# IETE-ISF

# ANNUAL REPORT 2023-24

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# IETE-ISF 2023-2024

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# DJS STRIKE 2024



Expert: Mr. Vedant Awasthi and Ms. Roma Jain

Expert Affiliation: 1) Mr. Vedant Awasthi, Co-Founder of Ai Can Private Limited.
                    2) Ms. Roma Jain, Data Scientist at Oversee AI.

Dates: 27th April, 2024

Participants: 120+ Students

Objectives of the activity:
● Actualize the vision of DJ Strike 2024: 'Project to Product'.
● Close the chasm between theory and practice by integrating diverse concepts into cohesive projects.
● Utilize both online and offline review methods to monitor DJ Strike participants' progress.
● Offer participants guidance to rectify any errors in project execution, ensuring cost-effectiveness and impactful outcomes.

Conducted by: IETE-ISF's committee in association with the faculty of DJSCE's EXTC Department.

# ABOUT STRIKE

IETE-ISF's DJ Strike initiative serves as a vital bridge between theoretical knowledge and its practical application. As the flagship annual project-based competition at DJSCE, DJ Strike draws a diverse and enthusiastic crowd from all corners of the college. Recognizing the significance of hands- on learning, numerous students from various disciplines eagerly participate in this event each year.

The review process unfolds in four distinct phases. Initially, students form groups and collectively choose a specific project topic. Once the topic is selected, teams submit a comprehensive design report for the first review, covering not only technical aspects but also delving into the project's cost-effectiveness and its potential societal impact.

Moving on to the second review, teams showcase 20% progress of their projects, offering a glimpse into the foundational structure of their chosen topics. Reviewers evaluate aspects such as concept clarity, research efforts, and the team's overall dedication. Throughout this phase, faculty members play a pivotal role in guiding and motivating students, sharing their expertise to enhance project quality.

The third review marks a significant milestone as teams present approximately 80% completion of their projects. This stage provides a comprehensive overview of the project's development and sets the stage for the final submission.

The culmination of the DJ Strike competition is the final project submission, where teams exhibit their completed projects to esteemed personnel from outside the college. Projects are evaluated based on various criteria, including presentation quality, functionality, and societal impact. Winning projects are awarded coveted cash prizes, while all qualifying papers are published in the prestigious DJ Strike Magazine 2024, further amplifying the recognition of participants' hard work and innovation.

# DJ STRIKE REVIEWS

Date of 1st Review: 25th to 30th September,2023
Date of 2nd Review: 1st to 09th November,2023
Date of 3rd Review: 5th to 10th February,2024
Date of 4th Review: 27th April,2024

The inception of DJ Strike, a project-based competition orchestrated by IETE-SF, was spearheaded by Dr. Amit A. Deshmukh, Head of the Department, during the academic year 2023-24, with the guiding principle of 'Project to Product'. The primary aim of DJ Strike is to provide students with a platform to cultivate and apply technical skills through project development, fostering an environment where projects can evolve into fully-fledged products.

The initial review phase for DJ Strike 2023-24 commenced in the third week of September 2023. During this phase, students engaged with their assigned faculty guides, presenting their preliminary project documentation. This documentation encompassed project abstracts, block diagrams detailing utilized components, expected budgets, and action plans for timely project completion.

The review board comprised esteemed faculty members, including Dr. Amit A. Deshmukh, Dr. Anuja Odhekar, Prof. Yukti Bandi and several others. Teams were evaluated on project objectives, anticipated outcomes, social impact, innovation, and motivation. Additionally, documentation quality and real-world applicability were meticulously scrutinized, with reviewers offering guidance to enhance project cost-effectiveness and efficiency. Scores awarded during this phase were recorded and factored into the final project evaluation.

Subsequently, the second review phase, held in the first week of November 2023, witnessed the integration of SE students into existing TE student groups based on their implementation interests. Teams were evaluated on literature surveys, project progress, implementation strategies, team management, and collaboration. Utilization of resources from IETE-ISF's component bank facilitated 20% project progress demonstration.

Building upon feedback from the initial reviews, teams diligently advanced their projects, culminating in the third review in the first week of February. Here, teams showcased significant project completion progress, with a focus on presenting 70-100% of their projects alongside technical papers slated for publication in the DJ Strike magazine.

The final review, conducted just one week before the ultimate project competition in the last week of April, provided teams with the opportunity to exhibit completed projects and technical papers to project mentors and reviewers. Valuable feedback was provided, enabling teams to refine their projects further and enhance their overall quality.

## DJ STRIKE PROJECT EXHIBITION

The Strike event kicked off with great success, as each of the labs in DJSCE's EXTC department welcomed teams. Renowned experts, Mr. Vedant Awasthi and Roma Jain took charge of evaluating each group's project. Mr. Vedant Awasthi, Co-Founder of Ai Can Private Limited, specializes in building low-code IoT systems for manufacturing processes. His expertise in leveraging AI and IoT technologies to optimize manufacturing operations is invaluable. Ms. Roma Jain is a seasoned data scientist currently driving innovation at Oversee AI. With a rich background spanning Education Technology, Climate Technology and Financial Technology, she brings a wealth of expertise to the table, shaping the future of data-driven solutions across diverse industries. The experts meticulously assessed the teams on various parameters such as their potential to transform into marketable products, the quality of presentation, implementation proficiency, and degree of innovation. Both experts emphasized the importance of considering scalability and industry-level applicability, offering valuable insights and resources to support teams in this endeavor. Following a seamless demonstration of all projects, the experts convened to deliberate and ultimately selected the most promising teams as the competition's winners.

