

DEPARTMENT OF AUTOMATION & ROBOTICS

VESP • NEWSLETTER: AUGUST '23

"Take risks in your life. If you win, you can lead. If you lose, you can guide."

EDITORIAL

The Diploma Programme, Automation and Robotics, comprises two main areas: (1) Automation, which deals with use of computers or robots, and information technologies for handling different processes and machineries in an industry and (2) Robotics, which combines construction, operation, and application of robots coupled with computer-based control systems, sensory feedback, and information processing. This is a discipline that gives equal emphasis on hardware as well as software development. Hence the curriculum of this Diploma Program gives emphasis on Basics of Robotics, Robotic Programming, Sensors and Actuators used in Automation and Robotics, electronics, electrical controls & components such as servo systems, hydraulics & pneumatics, Automation tools such as PLC, SCADA, DCS etc.

MESSAGE FROM HOD

[MRS. BINDU RAMESH](#)

Welcome to the Department of Automation and Robotics. The Department, established in the year 2020-21, with an intake of 60, is approved by All India Council for Technical Education and is affiliated to Maharashtra State Board of Technical Education.

Automation has become the key word for the development of any industry. And with the onset of the "Make in India movement", there is going to be a huge demand for engineers in the emerging areas of technology. Automation and Robotics is one such emerging field identified by the All India Council for Technical Education.

The Department has well Qualified Faculty members and well Equipped Laboratories to impart the required technical skills in students. Regular industrial training, Visits and expert lectures are also conducted for the students so that they become aware of the recent trends in the industry. Along with technical knowledge, the Department also focuses on overall personality development of students. They are constantly encouraged to participate in various co-curricular activities like technical paper presentations, Quiz, Project Exhibitions etc and extra curricular activities such as Singing & Dance competitions, Literary Skill Competitions etc. The Department leaves no stones unturned to make its students well prepared to face this challenging world and aspires for their bright future.

WHAT'S INSIDE

Message from HOD

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MRS. BINDU RAMHESH

**HEAD OF DEPT.
AUTOMATION & ROBOTICS**

DEPARTMENT PROFILE

Location: Main Building

Total number of Classrooms: 03

Total number of Laboratories: 05

Faculty-Student Ratio: 1:16.27

Total Faculty: 08

Supporting Technical Staff: 03

DEPARTMENT VISION

- To excel in the field of Automation and Robotics by creating technocrats with value based professionalism.

DEPARTMENT MISSION

- To ensure that the students achieve necessary expertise in the field of Automation and Robotics through dedicated and innovative teaching.
- To create technically educated youth for flourishing professional career with a desire for lifelong learning.
- To provide a platform for overall personality development of students with professional ethics, social awareness and moral values so that they would be well equipped to realize their potential and reach their aspiration.

PROGRAM SPECIFIC OBJECTIVES

- Maintain various types of Automation and Robotics equipment
- Apply the basic computing knowledge and related software for the implementation and operation of Automation and Robotics systems

PROGRAM EDUCATIONAL OBJECTIVES

- Provide socially responsible, environment friendly solutions to Automation and Robotics engineering related broad-based problems adapting professional ethics. .
- Adapt state-of-the-art Automation and Robotics engineering broad-based technologies to work in multi-disciplinary work environments.
- Solve broad-based problems individually and as a team member communicating effectively in the world of work.

DEPARTMENTAL ACTIVITIES

Apart from the student's development, the department also focuses on faculty development so that the teachers can adapt themselves with the technological changes. Hence the department encourages the staff to participate in training programs, conferences and workshops.

Staff Trainings:

- Lata Upadhye completed an 8-week online training program on "Introduction to Machine Learning" organized by NPTEL-IIT Kharagpur.
- Manju Kurien completed an 8-week online training program on "Robotics" organized by NPTEL-IIT Kharagpur.
- Saroj Desai completed a 12-week online training program on the "Internet of Things" organized by NPTEL-IIT Kharagpur.
- Saroj Desai participated in a training program on Intellectual Property Awareness under the National Intellectual Property Awareness Mission on December 27, 2023.
- Nikhil Satpute completed a 4-week online training program on "Patent Drafting for Beginners" organized by NPTEL-IIT Kharagpur.
- Nikhil Satpute completed an 8-week online training program on "Research Methodology" organized by NPTEL-IIT Kharagpur.



