific and inappropriate use of fertilisers damaging soil & reducing farm output

Solution | App uses real-time soil data to determine amount & type of fertiliser to use. Farmers can get tailored solutions using NPK (nitrogen, phosphorus and potassium) sensors or have their soil tested in a lab, after which app uses machine learning to determine right fertiliser

APP FOR AI-DRIVEN CROP DISEASE DETECTION

Innovators | E&Co from VIT Chennai

Problem | Delay in identifying crop disease can lead to losses for farmers

Solution | App can detect & determine nature of diseases in real time using images. Integrated with climate data, it can plan crop cycles

Pics: Suman Reddy D

Acropolis Institute of Technology and Research, Indore

WINNERS

1. Void Seekers- Noida Institute of Engineering and Technology, Greater Noida
2. Yeshwantrao Chavan Engineering College, Nagpur
3. Techno Main Salt Lake, Kolkata
4. AGRITECH TITAN- Welingkar Institute of Management, Mumbai

Teams got ₹1L cash prize

FOUR PROBLEMS TO BE SOLVED: Development of mobile app for direct market access for farmers, an AI-driven crop disease prediction, a fertiliser usage optimiser & contract farming system

APP FOR SEAMLESS CONTRACT FARMING

Innovators | Binary Brains_5 from GSFC University, Vadodara

Problem | Legal hassles & lengthy procedures discourage farmers and customers from entering into agricultural agreements

Solution | App helps draft & notarise contracts between farmers & customers. Based on crop type, quantity & delivery time, app drafts contracts & gets them e-signed by both parties. The app can track latest prices at APMC markets, help resolve disputes through chatbot

APP FOR DIRECT MARKET ACCESS

Innovators | Farm-Connect from Mukesh Patel School of Technology Management and Engineering, Shirpur, Maharashtra

Problem | Middlemen exploit farmers by charging commissions for sale of produce to wholesalers & retailers

Solution | App allows farmers to list their produce for direct bidding without middlemen. Farmers can set starting bid for wholesale quantities and sell retail quantities at fixed prices. App facilitates transportation of goods

ఐఐటీలో కోడింగ్ మారథాన్

- 36 గంటల నిరంతర యాప్ డెవలప్‌మెంట్
- పోటీలో పాల్గొన్న 26 రాష్ట్రాల విద్యార్థులు
- రైతుల రోజు వారి సమస్యలపై యాప్
- ఆర్టిఫిషియల్ ఇంటెలిజెన్స్‌తో వ్యవసాయ ఆవిష్కరణపై ఐఐటీహెచ్ దృష్టి

గోల్కొండ టైమ్స్, సంగారెడ్డి

ఐఐటీ హైదరాబాద్ లో కోడింగ్ మారథాన్ నిర్వహించారు. దేశంలోని 26 రాష్ట్రాల విద్యార్థులు పాల్గొనే పోటీలో రైతులు రోజువారీగా ఎదుర్కొనే సమస్యలను పరిష్కరించేందుకు యాప్‌లను డెవలప్ చేశారు. 36 గంటల పాటు నిరంతరాయంగా కొనసాగిన ఈ సాఫ్ట్‌వేర్ డెవలప్ కోడింగ్ మారథాన్ పోటీలో రైతులకు ఉపయోగపడేలా సులభతరంగా అర్థం అయ్యేలా యాప్స్ తయారీపై విద్యార్థులు పోటీ పడ్డారు. వ్యవసాయ రంగానికి ఆర్టిఫిషియల్ ఇంటలిజెన్స్‌ని టెక్నాలజీని అనుసంధానం చేసేల పోటీల నిర్వహణ జరిగింది. ఇండియన్ ఇన్‌స్టిట్యూట్ ఆఫ్ టెక్నాలజీ-హైదరాబాద్ (ఐఐటీ-హెచ్) వ్యవసాయ ఆవిష్కరణలపై ప్రత్యేక దృష్టి సారించి స్మార్ట్ ఇండియా హ్యాకథాన్ (ఎస్ఐహెచ్)ను క్యాంపస్‌లో నిర్వహిస్తున్నారు. రైతులు దళారి వ్యవస్థ లేకుండా పంట అమ్ముకునేందుకు యాప్ తయారీ చేయడం.. పంటలకు చీడపీడలను పసిగట్టే వంటి యాప్ రూపొందించడంతో ఉద్దేశించిన మారథాన్ ఐఐటీ కందిలో ఉత్సాహంగా కొనసాగింది. ఈ మారథాన్ అధిక దిగుబడి సేంద్రియ ఎరువుల వివరాలతో యాప్.. కాంట్రాక్ట్ ఫార్మింగ్ సిస్టమ్ ఫర్ స్టేబుల్ మార్కెట్ అనే నాలుగు అంశాలలో విద్యార్థి బృందాలు యాప్‌లు తయారు చేశారు. వీరిలో రైతులకు సులభంగా వాడుకునేలా, ఉపయోగపడేలా ఉన్న యాప్‌లలో నాలుగు టీమ్‌లకు సంబంధించిన వారిని ఎంపిక చేసి లక్ష రూపాయల చొప్పున నాలుగు టీమ్‌లకు ఐఐటీ అధ్యాపకులు బహుమతులు అందజేశారు.

