

The background is a light beige textured paper. It is decorated with various geometric patterns in blue and gold. These include large sunburst-like circles with radiating lines, smaller circles filled with dots, and star-like shapes with multiple points. Some patterns are solid, while others are outlines. The patterns are scattered across the page, with a higher concentration around the central text.

**happy
new year**
2023

ROBOTECH

MONTHLY NEWSLETTER

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ASHWAMEDHA

"The rhythm of the galloping beats, etched ever in our exhilarated hearts, in all its grandeur is nearing again. With cheers of a thundering crescendo, Oh, the stallion rises!"

Ashwamedha is the annual National level Technical fest of Adi Shankara Institute of Engineering and Technology. Previously hosted with much grandeur, Ashwamedha 2019 was lauded for its magnificent poise. Now, 3 years later, after all the hustle and bustle of the pandemic, Ashwamedha 2022 is all set to bring forth a bewildering experience for all. This year's fest feature a wide array of exciting competitions and informative workshops spread across various technical disciplines. Ashwamedha'22 is a one day event conducted for all engineering students all over India. Ashwamedha is the perfect way to jazz up the technical skills of a student in a creative way.

VISION

Progress through quality education and evolve into a centre for academic excellence in the field of Robotics and Automation.

MISSION

To provide supportive academic environment for value added education and continuous improvement.
To develop socially responsible engineers with technical competence, leadership skills



ASHWAMEDA EVENTS CONDUCTED BY RA DEPARTMENT

It includes the following:

- ROS workshop

A ROS (Robot operating system) workshop was hosted as part of the inauguration of RSI(Robotic Society of India) student section. The session was coordinated by Ashvin Manoj and Cliff Andrew Oliver of S5 RA.

- Drone workshop

A drone workshop was coordinated by Alan S Puthussery S5 RA and Indrajith S1RA.

- Robo-Soccer

A soccer game with mini 4-wheeled robots was coordinated by Arjun M and Alan S Puthussery of S5RA.

- Knockout

A robot racing competition was coordinated by Brahmadathan and Athulkrishna of S3RA.



JANATICS WORKSHOP

A 5-day workshop was conducted by Janatics pneumatics pvt. Ltd as a part of Automation lab upgradation, from 28th,29th,30th of November, and 1st and 2nd of December. The workshop was based on the modes of actuations used in robotics, ie. Pneumatics, hydraulics and electrical. They taught about the circuitry part of solving pneumatic, electro-pneumatics, hydraulics and electro-hydraulic systems. They explained PLC circuitry using suitable software and their practical connections using the equipments from the automation lab.



TECHNICAL TALK AND CAREER GUIDANCE WORKSHOP

A workshop based on robotics career guidance and technological achievements was conducted on 11th October 2022. The session was conducted by Mr. Harshavardhana Kikeri, who invented HOLOSUIT and the creator of BHIMA. He mainly focused on the current developments in the technological side of robotics and their career opportunities across the global. The session ended with a FAQ session.



UPANAYANA AND FRESHER'S DAY OF 2022 BATCH

The first years induction ceremony and freshers day for the 3rd batch students of Robotics and Automation was organised on 2nd December 2022. The event began with the induction ceremony followed by the freshers day program in the afternoon.



TEACHER'S VISIT TO JANATICS PNEUMATICS

On behalf of the setting up of Automation Lab in the campus, Faculty members of Robotics and Automation Branch had visited the Janatics Pneumatics company to gain knowledge on the usage of pneumatic and hydraulic equipments and their practical circuit connections. They have explored the manufacturing process in Janatics factory and the pilot processes in their corporate office.



INTERNAL ASSESSMENTS

The first internal tests for Btech S3 was conducted on 4th, 7th and 8th of November 2022 and S5 was conducted on 4th, 7th and 14th of November 2022, and the first internal test for Btech S1 and the second internal tests for Btech S3 and S5 were conducted on 7th, 8th and 9th of December 2022.

S3 UNIVERSITY RESULTS

The results for Btech S3 university examination which was conducted in the month of March was released. The first 3 ranked students are as follows:



Anshul Raj V (9.64)



Ashvin Manoj (9.22)



Babinold (8.73)

PTA MEETING FOR S5 AND S3

A parent-teacher interactive session was conducted on 20th December for S5 students and 5th December for S3. The session was organised to discuss about the incoming semester exams and the current performance of every students in the classes.



TEACHERS ACHIEVEMENTS

PHD - ACHIEVEMENT

Ms. Vinila M L successfully defended her thesis on "Modelling and Control of Cumene Production Process" from NIT Calicut on 27th December 2022. In the dissertation a cumene process model is developed and validated, the interactions are studied, the performance tradeoffs are identified and classical and modern control techniques are applied to improve the system performance.

Ms. Sreepriya S received her Doctorate degree in the Diamond Jubilee Convocation of NIT Calicut in October 2022.

Congratulations !!!!



Dr. Sreepriya S



Dr. Vinila M L

PAPER PUBLICATION

Vinila Mundakkal Lakshmanan, Aparna Kallingal & Sreepriya Sreekumar (2022) Robust control of isopropyl benzene production process using H_{∞} loop shaping control scheme, Journal of Control and Decision, November 2022, DOI: 10.1080/23307706.2022.2146009 (Q1)

NPTEL CERTIFICATION



STUDENTS ACHIEVEMENTS

I5 HACKATHON

Arjun M, from 3rd year (Robotics and Automation dept.), attended a national level conference and hackathon which was hosted on 14th, 15th and 16th of October 2022 organised by the 5 IEEE societies. There were 3 types of workshops ie, matlab, power electronics and brain-neural networks workshop. They mainly focused on career building opportunities. He also had achieved first price in matlab competition conducted on these days.