“We are responsible for what we are, and whatever we wish ourselves to be, we have the power to make ourselves. If what we are now has been the result of our own past actions, it certainly follows that whatever we wish to be in the future can be produced by our present actions; so we have to know how to act.”

-Swami
Vivekananda

STUDENT ACTIVITIES

Co-curricular activities-

Technical Paper Presentation:

- Chirag Patil and Karan Kale secured first place in the state-level technical paper presentation held on 4th November 2023 at Walchand College of Engineering, Sangli, winning a cash prize of 5000.
- Shrey Ruparel and Merwyn Pillay participated in state-level technical paper presentation held on 4th November 2023 at Walchand College of Engineering, Sangli.
- Raj Salvi and Rachit Patil participated in state-level technical paper presentation held on 4th November 2023 at Walchand College of Engineering, Sangli.
- Chirag Patil and Karan Kale secured second place in the state-level technical paper presentation held on 13th October 2023 at BVIT Khargar, winning a cash prize of 1000.
- Shrey Ruparel and Merwyn Pillay participated in state state-level technical paper presentation held on 13th October 2023 at BVIT Khargar.

Other Competitions

- AO5I participated in the Smart India Hackathon (SIH) 2023 Internal Assessment held on 25/9/2023 at VESP.
- Rachit Patil, Mayank Thapar, and Savir Shirgadi participated in the India Automation Games 2023 held on 8/9/2023 - 9/9/2023 at NMIMS College.

Technical Quiz Competitions

- RUTISH NARAYANKAR, AVISHEK PRASAD, SHASHWATI KOLI, CHINMAY PAKHARE secured the FIRST PLACE in the " held on April 22-23, 2023, at V.E.S.POLYTECHNIC.
- Shrey Ruparel and Merwyn Pillay participated in the Techathlon 2K23 State Level Technical Quiz Competition held on 31/10/2023 at A.R.Kalsekar Polytechnic, New Panvel.
- Shravanee Yadav and Shlok Lakhmani participated in the Techathlon 2K23 State Level Technical Quiz Competition held on 31/10/2023 at A.R.Kalsekar Polytechnic, New Panvel.
- Vinesh Advani and Faizan Shah participated in the Techathlon 2K23 State Level Technical Quiz Competition held on 31/10/2023 at A.R.Kalsekar Polytechnic, New Panvel



STUDENT ACTIVITIES

Co-curricular activities-

ISA VESP student council

- Aradhya Borhade as the PRESIDENT.
- Merwyn Pillay and Sara Gadhave as the SECRETARIES.
- Chirag Patil and Savir Shrigadi as the TREASURERS.



ISA EVENTS ORGANISED

- CONNECT TECH S2 EP1 with Jignesh Vasa and Dinesh Sehgal.
- CONNECT TECH S2 EP2 with Krupalu Mehta Founder of Parallax Labs and Harsh Mehta
- CLASH OF CLANS is an intra-college level debate competition.

ISA-VESP STUDENT COUNCIL 23-24



Connect Tech S2 Ep1



Connect Tech S2 Ep2

STUDENT ACTIVITIES

Extra-curricular activities-

NSS Team Contributions:

- The NSS Team - VESP organized the Panch Pran event on August 9, 2023, as part of the "Azadi ka Amrit Mahotsav" celebration.
- The NSS Team - VESP encouraged 400 individuals to upload a selfie holding soil as part of the "Meri Mati Mera Desh" theme on October 20, 2023.

NATIONAL SERVICE SCHEME

Team from our department:

- Bhadra satra
- Kashish Rohra
- Danish Syed
- Tanushree Modhave
- Mayuresh Dhurve
- Mrudula Deherkar
- Aastha Sonar
- Shravanee Yadav
- Sneha Sail
- Ayushman Yadav
- Shreyas Sitap
- Athrava Bodas
- Kanak Mokashi

TESTIMONIALS

“College is going pretty cool lately as we have so many events to participate in! . I think, even if you have zero idea about anything, one must still take part in it, get help from the staff and volunteers and just do it anyway! Because ultimately taking risks and new challenges makes us a different person altogether, right? I personally have noticed a huge difference after making so many presentations and technical papers. I feel much more confident too. I’d like to thank VES Polytechnic for such opportunities. Thank you.”