Japan's Hamamatsu city signs MoU to strengthen ties with IIT Hyderabad

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UNITING FOR INNOVATION

Strategic MoUs | IIT Hyderabad partners with Hamamatsu City and Suzuki's Next Bharat Ventures to foster a vibrant start-up ecosystem

Focus on exchange | Plans to increase student internships in Japan and bring Japanese expertise to India

Innovation for impact | Collaboration aims to drive solutions for rural challenges and expand Suzuki's innovation footprint in India

Hyderabad: Delegating a special officer to foster Indo-Japanese collaboration, Japan's Hamamatsu city — home to companies such as Suzuki, Yamaha, and Honda — signed an MoU with IIT Hyderabad on Thursday. The agreement included a parallel MoU between Suzuki's Next Bharat Ventures and IIT Hyderabad, aimed at creating a vibrant start-up ecosystem promoting innovation.

"This is the first time we are signing an MoU with a city," said IIT Hyderabad director BS Murty. "Hamamatsu is like the Detroit of Japan. We want students to intern more and go to Japan, and we want to see if employees can come here to IITH," he said. Reminiscing about his time visiting Hamamatsu, he added, "I saw dozens of my own students when I visited Suzuki, and I want the number to go up to 100 students each year!"

The collaboration builds upon IIT Hyderabad's existing relationship with Suzuki, which includes the Suzuki Innovation Center and a successful student internship program. Yusuke Nakano, mayor of Hamamatsu City, emphasised the strategic importance of this partnership: "India is at the centre of global attention for its economic growth as well as innovation. Through this initiative, we want to bring effective solutions and support start-ups." Nakano also emphasised that these innovations must be taken to rural India, where the need for solutions to dire problems is the highest.

A unique aspect of this collaboration is the deployment of a special officer from Hamamatsu City to work with Next Bharat Ventures. "Hamamatsu is successful for one reason — 'Yaranaika,' which means 'let's do it, or we'll figure it out'," explained Next Bharat Ventures CEO Vipul Jindal. "We'll take the best start-ups of India to Hamamatsu and are planning to call big farmers and agri companies to come to Hyderabad."

The partnership marks a new chapter in Suzuki's four-decade-long journey in India. Kinji Saito, councillor of global marketing at Suzuki Motor Corporation, reflected on this evolution: "In all these years, we were so busy making cars and selling to people. Today we are a member of IITH's consortium, and it has led to our participation in R&D through the Suzuki Innovation Center. Next Bharat Ventures is the future, and the second start of Suzuki's era."

IITH WELCOMES ALUMNI ON FIFTH ANNIVERSARY

DC CORRESPONDENT
HYDERABAD, DEC. 15

The Indian Institute of Technology Hyderabad (IITH) hosted its 5th annual alumni day over the weekend, welcoming over 400 former students from India and abroad. Held in a hybrid format, the event featured both in-person and online participation.

Prof. Mahendra Kumar Madhavan, dean of alumni and corporate relations, opened the ceremony. A key highlight was the inauguration of the KRC Recording Studio by IIT-H director Prof. B.S. Murty, aimed at fostering multimedia innovation on campus. The event honoured Dr Manohar Kakunuri and Dr S. Sivaganesh with excellence in academics and technology development awards. M. Rohit Dhondge, a UPSC ESE topper, was also felicitated.

Alumni toured the original campus at the ordnance factory, reflecting on IITH's growth from humble beginnings to a leading innovation centre. The day concluded with decennial celebrations for the Batch of 2014, where Professor Murty emphasised, "We stand on the shoulders of our alumni."

METRO INDIA

Over 1500 participants compete at 'IITH Half Marathon 2024'

METRO INDIA NEWS | HYDERABAD

The marathon brought together participants from across the nation, united by a commitment to promoting health and wellness.

Over 1500 participants competed in three race categories, Half Marathon (21.1 km), 10km Run and a 5km Fun Run at 'IITH Half Marathon 2024' organized by IIT Hyderabad (IITH) Runners Club at IITH campus in Hyderabad.

The marathon brought together participants from across the nation, united by a commitment to promoting health and wellness. The event served as a vibrant platform for competitive racing, welcoming the institute's students, alumni, faculty, staff, and passionate runners from all over the country.

Poorna Malavath, the youngest female to summit Mount Everest, graced the event as the Chief Guest. Her awe-inspiring journey of courage and determination left the audience captivated as she shared a powerful message of endurance and resilience, embodying the spirit of the marathon itself.

Malavath remarked, "The IITH Half Marathon reflects the spirit of endurance and resilience, values that resonate deeply with me as a mountaineer."

Rupesh, Superintendent of Police, Sangareddy, joined as the guest of honour, emphasized the importance of fitness and discipline, applauding IITH for creating a platform that fosters health and wellness alongside academic excellence.

The picturesque route of the marathon showcased IITH's state-of-the-art infrastructure alongside its lush greenery, offering participants a unique and memorable racing experience.