| Position | Paper Name | Members | Faculty Mentor |
|---|---|---|---|
| 1 | Implementation of smart and automated greenhouse using IOT. | Aarya Rokade, Jitendra Singh, Tulsi Bhushan | Dr. Venkataramanan V. |
| 2 | Biomimetic Robotic Hand | Darshan Markar, Dhruv Panchal, Shreedhar Barot | Dr. Venkata A.P.C |
| 3 | TerraTeach | Raveesh Kanakia, Aarya Chandra, Vrajesh Gokani | Dr. Sunil Karamchandani |

Our respected Head of Department, Dr. Amit A. Deshmukh announced the winners to a roaring applause from the participants. Dr. Deskhmukh encouraged students to innovate further and focus on the practical implementation of their future projects. Both the experts were thanked extensively by the present IETE-ISF committee, with the DJ Strike proceedings being unveiled by our respected experts. Finally, all the strike faculty coordinator's Prof. Yukti Bandi, Prof. Pavankumar Borra, Prof. Abhilasha Raghtate and Dr. Anuja Odhekar were thanked, and thus DJ Strike 2024 ended.

Outcomes:
● DJ Strike 2024 facilitated the integration of theory and practice, fostering hands-on learning and project development among students.
● Expert evaluation by Mr. Vedant Awasthi and Ms. Roma Jain provided valuable guidance to teams, emphasizing scalability and real-world applicability.
● Innovative projects like the smart greenhouse and Biomimetic Robotic Hand showcased the creativity and technical prowess of participants.

- Emphasis on societal impact encouraged students to develop solutions that address real-world challenges and contribute positively to society.
- DJ Strike 2024 culminated in the recognition of outstanding projects, underscoring the event's success in promoting innovation, collaboration, and the practical application of technical skills among students.

Photographs from the event:



*Our experts, Mr. Vedant Awasthi and Ms. Roma Jain judging a participant's project*



*Innovation on display: Participant showcasing project during our annual event.*

*Experts presenting a ceremonial cheque to the runner-up's, honoring their achievement.*

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Prof. Abhilasha Raghtate
Faculty Strike Co-Ordinator
Assistant Professor, EXTC Dept.

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Prof. Pavankumar Borra
Faculty Strike Co-Ordinator
Assistant Professor, EXTC Dept.

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Prof. Yukti Bandi
Faculty Strike Co-Ordinator
Assistant Professor, EXTC Dept.

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Dr. Anuja Odhekar
Branch Counselor, IETE-ISF
Assistant Professor, EXTC Dept.

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Prof. Amit A Deshmukh
Prof and Head,
Dept. of EXTC Engineering

# DJ Spark 2024

## National Level Project Competition



Expert: Dr. Sandeep Kakatkar and Dr. Santosh Chapaneri

Expert Affiliation: 1) Dr. Sandeep Kakatkar, Scientist F & Programme Director (Industrial Solution) at SAMEER (Society for Applied Microwave Electronics Engineering & Research), Mumbai.
2) Dr. Santosh Chapaneri, Senior Data Scientist at Wolters Kluwer.

Date of the event: 27th April, 2024

Participants: Second, Third- and Fourth-year students

No. of Participants: 130+ participants

Objectives of the activity:
- The students learnt how to implement concepts while working on projects.
- The students developed a systematic approach towards their respective topic.
  Indulged in a lot of research in order to develop their project.

**Contents:**

A robust spirit of competition acts as the driving force propelling individuals towards progress and distinction," as stated by the quote, the IETE-ISF of DJSCE commenced their much-anticipated DJ Spark Event, marking the culmination of the academic year 2023-24.

DJSCE IETE-ISF, extended a warm welcome through opening speech. Following this, the Principal of DJSCE, Honorable Hari Vasudevan, and the respected Head of the Department of Electronics and

Telecommunication, Prof. Amit Deshmukh, shared their perspectives, urging participants to maintain their zeal for future endeavors. Principal Vasudevan also commended DJSCE IETE-SF for orchestrating DJ Spark successfully for the past 13 years. This was followed by the unveiling of the meticulously crafted DJ Spark magazine.

Dr. Sandeep Kakatkar and Dr. Santosh Chapaneri were cordially welcomed as the experts for the grand competition. Dr. S.S Kakatkar is an accomplished professional with a background in Electronics and Telecommunication. He holds degrees from renowned institutes such as College of Engineering (Pune), IIT Kharagpur and Mumbai University. His expertise lies in Radio Frequency and Microwave systems. Dr. Santosh Chapaneri is a Senior Data Scientist at Wolters Kluwer, who develops healthcare solutions using Generative AI. With a PhD from the University of Mumbai, and an MS from the University of Arizona, Dr. Chapaneri brings a wealth of expertise in machine learning, signal processing and generative AI. DJ Spark stands as an annual, project-centric national-level competition, offering students a platform to showcase their technical prowess and vie with peers from across India. To participate, students are required to submit a technical paper outlining an ongoing project or a project idea they intend to execute. Following submission, the papers undergo scrutiny and assessment by the faculty of the EXTC department. Shortlisted teams then present their projects at the college.

Additionally, each project is assigned an ISBN number, regardless of the competition outcome, which holds significance throughout their engineering journey. Winners of the competition receive cash prizes and other incentives.

DJ Spark serves as a catalyst for aspiring engineering students, fostering a culture of innovation, practical learning, and growth. It motivates students to transcend their comfort zones and develop innovative solutions, addressing diverse applications and effecting positive change.