Vrushabh Shinde, AO5I



STUDENT ACTIVITIES

Extra-curricular activities-

- AO3I participated in International Yoga Day on July 21st, 2023, at VESLARC, Chembur, Mumbai, led by mentor Anjana Shrivastav and Mr. Santosh Mulye.
- Sneha Sail and Shravanee Yadav(AO3I) won the second prize in the one-day group singing competition held at Vivekani on August 15, 2023, hosted by the VES Cultural Cell.
- Gaurav Lilwani won first place in the Speak-A-Look Vachan Prerna Diwas competition held at the VESP Library on October 17-18, 2023.
- Harsh Makhija won third place in the Speak-A-Look Vachan Prerna Diwas competition held at the VESP Library on October 17-18, 2023.
- Savir Shrigadi & Aditya Shinde(AO5I), Mahir Shah & Bhadra Satra(AO1K) participated in the TEDx Talk Competition at Vidyalankar Polytechnic on October 13, 2023.
- Jatin Bajaj, Jaisingh Santani, Aaryan Mohanani, Dhiren Mankani, Gaurav Mulchandani, Pushkar Jawani, Ekalavya Aswani, Yash Chawla, Krrish Nihalani, and Atharv Bodas participated in the Renaissance 2023 Design Dash-Annual Technical Festival held on 5th October 2023 at K.J Somaiya Institute of Technology.
- Soumil Chavan, Niraj Sapre, Mahin Narvekar, Pratham Pawar, and Kunal Pote participated in the Renaissance 2023 Tech Stroke Pictionary-Annual Technical Festival held on 5th October 2023 at K.J Somaiya Institute of Technology.

TESTIMONIALS

"As an engineering student, I am constantly challenged to think outside the box and come up with creative solutions to complex problems. It can be tough at times, but the feeling of accomplishment when you finally solve a difficult engineering problem is unlike anything else."

Aradhya Borhade,
AO5I



STUDENT ACTIVITIES

Guest Lectures-

- AO5I (Full Class) attended a guest lecture on Value Proposition Fit and Business Fit in collaboration with IIC and VESPAA, featuring Hethal Mudra's Community Architect from KJ Somaiya College of Engineering, Vidyavihar on August 8, 2023.
- AO3I and AO5I Full Class) attended a guest lecture on "early-stage entrepreneurs by Mr. Monu Shetty, Chief Operating Officer of Axenous, Mumbai, hosted by the Institute's Innovation Council (IIC) on August 29, 2023.
- AO5I(Full Class) attended an industry expert lecture on "Angel Investment and VC funding avenues for early-stage entrepreneurs" by Sameer Karna, Founder, and Investor at The Profit Curve, Mumbai, hosted by the Institute's Innovation Council (IIC) on August 28, 2023.
- AO5I (Full Class) attended an industry expert lecture on starting up and developing minimum viable products (MVPs) at a session with Sameer Karna, Founder and Investor at The Profit Curve, Mumbai, hosted by the Institute's Innovation Council (IIC) on August 28, 2023.
- AO5I and AO3I (Full Class) attended an industry expert lecture on Emerging Trends in Automation from Kunal Sidhwani, a Process Automation Engineer at Walmart USA, held on November 4, 2023.
- AO5I and AO3I (Full Class) attended an industry expert lecture on Industrial Safety presented by Prashant Singh, Senior Manager at RCF Chembur on November 1, 2023.

Industrial Visits-

- AO5I (Full Class) attended the IFAT India trade fair for Water, Sewage, Solid Waste, and Recycling at the Bombay Exhibition Centre, Mumbai, India on October 19, 2023. The event was held under the subject of Environmental Studies and Mrs. Vidya Harpude and Mr. Bhola Mandal were present at the event
- AO5I (Full Class) visited the Automation India Expo 2023 at Goregaon, Mumbai on August 26, 2023. The visit was organized under the subject of AIM and Mrs. Lata Upadhye and Mr. Pankaj Chorasiya, Sales Executive at Subzero, were present during the industrial visit.
- AO3I (Full Class) went on an industrial visit to the Automation India Expo 2023 at Goregaon, Mumbai on August 26, 2023, under the subject of BRO. The visit was attended by Manju Kurien and Mr. Pankaj Chorasiya, Sales Executive at Subzero.