02/12/2024 | Main Edition | Page : 4
Source : https://epaper.metroindia.net/

ఆంధ్రప్రభ

దేశాభివృద్ధిలో ఐఐటీ హైదరాబాద్‌ది కీలక పాత్ర

వికసిత్ భారత్-2047 వైపుగా అడుగులు - కేంద్ర మంత్రి డాక్టర్ సుకాంత మజుందార్ - కల్పనా చావ్లా హాస్టల్ బ్లాక్‌ను ప్రారంభం

సంగారెడ్డి, నవంబర్ 14 (ఆంధ్రప్రభ): సంగారెడ్డి జిల్లా ఐఐటీ హైదరాబాద్‌లో భారత ప్రభుత్వ విద్యా, ఈశాన్య ప్రాంత అభివృద్ధి శాఖ సహాయ మంత్రి డాక్టర్ సుకాంత మజుందార్ ఐఐటీ హైదరాబాద్ క్యాంపస్‌లో సమీక్షా సమావేశానికి హాజరయ్యారు. ఈ కార్యక్రమానికి మెదక్ ఎంపీ ఎం.రఘునందన్ రావు అతిథిగా విచ్చేశారు. మంత్రి పర్యటనలో ఐఐటీ హైదరాబాద్‌లో జరుగుతున్న అభివృద్ధి, ప్రారంభోత్సవాలు, విద్యా, ప్రణాళికా రంగాలపై చర్చలు జరిగాయి, ఈ సంస్థ విద్యా, స్థిరత్వ అభివృద్ధి పట్ల అంకితభావాన్ని చాటిచెప్పాయన్నారు. ఆయన వివిధ విభాగాలను సందర్శించి, అధ్యాపకులు, విద్యార్థులతో చర్చించి వివిధ రంగాలలోని విద్యా, పరిశోధన కార్యక్రమాల గూర్చి అడిగి తెలుసుకున్నారు. ఆధునిక సాంకేతిక వనరుల కేంద్రంగా ఉన్న నాలెడ్జ్ రిసోర్స్ సెంటర్ (లైబ్రరీ)ను కూడా సందర్శించి పరిశోధన విద్యా రంగాలకు అందించే సహకారాన్ని వారు వివరించారు. ఆ తర్వాత రీసెర్చ్ సెంటర్ కాంప్లెక్స్‌లోని సాతి (సోఫిస్టికేటెడ్ అనలిటికల్ అండ్ టెక్నికల్ హెల్ప్ ఇనిస్టిట్యూట్) సెంటర్‌ను పరిశీలించారు. ఈ పర్యటన తిహాన్ (టెక్నాలజీ ఇన్నోవేషన్ హబ్ ఆన్ ఆటోనమస్ నావిగేషన్) కేంద్రానికి కొనసాగింది. ఇది భూమి, వైమానిక వాహన పరీక్షలకు భారత్‌లోని మొదటి ఆటోనమస్ నావిగేషన్ కేంద్రంగా ఉంది. ఇక్కడ జరుగుతున్న పరిశోధన, ఆటోనమస్ వాహనాలు, కొత్త డ్రోనూ భావనను పరిశీలించి అభివృద్ధిలో ఉన్న ఆధునిక సాంకేతికతలను గురించి తెలుసుకున్నారు. పర్యటనలో భాగంగా, డాక్టర్ మజుందార్ కల్పనా చావ్లా హాస్టల్ బ్లాక్‌ను ప్రారంభించారు, ఇది విద్యార్థుల జీవన అనుభవాన్ని మెరుగుపరిచేందుకు నిర్మించిన కొత్త వసతి సౌకర్యం, డాక్టర్ మజుందార్, ఎక్ పెడ్ మా కే నామ్ కార్యక్రమంలో మొక్కల వితరణలో పాల్గొన్నారు. ఇది పర్యావరణ స్పృతిని ప్రోత్సహించే కార్యక్రమంగా ఉన్నదనీ అన్నారు. ఐఐటీ హైదరాబాద్ డైరెక్టర్ ప్రొఫెసర్ బి.ఎస్. మూర్తి స్వాగత ఉపన్యాసంలో డాక్టర్ సుకాంత మజుందార్ యొక్క విజయాలు, వికసిత భారత్ లక్ష్యాలపై భారత ప్రభుత్వ కృషిని ప్రస్తావించారు. మెదక్ ఎంపీ రఘునందన్ రావు, ఐఐటీ హైదరాబాద్ యొక్క ప్రగతిని ప్రశంసిస్తూ, ఐఐటీ హైదరాబాద్ వసతులతో పాటుగా మేధోశక్తి, ఆరోగ్యాన్ని అందించగలదు. ప్రధాని నరేంద్ర మోడీ దృష్టిలో, ఐఐటీ హైదరాబాద్ వికసిత భారత్ 2047కి కీలకంగా ఉంటుంది, అని అన్నారు. మంత్రి డాక్టర్ సుకాంత మజుందార్ ఐఐటీ హైదరాబాద్ యొక్క కృషిని, భారత విద్యా మరియు పరిశోధన రంగాల్లో చేసిన కృషిని ప్రశంసిస్తూ, ఐఐటీ హైదరాబాద్ యొక్క ప్రయాణం, విద్యా, పరిశోధనలో అంకితభావంతో ముందుకు సాగుతూ, దేశంలో ప్రఖ్యాత విద్యా సంస్థగా నిలిచింది. సమగ్ర విద్యా, పరిశోధన దృష్టితో, ఇది భారతదేశంలో వినూత్నతకు రారాజుగా నిలుస్తోంది. గురువారం మొక్కలు నాటుతూ, మనం తల్లి యొక్క ప్రేమను స్మరించుకుంటూ, మనం అభివృద్ధి, సాంకేతికత పట్ల మన అంకితభావాన్ని గుర్తుచేసుకుంటున్నామని అన్నారు.