Initially, 72 papers were submitted, from which 34 were shortlisted following rigorous review, evaluation, and grading. After a seamless presentation of all the selected projects, the experts announced the competition winners. Below is a list of the winning projects and their respective teams.

| Position | Paper Name | Members | Faculty Mentor |
|---|---|---|---|
| 1st | PCB Milling CNC Machine | Om Ahire, Yash Telang. Arya Bait. Aryan Satam, Niyati Patil, Nupur Bachhuka, Prashant Sherkar | Prof. Mrunalini Pimpale |
| 2nd | Planetary Probe Instrument Delivery | Manav Pandya, Kimaya Ved, Prasanna Nadkarni. Soham Lotlikar, Sanika Ajgaonkar, Mrunmayee Pawar, Pranaav Contractor, Jay Kawa | Prof. Amit A. Deshmukh |
| 3rd | Smart City- Urban Intelligence | Shreya Nimbre, Om Walunj, Tanishka Ayare, Pranav Kamble | Prof. Vikram Kehri |

With a very generous vote of thanks to the experts, the Head of the Department, the faculty members,

and the whole IETE-ISF, the event marked its grandiose end.

**Outcomes:**
- The students became aware of practical applications in the field of electronics and telecommunication. Students from various departments came together to piece up a single project.
- Students explored various other research papers and improved their project work under the guidance of their  mentors.

Participant List:

Photographs from the event:



*Participants elucidating their project vision*



*Expert evaluation in progress: Assessing project excellence.*

*Critically evaluating project submissions*

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Dr. Anuja Odhekar                                                                    Prof. Amit A Deshmukh
Branch Counsellor, IETE-ISF                                                                   Prof and Head,
Assistant Professor, EXTC Dept.                                           Dept. of EXTC Engineering

# FACILITIES PROVIDED BY IETE-ISF

## BOOK BANK

The book bank facility provided by IETE-ISF offers students a vital resource to enhance their academic journey. Through this initiative, students can access reference books at nominal rates for an entire semester, enabling them to deepen their understanding of subjects and consolidate their foundational knowledge. This initiative stands as a testament to the organization's commitment to excellence in education and the empowerment of its students to excel academically and professionally.

## COMPONENT BANK

The IETE-ISF Component Bank offers students a vital resource for accessing electronic components necessary for project execution. This system not only ensures equitable access to resources but also fosters a culture of accountability and sustainability. By providing essential components at an affordable cost, the Component Bank empowers students to engage in meaningful learning experiences and innovative projects both within and beyond the curriculum, reaffirming the committee's commitment to student success and academic excellence.

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Dr. Anuja Odhekar                                                      Prof. Amit A Deshmukh

Branch Counsellor, IETE-ISF                                         Prof and Head,

Assistant Professor, EXTC Dept.                                 Dept. of EXTC Engineering

# SEMINAR ON TECHINCAL PAPER WRITING



Expert**:** Dr. Venkata A.P. Chavali
Expert Affiliation: Assistant Professor, Dept. of Electronics and Telecommunication Engineering, Dwarkadas J. Sanghvi College of Engineering.
Date: 15th February 2024
No. of Participants: 30+ participants
**Objective**:
The objective of the seminar was to equip students of Second Year (SE) and Third Year (TE) with the necessary skills and knowledge required to write technical papers effectively. The seminar aimed to provide insights into the structure, formatting, and content of technical papers, enhancing the participants' understanding of academic writing in the field of electronics and telecommunication engineering.

**Key Highlights:**

Introduction to Technical Paper Writing: Prof. Venkata commenced the seminar by introducing the concept of technical paper writing, emphasizing its significance in academia and industry. She highlighted the importance of clear communication, logical organization, and adherence to academic standards in technical writing. The speaker elucidated the standard structure of a technical paper, comprising sections such as abstract, introduction, literature review, methodology, results, discussion, conclusion, and references. Prof. Venkata elaborated on the purpose and content of each section, elucidating the sequential flow of information in a well-written technical paper.

Writing Techniques and Guidelines: Prof. Venkata shared various writing techniques and guidelines to enhance the clarity, coherence, and conciseness of technical papers. She discussed strategies for effective literature review, data presentation, and result interpretation, empowering the participants with practical tools for conveying their research findings effectively. The speaker provided insights into

formatting guidelines and citation styles commonly used in technical papers. Prof. Venkata discussed the importance of adhering to prescribed formatting standards, such as IEEE or ACM, and demonstrated the proper citation of sources to avoid plagiarism and uphold academic integrity.

Interactive Q&A Session: The seminar concluded with an interactive question-and-answer session, wherein participants had the opportunity to seek clarification on specific aspects of technical paper writing. Prof. Venkata addressed queries raised by the participants, further enriching their understanding of the subject matter.

### Conclusion:

The seminar on technical paper writing conducted by the IETE-ISF Committee of DJSCE EXTC Dept. proved to be highly informative and beneficial for the participants. Through Prof. Venkata's expert guidance, the participants gained valuable insights into the intricacies of academic writing, empowering them to excel in their future endeavours. The event served as a platform for fostering academic excellence and promoting research culture among students of the Electronics and Telecommunication Engineering Department.

### Acknowledgments:

The IETE-ISF Committee extends its gratitude to Prof. Venkata a P C for her invaluable contribution to the seminar. Special thanks to the participants for their enthusiastic participation and engagement throughout the session.

Overall, the seminar received positive feedback from the attendees, indicating its success in fulfilling its objectives and fostering a culture of academic excellence among students.

### Outcomes:

- Enhanced understanding of technical paper writing: Participants gained insight into the structure, formatting, and content of technical papers, improving their ability to communicate research effectively.
- Practical writing tools: Attendees acquired various writing techniques and guidelines to enhance clarity, coherence, and conciseness in their technical papers.
- Familiarity with formatting standards: Proficiency in adhering to prescribed formatting standards, such as IEEE or ACM, and proper citation practices was emphasized, contributing to academic integrity.
- Interactive learning: The interactive Q&A session provided a platform for participants to seek clarification on specific aspects of technical paper writing, enriching their understanding of the subject matter.
- Promotion of research culture: The seminar served as a platform for fostering academic excellence and promoting research culture among students.