PUNE PROJECT TRIP

Arjun M, Lijo K Simon and Alan S Puthussery from Robotics and Automation dept, visited Pune on behalf of cobot project programme, on 27th November 2022. For the next 4 days, the students along with other senior students from various departments had the job of manufacturing and assembling of an industrial robot which is needed to be tested for its practical uses in an industry in Pune



PLACEMENT ACHIEVEMENTS

The 5 senior students of applied Instrumentation and Electronics Dept. 2018-22 batch have been successfully placed in one of the ISRO's leading providers through ISA ASIET STUDENT SECTION.



ASHWAMEDA STUDENT WINNERS

The students who have won prizes in Ashwamedha are as follows:

1. Abhiram C Sunneth, Aakash Paul, Ashvin Manoj and Nevin Chackungal of S5 have secured 2nd place in Robosoccer.
2. Anup Shylesh of S3 has secured 1st place in Knockout.
3. Shankar, Kevin, Adarsh of S1 has secured rank in paint ball
4. Jithin, Gribin and Jeffin of S1 has secured rank in glow ball.

CHRISTMAS CELEBRATION

A Christmas celebration was organised on 23th December 2022 on the main stage in the centre courtyard.



THE WORLD AS A GLOBAL VILLAGE

BY SAM

**“Unity without verity is no better than conspiracy.”
– John Trapp**

Can you imagine where there is a world of threads that being bought together by internet and other electronic communication interconnection? Experts called Global Village, were all corners of the world smell the fragrance of the technology. We are living in the world that is constantly changing. With technology becoming more advanced and social media becoming more popular, the global village is only going to continue to grow. Each people have their own views and priorities. So that they blew as air through atmosphere. The transportation become faster, anyone can go through the same or explore the world, culture, through their hands on small computer.

Globalization is the exchange of ideas, capital, people, goods and services across the world, driven by technology, whether that technology is in physical form or the virtual form (Internet). Its already make us a global village, another opportunity to think differently than ever before. People can share information about their skills, hobbies, and other things they're passionate about so that everyone can learn something new. The diversity is based on the belief that all people have the same value and potential in global village. The countries helping each other in the time of crises as well as in international emergencies due to this globalization. Each are ready to spend their sweat of work to explore the universe.

The countries trying to reduce their mentality to show-off instead they are trying to do some special for the future generations. Sustainability is focused more for the same. They are trying to invest more on space applications and exploration. All have well knowledge and ideas on that what they have to do or vice-versa. This is because “The Global Village is Expanding!!!!”.

LATEST TECHNICAL DEVELOPMENTS IN ROBOTICS AND AUTOMATION

ROBOTS GRIP BETTER WHEN THEY GRIP SMARTER

Even simple robotic grippers can perform complex tasks—so long as it's smart about using its environment as its handy aide. This, at least, is the finding of new research from Carnegie Mellon University's Robotics Institute.

In robotics, simple grippers are typically assigned straightforward tasks such as picking up objects and placing them somewhere. However, by making use of their surroundings, such as pushing an item against a table or wall, simple grippers can perform skillful maneuvers usually thought achievable only by more complex, fragile and expensive, multi-fingered artificial hands.

However, previous research on this strategy, known as “extrinsic dexterity,” often made assumptions about the way in which grippers would grasp items. This in turn required specific gripper designs or robot motions.

In the new study, scientists used AI to overcome these limitations to apply extrinsic dexterity to more general settings and successfully grasp items of various sizes, weights, shapes and surfaces.

“This research may open up new possibilities in manipulation with a simple gripper,” says study lead author Wenxuan Zhou at Carnegie Mellon University. “Potential applications include warehouse robots or housekeeping robots that help people to organize their home.” The researchers employed reinforcement learning to train a neural network. They had the AI system attempt random actions to grasp an object, rewarding those series of actions that led to success. The system, then, ultimately adopted the most successful patterns of behavior. It learned, in so many words. After first training their system in a physics simulator, they next tested it in a simple robot with a pincer-like grip.



This Autonomous Robot Might Soon Make Food Deliveries in Airports

The idea for Ottobot, a delivery robot, came out of a desire to help restaurants meet the increased demand for takeout orders during the COVID-19 pandemic. Ottobot can find its way around indoor spaces where GPS can't penetrate.

Ottobot is the brainchild of Ritukar Vijay, Ashish Gupta, Hardik Sharma, and Pradyot Korupolu. The four founded Ottonomy in 2020 in Santa Monica, Calif. The startup now has 40 employees in the United States and India.

Ottonomy, which has raised more than US \$4.5 million in funding, received a Sustainability Product of the Year Award last year from the Business Intelligence Group.

Today Ottobot is being piloted not only by restaurants but also grocery stores, postal services, and airports.

Vijay and his colleagues say they focused on three qualities: full autonomy, ease of maneuverability, and accessibility.

“The robot is not replacing any staff members; it’s aiding them in their duties,” Vijay says. “It’s rewarding seeing staff members at our pilot locations so happy about having the robot helping them do their tasks. It’s also very rewarding seeing people take their delivery order from the Ottobot.”



Ref: <https://spectrum.ieee.org/robotics>

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