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The Siasat Daily Hyderabad

15-11-2024

آئی آئی ٹی حیدرآباد معیاری ادارہ، ملک کی تعمیر وترقی میں مددگار

کندی نزد سنگاریڈی میں ادارہ کی تعلیمی و تحقیقی سرگرمیوں کا مشاہدہ، مرکزی وزیر مملکت ڈاکٹر مجمدار کا خطاب

ABN ఆంధ్రజ్యోతి

డిసెంబరు 1న మారథాన్

● ఐఐటీహెచ్ దరఖాస్తుల ఆహ్వానం

కంది, అక్టోబరు 4 : ఆరోగ్యకరమైన జీవనశైలిని ప్రోత్సాహించడానికి సంగారెడ్డి జిల్లా కంది పరిధిలోని ఇండియన్ ఇనిస్టిట్యూట్ ఆఫ్ టెక్నాలజీ హైదరాబాద్‌లో డిసెంబరు 1న రన్నర్స్ హాఫ్ మారథాన్ 1వ ఎడిషన్‌ను నిర్వహించనున్నట్లు శుక్రవారం ఐఐటీహెచ్ అధికారులు ప్రకటన విడుదల చేశారు. దేశంలోని వివిధ రాష్ట్రాలు, నగరాల నుంచి ఫిట్‌నెస్ ఔత్సాహికులు, రన్నర్ల నుంచి దరఖాస్తుల ఆహ్వానిస్తున్నట్లు పేర్కొన్నారు. ఈ రన్నర్స్ హాఫ్ మారథాన్‌లో పాల్గొనాలనుకునే వారు అక్టోబరు 31 వరకు ఐఐటీహెచ్ వెబ్‌సైట్‌లో ఆన్‌లైన్ ద్వారా రిజిస్ట్రేషన్లు నమోదు చేసుకోవాలని ఐఐటీహెచ్ అధికారులు సూచించారు. 600 ఎకరాల సువిశాలమైన ఐఐటీహెచ్ ప్రాంగణంలో డిసెంబరు 1న ఆదివారం ఉదయం 5 గంటలకు ఈ మారథాన్ ప్రారంభమవుతుంది. 5కే రన్, 10కే రన్, 21కే మారథాన్‌లతో పాటు ఫన్‌రన్ ఈవెంట్‌లు ఉంటాయి. విజేతలకు ప్రశంసా పత్రాలతో పాటు, పతకాలు, బహుమతులు ఉంటాయి. ఈ రన్నర్స్ హాఫ్ మారథాన్ అకాడమిక్ ఎక్సలెన్స్‌తో పాటు శారీరక ఆరోగ్యాన్ని మెరుగుపరుస్తుందని ఐఐటీహెచ్ డైరెక్టర్ బీఎస్ మూర్తి ఆకాంక్షించారు.

ABN ఆంధ్రజ్యోతి

ఐఐటీహెచ్‌లో ఆవిష్కరణల సందడి

వినూత్న ప్రాజెక్టులు ప్రదర్శించిన ప్రముఖ విద్యాసంస్థల విద్యార్థులు

ABN ఆంధ్రజ్యోతి

సైంటిస్ట్- ఐఐటీ-హెచ్‌లో నిర్వహించిన అంతర్జాతీయ సదస్సులో శాస్త్రవేత్తలు

ఐఐటీ-హెచ్‌లో అంతర్జాతీయ సదస్సు

ఆరోగ్యంపై జీవనప్రక్రియల ప్రభావం మీద చర్చలు

కంది, డిసెంబరు 10 (ఆంధ్రజ్యోతి): ఆరోగ్యంపై జీవన ప్రక్రియల ప్రభావం ఎలా ఉంటుందనే అంశంపై సంగారెడ్డి జిల్లా కంది పరిధిలోని ఇండియన్ ఇన్‌స్టిట్యూట్ ఆఫ్ టెక్నాలజీ (ఐఐటీ-హెచ్)లో అంతర్జాతీయ సదస్సు జరిగింది. ఇండియన్ సొసైటీ ఫర్ క్రోనో బయాలజీ, కేంద్ర ప్రభుత్వ శాస్త్ర సాంకేతిక శాఖ సంయుక్తంగా దీనిని నిర్వహించాయి. 'కార్బిడియన్ రిథమ్స్ ఇన్ హెల్త్ అండ్ డిసీజెస్: ఫ్రమ్ డిస్కవరీ టు పంక్షన్' (సీఆర్‌హెచ్‌డీ 2024) పేరిట ఈ నెల 5-7 తేదీల్లో మూడు రోజులపాటు జరిగింది. దీనికి సంబంధించిన వివరాలతో ఐఐటీహెచ్ మంగళవారం పత్రికా ప్రకటన విడుదల చేసింది. ఆస్ట్రేలియా, డెన్మార్క్, ఐర్లాండ్, అమెరికా, బ్రిటన్, జపాన్, సింగపూర్, జర్మనీ, యూఏఈ, ఇజ్రాయెల్‌తో మన దేశంలోని పలు రాష్ట్రాలకు చెందిన శాస్త్రవేత్తలు ఈ సదస్సులో పాల్గొన్నారు. సీసీఎంబీ మాజీ డైరెక్టర్, తెలంగాణ అకాడమీ ఆఫ్ సైన్సెస్ అధ్యక్షుడు ప్రొఫెసర్ సీహెచ్ మోహన్‌రావు సదస్సును ప్రారంభించి ముఖ్య అతిథిగా పాల్గొన్నారు. కాగా, సదస్సులో భాగంగా ఇండియన్ సొసైటీ ఫర్ క్రోనో బయాలజీ అధ్యక్షుడు ప్రొఫెసర్ వినోద్ కుమార్‌కు జీవితకాల సాఫల్య పురస్కారాన్ని అందించారు. ఈ సదస్సు భారతీయ క్రోనోబయాలజీ రంగం ప్రస్థానంలో ఒక మైలురాయి వంటిదని సదస్సు కన్వీనర్ సాందీపని రాయ్ పేర్కొన్నారు.