*Engaged participants demonstrate attentive focus during the session.*

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Dr. Anuja Odhekar                                         Prof. Amit A Deshmukh
Branch Counsellor IETE-ISF                                              Prof and Head,
Assistant Professor, EXTC Dept.                           Dept. of EXTC Engineering

# UnPlugged 1.0

# 24-hr National Hardware Hackathon



Expert: Mr. Dishant Shah and Mr. Satyendra Gupta
Expert Affiliation: 1) Mr. Dishant Shah, Director of Blue Phoenix Technologies.
              2)Mr. Satyendra Gupta, Founder and Director of Neoperk Technologies Pvt. Ltd.
Date: 9th and 10th March, 2024
No. of Participants: 300+ participants

Objectives:
- Foster innovation and collaboration in hardware technology.
- Provide a platform for aspiring engineers and tech enthusiasts to showcase their skills.
- Address pressing issues in agriculture through hardware-based solutions.
- Push the boundaries of innovation in precision farming and IoT applications.
- Promote hands-on learning experiences and practical skill development.

The Team IETE-ISF of Dwarkadas J Sanghvi College of Engineering, Mumbai made history by organizing the 24-hour National Hardware Hackathon "**UnPlugged 1.0**" on the 9th and 10th of March 2024. This groundbreaking event attracted teams from various corners of India, bringing together some of the brightest minds in the field of hardware innovation. Unplugged 1.0 aimed to provide a platform for aspiring engineers, inventors, and tech enthusiasts to showcase their skills, creativity, and problem-solving abilities. The event focused on hardware-based projects, challenging participants to bring their innovative ideas to life within a compressed time frame. Event commenced with a grand inauguration ceremony at 9:00 hrs on the 9th of March. The event was inaugurated by Dr. Hari Vasudevan, the esteemed Principal of the college, alongside Prof. Amit Deshmukh, Head of the Department of Electronics and Telecommunication (EXTC), and faculty members of the EXTC Department.

The dignitaries inaugurated the hackathon with a motivational address, emphasizing the significance of innovation and collaboration in the rapidly evolving field of hardware technology. Their presence added prestige to the event, setting the stage for an inspiring and dynamic competition. The opening ceremony not only marked the formal commencement of the hackathon but also created a sense of camaraderie among the participants, mentors, and organizers.

Dr. Hari Vasudevan and Prof. Amit Deshmukh expressed their support for the initiative and encouraged the participants to make the most of the unique opportunity presented by the 24-hour hackathon. The involvement of the college leadership and faculty members underscored the institution's commitment to fostering a culture of technological innovation and hands-on learning. The presence of these esteemed individuals at the inauguration contributed to the overall success and prestige of the IETE-ISF National Hardware Hackathon Unplugged 1.0, 2024.

**Problem Statement**

**Round 1:**

In a bid to tackle the pressing issue of water conservation in agriculture, engineers and designers were called upon to push the boundaries of innovation. Crafting a sophisticated printed circuit board (PCB) using KiCad, a task that demands seamless integration of predetermined components while encouraging participants to introduce their own creative elements. Beyond mastering KiCad, participants were urged to think innovatively, aiming to surpass current limits and redefine agricultural IoT applications. With the goal of fostering sustainability and efficiency, participants were tasked with pioneering the future of precision agriculture, paving the way for a more resource-conscious and productive farming industry.

**Round 2:**

Efficient water management in agriculture is paramount for crop yields, conservation, and ecological balance. Existing irrigation systems often lack precision, leading to water wastage and suboptimal plant growth. Manual control fails to adapt to varying soil moisture conditions, hindering water distribution and impacting both yield and conservation efforts. To tackle this, an innovative solution leveraging AI for automatic valve regulation was sought.

Participants were urged to collaborate and innovate, crafting a comprehensive solution that optimises resource utilisation and minimises environmental impact. Key challenges include designing an IoT-

based circuit for agricultural use, acquiring data from sensors and cameras to monitor soil moisture levels, integrating cloud storage for seamless data management, developing AI/ML models to regulate water release, implementing hardware solutions to execute AI algorithms, designing PCB boards for efficient system integration, creating a user-friendly system maintenance app, and implementing an alert system for timely notifications. The aim of this challenge is to develop a scalable and sustainable solution that revolutionises water management in agriculture, ensuring optimal crop growth while conserving valuable resources. Participants were encouraged to think creatively and push the boundaries of innovation to address the pressing issues facing modern agriculture.

**Challenges and Themes:**

In the ever-evolving landscape of agriculture, precision farming stands as a beacon of innovation. At the heart of this movement lies the transformative power of Internet of Things (IoT) technologies, reshaping traditional agricultural practices. By integrating smart sensors, data analytics, and connectivity solutions, IoT opens doors to real-time monitoring and management of crucial parameters for crop health. Through the fusion of hardware and software expertise, participants will explore the forefront of innovation, contributing to the evolution of **IoT in Agriculture.**

By empowering farmers with insights into soil conditions, water usage, pest control, and overall crop health, these IoT applications pave the way for informed decision-making. The hackathon served as a platform for collaboration and creativity, addressing critical challenges faced by the farming community. As participants delve into this dynamic field, they embark on a journey to revolutionise agriculture, shaping a future where technology and sustainability converge for the greater good.

**Judging Criteria:**

In Round 1, participants were evaluated based on their innovation, presentation skills, integration of components, electrical checks, and the size of their PCB design. Each criterion held a weight of 5 marks, emphasising the importance of creativity, technical prowess, and attention to detail in this initial phase.

Moving forward to Round 2, the stakes were raised as participants faced a more comprehensive assessment. Here, innovation and logic building took centre stage, each carrying a weight of 10 marks, reflecting the competition's commitment to pushing the boundaries of agricultural technology. Additionally, the completion of tasks, project development, documentation, and final output were meticulously scrutinised, with each criterion holding a significant weight of 10 marks.