IFAT India Visit

ARTICLES BY STUDENTS

Technical articles

Printing the Future: A Glimpse into the World of Tomorrow's 3D Printing:

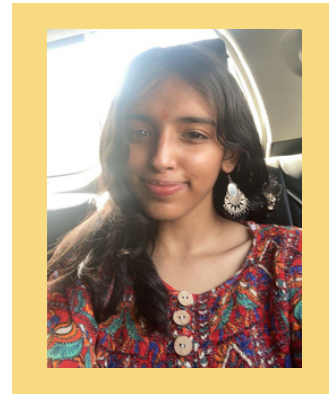
3D printing is rapidly becoming a transformative technology, and the future promises even more exciting developments. From new materials to personalized household objects, bioprinting, and construction, 3D printing is poised to reshape our world in profound ways.

Materials innovation is at the forefront of 3D printing's future. Biocompatible materials, sustainable materials derived from recycled waste or organic sources, and super-strong materials capable of withstanding extreme conditions are just a few examples of what's to come.

Desktop 3D printers are becoming more affordable and user-friendly, democratizing access to personalized household objects and even food printing. Educational tools printed in minutes could transform classrooms, fostering hands-on learning and sparking creativity.

Bioprinting holds immense potential for regenerative medicine, with the printing of replacement skin tissues or even functional organs. This technology could revolutionize healthcare, offering personalized solutions and potentially overcoming organ donor shortages.

Imagine large-scale 3D printers constructing buildings and infrastructure with unprecedented speed and efficiency. Customized houses printed on-site, disaster relief efforts benefiting from rapid 3D printing, and more.



As 3D printing integrates with AI and robotics, expect a collaborative future. Robots guided by AI could print complex structures or perform delicate repairs on-site. This synergy could lead to autonomous 3D printing systems capable of operating independently, further transforming manufacturing and construction processes.

-Yaashika Murpani, AO3I

Robots in White Coats: Exploring the Future of Medicine

Robotics is a multidisciplinary field that encompasses the design, construction, operation, and use of robots. Robots are autonomous or semi-autonomous machines that can perform tasks with varying degrees of complexity, often to automate tasks that are dangerous, repetitive, or labor-intensive for humans. They play a crucial role in various industries, from manufacturing and healthcare to space exploration and entertainment.

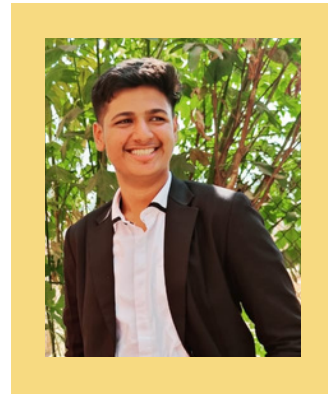
One of the key aspects of robotics is autonomy. This means that robots can operate on their own, without constant human control. They can sense their surroundings, make decisions based on that information, and carry out tasks accordingly.

Precision at its finest:

Imagine a future where robots, equipped with advanced AI and microscopic dexterity, perform minimally invasive surgeries with unparalleled precision. This is already happening with robotic-assisted surgery, but future advancements promise even greater autonomy and accuracy. Microscopic robots could navigate intricate bodily landscapes, delivering targeted treatments and minimizing collateral damage.

Personalized care, on-demand:

Robots won't just be surgeons; they'll be companions and caregivers too. Imagine robots that monitor your health, analyze your vitals, and even provide emotional support. These robots could become invaluable tools for managing chronic conditions, offering personalized guidance and reminders, and even detecting early signs of illness



Nanobots the microscopic revolution:

Microscopic robots, or nanobots, could become the ultimate medical allies. Imagine tiny robots swimming through your bloodstream, delivering medication directly to diseased cells or even performing microscopic surgeries from within. This technology, while still in its early stages, holds immense potential for treating a wide range of diseases, from cancer to Alzheimer's.

Revolutionizing rehabilitation:

Rehabilitation robots are already helping patients regain mobility and function after injuries or surgeries. But the future promises even more personalized and immersive experiences. Imagine robots that tailor their assistance to individual needs, providing real-time feedback and motivation, and even creating virtual reality environments for enhanced therapy.

Ethical considerations and challenges:

While the future of medical robotics is exciting, it's crucial to address ethical concerns. Issues of data privacy, accessibility, and potential job displacement need careful consideration. Additionally, ensuring the safety and efficacy of these technologies will be paramount.