ఆంధ్రప్రభ

ఘనంగా స్మార్ట్ ఇండియా హ్యాకథాన్ 2024 గ్రాండ్ ఫినాలే

స్మార్ట్ ఇండియా హ్యాకథాన్ 2024 గ్రాండ్ ఫినాలే విజేతలు దృశ్యాలు

ABN ఆంధ్రజ్యోతి

ఐఐటీహెచ్‌లో నికాన్ సెంటర్ ఆఫ్ ఎక్స్‌లెన్స్

● అత్యున్నత స్థాయి పరిశోధనలే లక్ష్యం

ఒప్పంద పత్రాలను మార్పిడి చేసుకుంటున్న నికాన్ ప్రతినిధులు, ఐఐటీహెచ్ డైరెక్టర్ బీవీఎస్ మూర్తి

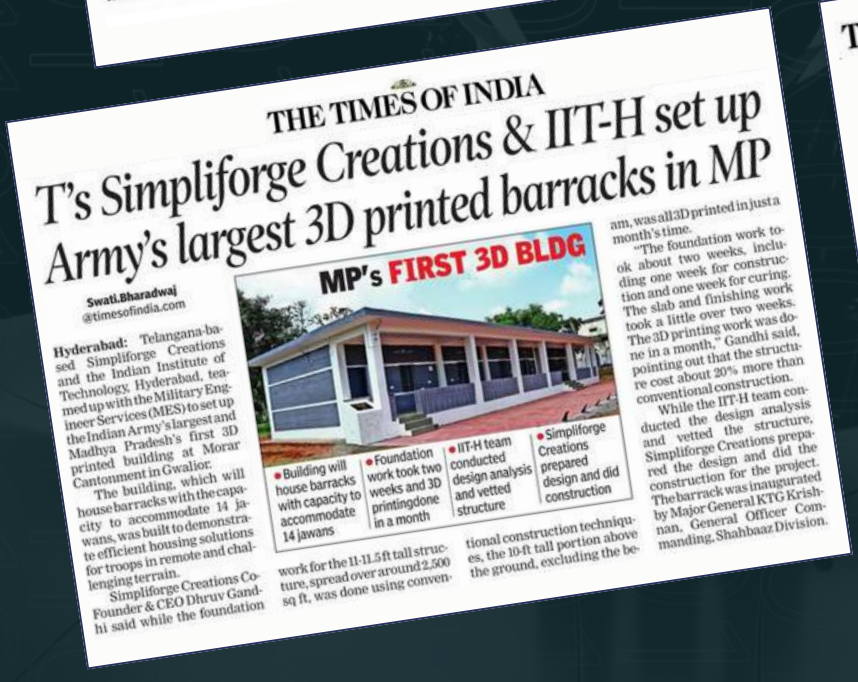
THE HINDU

National Wellbeing Conclave at IIT-H

The Hindu Bureau
HYDERABAD

The Ministry of Education with IIT Hyderabad (IIT-H) will host the National Wellbeing Conclave, an integrated approach to promote positive mental health, resilience and wellbeing in higher education institutions, on IITH premises on Saturday.

Nearly 100 Centrally-funded institutions from across the country will take part in the event, which is aimed at building a mental health and wellbeing ecosystem for students and faculty members. Officials said the conclave will be a platform to exchange ideas related to promotion of mental health, resilience and wellbeing on campuses, and initiatives undertaken by different higher education institutions in the area.



THE TIMES OF INDIA

T's Simpliforge Creations & IIT-H set up Army's largest 3D printed barracks in MP

Swati.Bharadwaj
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Hyderabad: Telangana-based Simpliforge Creations and the Indian Institute of Technology, Hyderabad, teamed up with the Military Engineer Services (MES) to set up the Indian Army's largest and Madhya Pradesh's first 3D printed building at Morar Cantonment in Gwalior.

The building, which will house barracks with the capacity to accommodate 14 jawans, was built to demonstrate efficient housing solutions for troops in remote and challenging terrain.

Simpliforge Creations Co-Founder & CEO Dhruv Gandhi said while the foundation work for the 11-11.5 ft tall structure, spread over around 2,500 sq ft, was done using conventional construction techniques, the 10-ft tall portion above the ground, excluding the beam, was all 3D printed in just a month's time.

"The foundation work took about two weeks, including one week for construction and one week for curing. The slab and finishing work took a little over two weeks. The 3D printing work was done in a month," Gandhi said, pointing out that the structure cost about 20% more than conventional construction.

While the IIT-H team conducted the design analysis and vetted the structure, Simpliforge Creations prepared the design and did the construction for the project. The barrack was inaugurated by Major General KTG Krishnan, General Officer Commanding, Shahbaaz Division.