With these criteria in place, the hackathon aimed to foster a spirit of innovation, collaboration, and excellence among participants as they strived to develop cutting-edge IoT solutions for precision farming. As the event unfolded, the judging process promised to be both rigorous and rewarding, highlighting the potential for technology to revolutionise the agricultural sector and address its most pressing challenges.

**Winners and Prizes**

**Winner: Team LED (Hindustan Institute of Technology & Science, Kelambakkam, Tamil Nadu) (Prize: ₹50000)**

**First Runner-Up: Team Agro-Technoticians (Shri Vile Parle Kelavani Mandal's Dwarkadas J. Sanghvi College of Engineering, Mumbai) (Prize: ₹30000)**

**Second Runner-Up: Team Cloud Crop (Jain College of Engineering (JCE), Belgaum, Karnataka) (Prize: ₹20000)**

**Conclusion**

The IETE-ISF National Hardware Hackathon "Unplugged 1.0" held at Dwarkadas J Sanghvi College of Engineering stands as a testament to the boundless creativity and technological prowess within the academic and engineering communities of India. With its inaugural edition, the event not only broke new ground in providing a dedicated platform for hardware innovation but also showcased the collaborative spirit and resilience of the participating teams. The successful execution of the hackathon, from the meticulous planning by the organizing committee to the enthusiastic participation of teams from across the nation, reflects the growing importance of hands-on, practical learning experiences in shaping the future of technology. This inaugural hackathon not only provided a dynamic platform for hands-on learning but also created lasting connections among participants. As the event's legacy takes root, it sets a high standard for future editions, promising continued advancements in hardware technology through collective ingenuity.

**Outcomes**:

- The IETE-ISF National Hardware Hackathon "Unplugged 1.0" showcased India's engineering talent in tackling agricultural challenges through innovation.

- Dr. Hari Vasudevan and Prof. Amit Deshmukh's presence at the inauguration highlighted the institution's commitment to fostering a culture of technological innovation.

- Participants were challenged to integrate hardware and software expertise to revolutionize precision farming, addressing critical challenges faced by the agricultural sector.

- Team LED from Hindustan Institute of Technology & Science emerged as the winner, demonstrating the potential of IoT solutions in agriculture with their innovative project.

- "Unplugged 1.0" not only provided a platform for hands-on learning but also fostered lasting connections among participants, setting a high standard for future editions of the hackathon.

**Photographs from the event:**



*Expert panel evaluates Round 2 KiCad designs.*
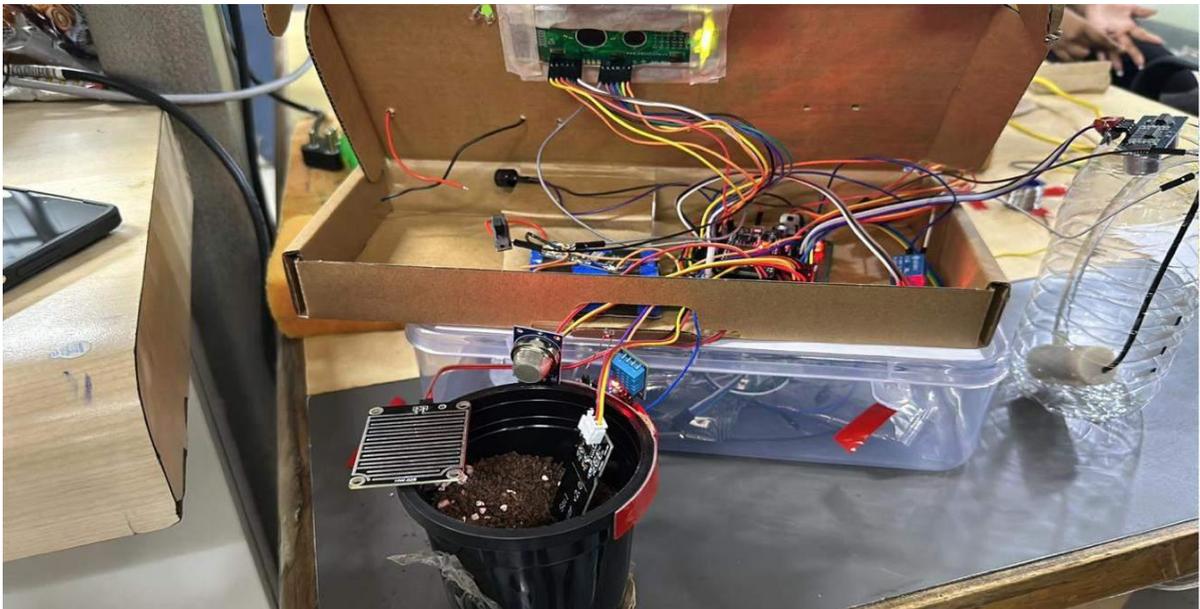


*Displayed is a project crafted by our participants, showcasing innovation and creativity.*
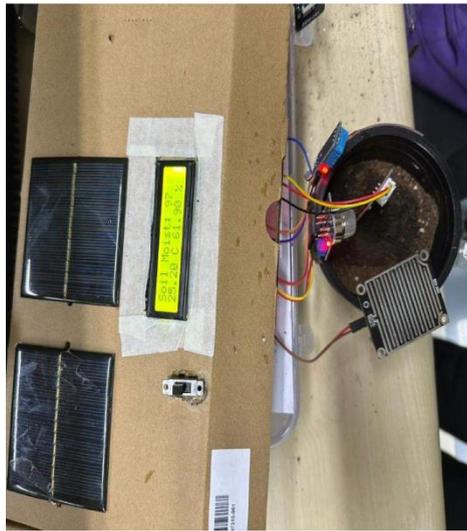
*Value depicting soil moisture readings.*