- Aradhya Bohrade, AO5I

AI: Cultivating the Future of Agriculture

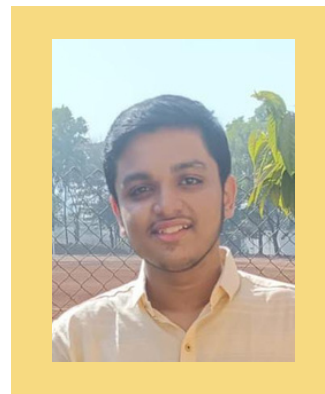
Agriculture is the backbone of civilization, but it faces numerous challenges. Feeding a growing population with limited resources, combating climate change, and ensuring food security are just a few of the hurdles that must be overcome.

Fortunately, there is a beacon of hope on the horizon: Artificial Intelligence (AI). AI is poised to revolutionize agriculture, transforming it from a traditional practice into a data-driven, sustainable, and highly efficient industry. The potential of AI in agriculture is immense, and it's time to embrace this technological revolution.

Precision agriculture is at the core of AI's impact on agriculture. By using AI-powered sensors and drones to gather vast amounts of data on soil health, crop growth, and environmental conditions, farmers can get real-time insights into their fields. They can know exactly where their crops need water, fertilizer, or pest control, maximizing yield while minimizing waste. This precision approach optimizes resource usage, leading to increased profitability and environmental sustainability.

AI's predictive power is another game-changer. By analyzing historical data and weather patterns, AI models can predict crop yields, disease outbreaks, and even optimal planting times. This empowers farmers to make informed decisions, proactively addressing challenges and mitigating risks before they impact their crops. The result is a more efficient and sustainable food production system.

Autonomous robots powered by AI are also transforming agriculture. Imagine robots that can weed fields with laser precision, eliminating the need for harmful herbicides. Or robots that tirelessly harvest crops, reducing labor costs and ensuring consistent quality. These robotic helpers will free up farmers' time for strategic planning and decision-making, making the industry even more efficient.



AI can also revolutionize animal husbandry. Wearable sensors can monitor the health of individual animals, detecting diseases early and preventing outbreaks. AI-powered cameras can track animal behavior, optimizing feeding schedules and ensuring their well-being. This leads to higher quality and more sustainable livestock production, benefiting both animals and farmers.

Although the potential of AI in agriculture is immense, challenges remain. Data access and infrastructure need improvement, particularly in rural areas. Ethical considerations regarding data privacy and job displacement must also be addressed. However, by embracing AI, we can cultivate a future where food security and environmental well-being are no longer distant dreams but a flourishing reality.

In conclusion, AI is not here to replace farmers but to empower them. By providing valuable insights, automating tedious tasks, and enabling proactive decision-making, AI will transform agriculture into a more sustainable, efficient, and productive industry. It's time to embrace this technological revolution and cultivate a brighter future for agriculture.

- Chirag Patil, AO5I

RESULT ANALYSIS

Rank Holders - Winter Examination 23-24

A05I



Aditya Pathare, 94.00%



Chirag Patil, 92.71%



Rachit Patil 92.47%

A03I



Faizan Shah, 92.38%

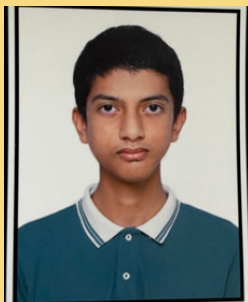


Alisha Shaikh 89.75%



Aditya Sasane, 87.38%

A01K



Parth Koyande 85.77



Dhanashree Babar 85.53



Afsheen Shah 84.12

EDITORIAL MEMBERS

The Team...



ARADHYA BORHADE (AO5I)



ADITYA PATHARE (AO5I)



CHIRAG PATIL (AO5I)



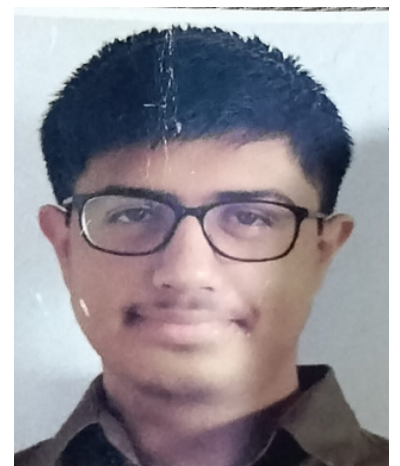
MENTOR - Nikhil Satpute



YAASHIKA MURPANI(AO3I)



ADVAIT SALUNKHE (AO1K)



KRISH KESWANI(AO1K)