THE TIMES OF INDIA

India-Kenya Innovation Nexus sealed

Hyderabad: In a move to boost cross-border startup growth, knowledge exchange, and capacity-building initiatives between India and Kenya, the Partnership Charter of the India-Kenya Innovation Nexus was signed at IIT Hyderabad.

The signing took place during the visit of a high-profile delegation from Kenya, led by the Kenya National Innovation Agency (KeNIA), alongside senior representatives from 11 Kenyan universities. Their two-day visit to the iTIC Incubator at IITH aimed to foster collaboration between the two countries' innovation ecosystems and forge long-term ties through the Innovation Nexus. The delegation included Edith Vethi Nyenze (MP, Kitui West Constituency) and Amina Dika Abdullahi (MP, Tana River Constituency), among others.

"The Innovation Nexus reflects our shared commitment to advancing technology and entrepreneurship," said B S Murty, Director, IITH. TNS

METRO INDIA

IIT Hyderabad inaugurates ASM Hyderabad Chapter

METRO INDIA NEWS | HYDERABAD

The Indian Institute of Technology Hyderabad (IITH) in collaboration with the American Society for Metals (ASM) celebrated the inauguration of American Society for Metals (ASM) Hyderabad Chapter (Professional) and the Materials Advantage (MA) Hyderabad Chapter (Student) on Wednesday.

The inaugural event witnessed an impressive registration of 140 members and active participation from IITH faculty, students and representatives of esteemed institutions. These included the University of Hyderabad, BVRIT, MGIT and Vishnu University as well as prominent government organizations like ARCI, MIDHANI, and DMRL and industries such as Innomet Advanced Materials and Saideepa Rock Drills Private Limited, the event was meticulously organized by Dr Mayur Vaidya and Dr Ashok Kamaraj, Assistant Professors, Department of Materials Science & Metallurgical Engineering (MSME), IITH.

The event marked a significant step in fostering collaboration and innovation within the materials science community. This initiative represents a significant step toward nurturing talent and advancing research in the field of materials science. Chief Guest Dr Navin Manjooran, President of ASM International, expressed his delight at the inauguration, stating that "Great things are achieved when we come together with purpose and passion." He said "Congratulations on the inauguration of the new Professional Chapter and Student Chapter in Hyderabad today! With 75 professional members and 65 student members joining the ASM family, this marks a significant milestone in strengthening our presence in the region.

Prof. B S Murty, Director of IIT Hyderabad, emphasized the value of being associated with the ASM during the inauguration of the ASM Hyderabad Chapter. He remarked: "Connecting with professional associations is essential to amplify the power of collaboration. Collaboration is the key to success, driving growth and creating synergy. At IITH, nearly 50% of our projects are the result of collaborative efforts. Recognizing the immense benefits for members in this region, we established the ASM Hyderabad Chapter within just five days of deciding to start it.

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Source : https://epaper.metroindia.net/

Meet on mental health in education institutions begins

The Hindu Bureau
HYDERABAD

Participants at First National Well-being Conclave at IIT-H in Sangareddy district on Saturday MOHD ARIF

Making students and faculty members as ambassadors of happiness and strength and prioritising mental health and resilience in higher education institutions (HEIs) in the country as a mission, the first National Wellbeing Conclave (NWC) kicked off at IIT-Hyderabad, here on Saturday.

Student well-being

Being held under the aegis of the Ministry of Education (MoE), the conclave aims at fostering healthy and harmonious environment in HEIs with the goal of reducing suicide rates and enhancing student and faculty wellbeing. The two-day conclave features discussions about best practices on wellbeing in campuses with participation of nearly 100 centrally-funded institutions. The NWC also aligns with the Economic Survey 2023-24 which highlights the need for mental health programmes within educational institutions.

According to Secretary (MoE) K. Sanjay Murthy, who also released a compendium of 'best practices on wellbeing', NWC is for promoting awareness and collaboration among institutions across the country. The essential foundation, through deliberations on mental health and resilience initiatives, is for spreading effective practices across the country and for future initiatives.

IIT-H initiatives

He appreciated initiatives such as IITH's 'Team Sunshine, the counselling cell and Expressions India, the National Life Skills, School & Community Mental Health & Wellbeing Program. According to Director (IITH) B.S. Murty, the Insititute promotes the right brain activities to maintain a balanced mind.

"We live in a fast-paced world filled with constant stimuli that significantly impact us emotionally, physically and psychologically, often leading to stress. This makes promoting mental health, resilience, and overall wellbeing more essential than ever. Students need to learn that failure is a natural part of growth," he said.

Joint Secretary, Department of Higher Education, Rina Sonowal Kouli, Program Director (Expressions India) Jitendra Nagpal, psychiatry experts and counsellors, faculty members and students from various participating institutions were present.

IIT Hyderabad has been honored with the ENR Global Best Projects Awards 2024! Presented by Engineering News-Record (ENR), New York, USA

IITH has successfully conducted the Plantation Drive

Plantation Drive for the month of October 2024

Plantation Drive for the month of November 2024

Plantation Drive for the month of December 2024

Sports Spirit

29th Inter IIT Staff Sports meet 2024

38th Inter IIT Aquatics Meet 2024.

57th Inter IIT Meet

IIT T20 Cricket Fiesta Runners 2024

Celebrations

IITH's EBSB illuminated the Diwali Celebrations with mesmerizing blend of traditional customs and modern festivities, making lamps, decorations, vibrant dance, music, and memories for life!