*Winners of UnPlugged 1.0 posing with esteemed faculty members.*

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Dr. Sanjay B. Deshmukh                    Dr. Anuja Odhekar                    Prof. Amit A Deshmukh

Faculty Co-Ordinator, UnPlugged 1.0       Branch Counsellor IETE-ISF              Prof and Head,

Assistant Professor, EXTC Dept.        Assistant Professor, EXTC Dept.        Dept. of EXTC Engineering

# TREK TO SINHAGAD FORT



**Faculty Members**: Prof. Amit A Deshmukh Dr. Rajendra Khavekar, Prof. Prasad Joshi, Dr. Sunil Karamchandani

Date of the Session**: 29th October, 2023 No. of Participants: 40

Objectives of the activity:

● Strengthen the bonds by engaging in a physically challenging and adventurous activity, promoting teamwork, and enhancing mutual trust.

● Offer participants an exciting and fun experience to break away from the monotony of their daily routines and encouraging participants to stay fit and maintain their health.

Contents:

The expedition commenced with an early morning gathering at the designated rendezvous point, setting the stage for an unforgettable adventure. As the trek unfolded, participants embarked on a journey through enchanting trails, enveloped by the breath-taking scenery of the surrounding countryside. The Sinhagad Fort trek presented each participant with an opportunity to challenge their physical limits, while simultaneously fostering a sense of camaraderie and unity.

As we ventured on, the trek facilitated open dialogues, shared experiences, and the exchange of insights. Faculty members and non-teaching staff generously shared their wisdom, experience, and guidance with the students, creating a symbiotic mentorship dynamic. These interactions transcended conventional roles, paving the way for a more inclusive and supportive academic environment.

A pivotal component of the trek's success was the generous sponsorship by Cloud 9 Energy Drink. Throughout the expedition, this thoughtful partner provided refreshing beverages and nourishment to participants, ensuring their sustained energy and well-being. Cloud 9 Energy Drink's support not only invigorated the trek but also underscored the significance of fostering such collaborations in the academic and corporate world. The event was further enriched by thoughtfully integrated team-building

activities and games. These activities were thoughtfully placed along the trek's route and aimed to promote teamwork, trust, and cooperation. They challenged participants to work together to surmount obstacles, further enhancing the sense of unity and collaboration.

In conclusion, the IETE - ISF Committee's trek to Sinhagad Fort on October 29, 2023, was nothing short of a resounding success. It realized its multifaceted objectives, from nurturing unity and physical fitness to fostering mentorship and guidance within the college community. The trek's breath-taking backdrop, provided by the stunning natural scenery, served as the perfect canvas for these invaluable interactions and experiences.

Heartfelt gratitude is extended to all participants, including faculty members, non-teaching staff, and students, whose enthusiasm and active participation made the event unforgettable. We reserve special thanks for Cloud 9 Energy Drink for their invaluable support, reminding us of the significant outcomes that collaborations can bring to academia.

With the resounding success of this trek, we look forward to organizing more such events in the future, continuing to fortify the bonds within our college community and a culture of active living and togetherness. These events, as exemplified by the Sinhagad Fort trek, stand as testaments to the collective strength and unity of our college community.

Outcomes:

● The event successfully fostered a stronger sense of unity and collaboration among the participants. The shared experience of conquering the trek's challenges created lasting bonds among the participants.

● The trek encouraged a culture of active living and physical fitness within the college community. Participants were motivated to challenge their physical limits, and this awareness of the importance of fitness is likely to have a lasting impact on their overall well-being.

● The inclusion of team-building activities during the trek encouraged problem-solving and teamwork among participants. These activities strengthened participants' ability to collaborate effectively and address challenges collectively.

Photographs from the Event:



*Participants and Faculty embark on a trek to Sinhagad Fort, fostering camaraderie amidst nature's majesty.*

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Dr. Anuja Odhekar                                                                            Prof. Amit A Deshmukh
Branch Counsellor, IETE-ISF                                                                          Prof and Head,
Assistant Professor, EXTC Dept.                                                     Dept. of EXTC Engineering

## **Alumni Meet**



 Date of the event: 10th of February 2024
Participants: Third Year Students
Number of Participants: 110

**Objectives of the activity:**

● Offering students, the chance to engage with a diverse array of industry professionals who have successfully graduated from the college itself, gaining valuable insights into their unique experiences and perspectives.

**Content:**

The Alumni gathering took place on February 10, 2023, in the conference room, hosted by the Department of Electronics and Telecommunication at DJSCE. The event commenced with DJSCE EXTC Alumni connecting virtually from their workplaces or universities abroad, while those within India were welcomed to the college.

Dr. Amit Deshmukh, our Head of Department, extended a warm welcome to the audience. Subsequently, alumni shared diverse experiences, engaging in a lively Q&A session facilitated by our IETE-SF team members.

The primary objective of this event was to provide students with an opportunity to seek advice and interact with alumni who bring a wealth of job experience from various industries. The discussions encompassed a wide range of life and career experiences, and here are some noteworthy highlights.

● Komal Ajmera graduated in 2015 and is currently working as senior manager at Morgan Stanley. She shared us with her journey and valuable experience in the industry.

● Hardik Makwana graduated in 2005 shared us with his experience in capital consultancy industry.

● Darshit Sankhesara graduated in 2013 currently an Associate Director – Sales Finance at FMCG – Kellogg India conversed how he changed domain and made his existence and excelled.

● Nirav Sampat graduated in 2013 is currently working as SEO specialist cleared queries and doubts

of students wanting to join the same field.

● Pratik Sankhe graduated in 2019 currently working as Product Manager shared us with the skills required to enter the field of product managing.