The Department of Biotechnology celebrated the BIO-Vriddhi 2024: Biotechnology Foundation day

The Department of Biomedical Engineering celebrated BMilaap 4.0, marking BME Department Day

The Department of Mathematics celebrated the National Mathematics Day

Tolu Bommalata by Spicmacay at IIT Hyderabad was a Mesmerizing Blend of Art and Culture

IIT Hyderabad Hosted 5th Annual Alumni Day 2024: Celebrating Legacy, Achievements, and Community Bond

Prof Kiran Kuchi, Department of Electrical Engineering, IIT Hyderabad had a privilege to meet the Hon'ble PM Shri Narendra Modi Ji & MOC to brief them on "5G & 6G research, commercialization being carried out at IITH, and it's incubated company WiSig Networks" at Pragathi Maidan, New Delhi

The Second Edition of Japan Month was a great opportunity for Strengthening Educational Ties and Collaborative Opportunities between IITH & Japan

IITH 2nd Annual Corporate Get-Together, was a wonderful occasion to celebrate our partnership and explore opportunities for deeper collaboration

Inauguration of cutting-edge AR/VR lab facilitated by InfoVision

The First National Wellbeing Conclave held at IITH, a Collaborative Effort by the Ministry of Education, Government of India

Inauguration of ASM, Hyderabad Chapter(Professional) and the Materials Advantage(MA) Hyderabad Chapter

Jan Jatiya Gaurav Diwas on campus with multiple events and Celebrations

Vigilance Awareness Week

The Integrity Pledge was administered by the Registrar and the IITH fraternity on the occasion of the Vigilance Awareness Week

Vigilance Awareness Week was concluded with a prize distribution ceremony for the winners of various vigilance-themed competitions

IITH has organized a walkathon as part of the Vigilance Awareness Week initiatives

School Visits

IITH has extended an Exposure visit to VIIT School, Guntur

RDC and Prayas, IITH hosted the Inspiring Young Minds, an Exposure Visit for Zilla Parishad Students

IITH extended an Exposure visit to RNLE School Students

Samvidhan Diwas celebrations on 26th November 2024, commemorating 75 years of the adoption of the Indian Constitution

An Induction Training Program for the newly joined staff by various sections of the IITH, organized by the Registrar, IITH

Institute Hospital in collaboration with Star Hospitals arranged a Basic Emergency First Aid skill Training (B.E.F.A.S.T)

iTIC, IIITH in collaboration with VCCircle, hosted "The Pitch" - a platform for startup founders to showcase their business ideas to leading investors across the country

IIT Hyderabad Runners Club hosted the IITH Half Marathon 2024, featuring multiple race categories: Half Marathon (21.1 km), 10K Run, 5K Fun Run

IIT T20 Cricket Fiesta Runners 2024 (Organized by IIT Tirupati)

Captain Receiving the Trophy

Player of the series

Best Batter (Orange Cap)

Player of the match with IIT Tirupati

The 30th PAMFP Conference was inaugurated at IIT Hyderabad by Dr Sanjay Kumar Jha, CMD MIDHANI

International Conference on Circadian Rhythms in Health and Diseases: From Discovery to Function (CRHD 2024)

Harnessing AI for Healthcare Transformation HAHT-IUS 2024, A Collaborative Indo-US Workshop at IITH

IITH Conducted Workshop on Movement Simulation through Neuro-Musculoskeletal System Modelling

Sessions on "Advanced Functional Analysis and its Application 2024" Organized by Department of Mathematics, IITH

IITH is honored to have been a part of the Teacher Training Programme for Jawahar Navodaya teachers, organized by the CCE & Rural Development Centre

The Dept of Liberal Arts, IITH, in collaboration with the SPARC Scheme, GoI, conducted a two-day symposium

Depa

Department of Mathematics, IITH hosted the "Annual Foundational School -1" Sessions

IIT Hyderabad & Nikon India Launched the India's First Nikon Centre of Excellence at Indian Institute of Technology Hyderabad

Kenyan Delegation Visited iTIC Incubator at IIITH to Strengthen Innovation and Entrepreneurship Ties through India-Kenya Innovation Nexus

IITH and JICA united to nourish Design Innovation JICA Chair Lecture Series.
Read More: https://pr.iith.ac.in/pressrelease/JCL.pdf

Mr Rohit Dhondge
Alumnus

Secured AIR-1 in UPSC ESE 2024 from civil engineering branch

Dr Amarteja Kocherla
PhD Scholar, Department of Civil Engineering

Received Marie Skłodowska-Curie Individual Fellowship Award to carry out research at the Federal Institute for Materials Research & Testing BAM in Germany

Mr Vinod V
PhD Scholar, Department of Mechanical & Aerospace Engineering

Received the Best Presentation Award in 8th National Symposium on Shock Waves at IIT Kanpur

Ms Cherishma Mallavarapu
MTech student, Dept of Mechanical & Aerospace Eng

Received the Best Presentation Award in 8th National Symposium on Shock Waves at IIT Kanpur

Mr Bhanu Ganesh Ganta
PhD Scholar, Department of Electrical Engineering

Received the Silver Award for the Best Student Paper.