● Shrushti Jain (2023 passed out) – Currently working as Analyst at Deloitte, Suraj Surendhan (2023 passed out) – Currently working as Senior Analyst at Ernst & Young shared us with the road map they followed respectively and advised students to avoid mistakes they committed.

Apart from this many graduates, pursuing masters abroad shared us with their journey and how they can now relate to the topics taught in the college. They emphasized on time management and consistency which helped them a lot in their journey.

Outcomes:

- Enhanced student engagement: The alumni gathering provided students with a platform to engage directly with successful graduates, fostering a sense of connection and inspiration within the student body.

- Valuable insights and advice: Through the diverse experiences shared by alumni across different industries, students gained valuable insights into career paths, skill development, and industry expectations, helping them make informed decisions about their own futures.

- Networking opportunities: The event facilitated networking between current students and alumni, allowing students to establish connections with professionals in their field of interest, potentially opening doors for internships, mentorship, or future job opportunities.

- Real-world application of education: Alumni shared how their college education prepared them for the challenges and opportunities they encountered in their careers, emphasizing the importance of practical skills, adaptability, and continuous learning.

- Motivation and guidance: Hearing success stories and overcoming challenges from alumni inspired and motivated students, while also providing practical advice on navigating the transition from academia to the professional world.

*Virtual alumni join us from afar in a display of enduring connection.*



*Alumni reflect on their experiences, sharing insights and memories.*

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Prof. Ranjushree Pal               Dr. Anuja Odhekar              Prof. Amit A Deshmukh

Alumni Co-Ordinator            Branch Counsellor, IETE-ISF           Prof and Head,

Assistant Professor, EXTC Dept.      Assistant Professor, EXTC Dept.      Dept. of EXTC Engineering

# Industrial Visit Report to GMRT



Expert: Mr. Yogesh Wadadekar
Expert Affiliation: Mr. Yogesh Wadadekar, Teaching Staff at Giant Metre Radiowave Telescope (GMRT), Pune.
Date:2nd February,2024
Participants: 70+ Participants

Objectives:
- Supplement academic curriculum for TE students through practical exposure to cutting-edge technology in radio astronomy.
- Provide an opportunity for students to explore the technical specifications and operational intricacies of the GMRT Observatory.
- Stimulate curiosity and deepen understanding of astrophysics by witnessing real-world applications of theoretical concepts in radio astronomy.

**Introduction**: An industrial visit was organized by the DJS IETE-ISF to the Giant Metrewave Radio Telescope (GMRT) Observatory on 2nd February, 2024. The visit aimed to supplement the academic curriculum for the TE students and serve as an academic excursion, providing an opportunity to explore cutting-edge technology in radio astronomy.

Overview of GMRT Observatory: The GMRT Observatory, affiliated with the Tata Institute of Fundamental Research (TIFR) and managed by its National Centre for Radio Astrophysics, is a significant installation in the field of radio astronomy. Constructed under the direction of Govind Swarup, a pioneer of radio astronomy, between 1984 to 1996, GMRT stands as the third radio telescope after the Kalyan Telescope and Ooty Radio Telescope.

**Technical Specifications:**

1. Antenna Array: GMRT comprises an array of 30 fully steerable antennas, each with a 45m diameter, 12m length, and weighing 110 tonnes. The antennas are arranged in a Y-shape configuration.

2. Operating Frequency Range: The operating frequency range of GMRT is between 130-1450MHz. Technology: GMRT employs very long baseline interferometry (VLBI) technology. However, radio-frequency interference (RFI) poses a natural impediment to its functioning.

3. Observing Bands: GMRT utilizes 5 observing bands centered at 150MHz, 235MHz, 327MHz, 610MHz, and an L-Band extending from 1000-1450MHz.

4. Signal Processing: Signals received by each antenna undergo modulation using optical diodes, followed by signal conversion, amplification, and filtering. Data is processed using APGI software algorithms and bandpass filters, with RFI rejection techniques.

5. Image Processing: Received signals are converted into images using astronomical image processing systems (AIPS), enabling astronomers to analyze astronomical phenomena.

6. Mechanical Structure: The antenna's mechanical structure comprises mild steel (MS) and wire mesh on the antenna surface, with strategically placed gaps to allow high-frequency waves to pass through and low-frequency waves to reflect and focus on the feed.

7. Server Room: The server room houses equipment such as up converters, antenna communicators, server racks, and motor drivers for 6HP motors. Previous archival legacy versions of server rooms are preserved, showcasing advancements in technology over time.

**Conclusion:** The industrial visit to GMRT provided TE students with invaluable insights into the field of radio astronomy and the advanced technology utilized in telescopic observations. Witnessing the operation and technical intricacies of GMRT has undoubtedly enriched their academic learning and stimulated curiosity in the realm of astrophysics.

This report encapsulates the key aspects of the industrial visit to the GMRT Observatory, highlighting its significance in advancing our understanding of the universe through radio astronomy.

**Outcomes:**
● Deeper understanding of radio astronomy.
● Exposure to advanced technology.
● Practical application of academic concepts.