Mr Vamadev Sundar Chebiyyam
BTech student, Department of Biotechnology

Received the 2nd prize in Kalasagaram Annual Carnatic Music Competition in Seniors Category in Mridangam

Dr Sandipan Ray
Assistant Professor, Department of Biotechnology

Elected as the Vice President of the Indian Society for Chronobiology (InSC)

Dr Nitin Kumar
Alumnus - MTech student Department of Civil Engineering

Selected as an Assistant Professor at IIT Patna

Mr Krishna Chaitanya N
PhD Scholar, Department of MSME

Received the Best Poster Award during NMD-ATM 2024 program held at GKVK, Bengaluru on Nov 20-22nd,2024, in the theme of "StructureProperty Correlation"

Ms Bhavya Surendran VS
PhD Scholar, Department of Biotechnology

Received the Best Poster Presentation Award in the Thematic Area of Microbial &Industrial Biotechnology at the International Conference on Advances in Biotechnology and Bioinformatics (ICABB 2024)

Ms Kavita
PhD Scholar, Department of Biotechnology

Received the Best Poster Award accompanied by Rs. 50,000 cash at the Cancer NEXT 2024 conference, organized by the Federation of Asia Biotech Association (FABA) & Nizam Institute of Medical Sciences

Mr Nitesh Kumar Podh
PhD Scholar, Department of Biotechnology

Received the Best Poster Award (and registration fee waiver) at the International Chromosome Stability meeting organized at JNCASR

Mr Ranjan Kumar Sahu
PhD Scholar, Department of Physics

Received the Best Poster Award during 68th DAE-Solid State Physics Symposium held atBARC, Mumbai on 18th to 22nd Dec 2024

Team "Drive Sense AI" IIT Hyderaad

Was selected as the First Runner-Up in the Safe Roads, Safe Lives INDIA IDEATHON held during the SAFE ROADS INDIA SUMMIT 2024 conducted by Mercedes-Benz Research and Development India (MBRDI)

IIT Hyderabad Team AeroSentinels

Received the Best Innovation Award at the Smart India Hackathon 2024

Campus Corner
Bank of Knowledge (BoK - Academic)

Dr Gande Vamsi Vikram

Assistant Professor
Department of Chemical Engineering

Dr Gande Vamsi Vikram completed his Bachelor's degree in Chemical Engineering from the University College of Technology, Osmania University, in 2016. He then went on to earn his Master's and PhD from the Indian Institute of Technology Madras, finishing his PhD in 2022. His research during his PhD focused on e-waste recycling, and his work led to the creation of a pilot plant at BHEL Trichy. In recognition of his contributions, he received the Lovaraj Kumar Memorial Trust Best PhD Thesis Award in 2022. After his PhD, Dr. Vamsi worked as a Postdoctoral Researcher and Instructor at the University of Illinois Chicago, USA, until November 2024. His research interests include hydrometallurgy, mineral recovery, flow chemistry, and sustainable process development.

My Life at IITH:
I joined the Department of Chemical Engineering as an Assistant Professor in November 2024 and was warmly welcomed by both the faculty and staff, which has been incredibly encouraging. The collaborative and supportive environment here has been inspiring, and I am enthusiastic and excited to be part of this dynamic, young institute as a young faculty member. Within just a few months of joining, I had the opportunity to assist in organizing the Australia-India Critical Mineral Research Hub (AICMRH) symposium, hosted by IIT Hyderabad. I was also invited to give a talk at the event, which allowed me to establish valuable connections with researchers from various academic institutions and industries. Additionally, I had the pleasure of interacting with several students, whose passion and motivation for engaging in research were truly inspiring. The energy and potential at this institute are truly motivating, and I am eager to contribute to its continued growth and success in the years ahead.

Dr Anjana A M

Assistant Professor
Department of Electrical Engineering

Dr. Anjana A M has been appointed as an Assistant Professor in the Department of Electrical Engineering, IIT Hyderabad. Prior to joining IITH, she was working with Samsung R&D Institute India, Bangalore. Anjana did her B.Tech. from Government Engineering College, Trivandrum, Kerala and obtained her M.E. and Ph.D. degrees from IISc Bangalore. She has also previously held industry positions in Qualcomm India Private Limited and Lekha Wireless Solutions, Bangalore. Her research interests are in the intersection of coding theory and wireless communication.

Bank of Knowledge (BoK - Non-Academic)

Kallepelli pranaya

Junior Technician
Department of Civil Engineering

Ms Pranaya holds a BTech in Civil Engineering and MTech in Highway Engineering from Sree Chaitanya College of Engineering Karimnagar. Her academic journey laid the foundation for a career rooted in infrastructure and innovation. Recently, she had the privilege of joining the Indian Institute of Technology Hyderabad (IITH) as a Junior Technician in the Department of Civil Engineering, a role that bridges academic excellence and technical service.

My Life at IITH:
My experience at IITH so far has been both enriching and inspiring. The campus is not just a centre of advanced research but also a community that fosters learning, collaboration, and growth. I've had the opportunity to work alongside brilliant minds—faculty, researchers, and staff members—whose dedication to academic and technical excellence is truly motivating. The work environment at IITH is supportive and forward-thinking. Every day presents a new challenge and a new opportunity to contribute meaningfully to the academic ecosystem. I am proud to be a part of an institution that is shaping the future of education and engineering in India. Being at IITH is more than just a professional engagement—it's a place where knowledge meets purpose, and where each role, no matter how big or small, adds to the larger mission of nation-building through science and technology

భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్
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