**Pictures of the Event:**



*Miniature display of the Giant Metrewave Radio Telescope (GMRT) array.*



*Students and experts gather at GMRT, Narayangaon for collaborative learning and research.*

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Dr. Anuja Odhekar                                                                               Prof. Amit A Deshmukh

Branch Counsellor, IETE-ISF                                                                            Prof and Head,

Assistant Professor, EXTC Dept.                                                      Dept. of EXTC Engineering

# Workshop on MATLAB Programming
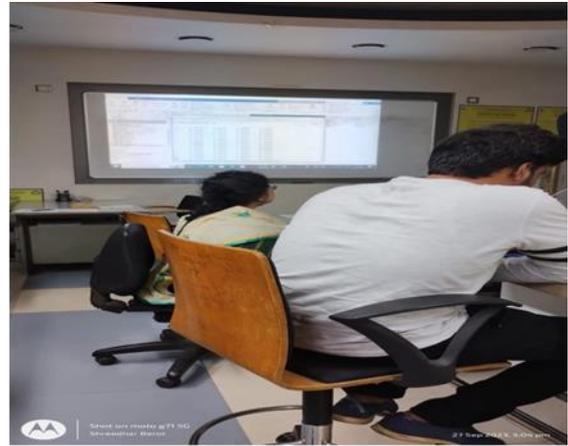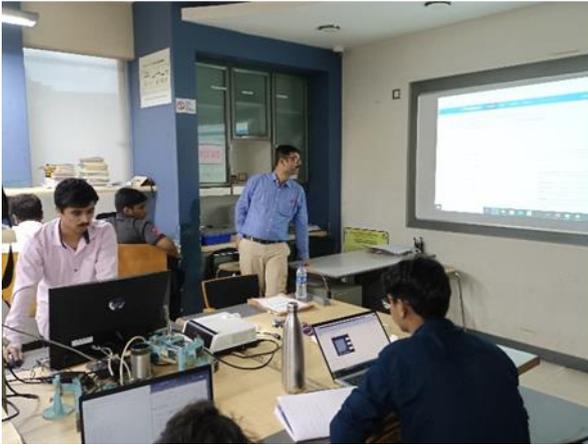


Expert: Dr. Venkataramanan V. and Prof. Ranjushree Pal
Expert Affiliation: Assistant Professors, Dept. of EXTC Engineering, Dwarkadas J. Sanghvi College of Engineering, Mumbai.
Date: 25th and 27th September,2023
No. of Participants: 80 participants

Objectives of the activity:
● To make the students familiar with a new software.
● To make use of the MATLAB Programming commands to problems in different mathematical subjects.

**Contents:**
MATLAB, an acronym for MATrix LABoratory, stands as a magnificent testament to the realm of computational prowess. This formidable software, an ingenious creation by the visionary Cleve Moler, was initially conceived with educational aspirations in mind. However, it has since evolved into an unrivaled titan in the realm of numerical analysis software, hailed as the crowning jewel in the repertoire of mathematical and graphical subroutines.

As part of its noble mission to enlighten and empower the curious minds of students, IETE-SF orchestrated two splendid "Workshops on MATLAB Programming," a captivating two-day odyssey into the heart of MATLAB's brilliance. These sessions, held on the 25th and 27th of September in 2023, were nothing short of enlightening, interactive symposia that set ablaze the attendees' curiosity. The workshop's itinerary, a meticulously crafted tapestry, unfolded in a series of captivating segments. It commenced with a gracious overture by Dr. Prof. Venkataramanan, a luminary in his own right, who led the novices into the labyrinthine world of MATLAB. He skill fully guided them through the intricacies of launching the software, imparting profound wisdom about every nook and cranny of the Workspace Window. In the pursuit of fluency, the students were introduced to fundamental commands like 'clc,' an incantation to clear the command window, and 'eye,' the sorcerer's spell that conjures an identity matrix on the screen. Dr. Venkataramanan, the maestro of MATLAB, emphasized the software's capricious nature, revealing how maintaining proper case sensitivity is the key to an error-

free incantation.

As the sun dawned on the second day of this enthralling MATLAB workshop, the students gathered with anticipation, ready to embark on another day of intellectual exploration. This time, they were under the tutelage of Prof. Ranjushree Pal, a luminary poised to unveil deeper mysteries. The day's curriculum was enriched with a profound discussion on data analysis, which played a pivotal role in unraveling the intricacies of MATLAB's capabilities.

With eloquence and precision, Prof. Pal commenced the day's proceedings by deciphering the arcane lexicon of sampling frequency and sampling rate, shedding light on the conversion of continuous time signals into discrete counterparts. The unit of sampling frequency, measured in samples per second, served as the compass guiding their journey into the world of data analysis.

As the session progressed, the professor masterfully manipulated frequency values, painting vivid graphs that danced to the cadence of change. Analog signals, painted with ten cycles of vibrancy, graced the canvas of understanding, bridging the gap between theory and modern technological relevance. The students were introduced to the essence of sampling frequency and the enigmatic 'Nyquist Frequency,' unveiling the artistry of crafting a time vector that befits signal generation. The tapestry of knowledge unfurled further as the rules of 'Shifting,' 'Scaling,' and 'Folding' were elucidated, their conditions demystified with utmost clarity. Every line of code, every word of wisdom, flowed like a crystal-clear stream of understanding, leaving no room for ambiguity. The

professor, a true maestro, conjured a rectangular pulse at the temporal epicenter, a feat that resonated with the students. The revelation continued with the unveiling of the 'sinc' formula, a musical note in the MATLAB symphony, and the art of frequency discovery through the mystic 'Fast Fourier Transform.' The students were enthralled by the visual symphony of three distinct signals, accompanied by the whimsical presence of noise. This discussion seamlessly transitioned into the realm of data analysis, as MATLAB's powerful analytical tools were revealed.

In essence, the "MATLAB: Multiverse of Utilities" left an enduring impact by equipping students with essential skills, broadening their horizons, and fostering a culture of innovation and collaboration. These workshops not only enriched individual lives but also contributed to the broader educational ecosystem, paving the way for a brighter and more technologically adept future.

Outcome:

- Academic Empowerment: The workshops expanded students' academic toolkit by showcasing MATLAB's potential in data analysis and IoT. This insight bolstered their research capabilities and data-driven decision-making skills, enhancing their academic prowess.
- Career Opportunities: Expertise in MATLAB is a prized asset, particularly in industries such as engineering, data science, and research. The workshops served as a gateway to prospective career opportunities, amplifying participants' competitiveness in the highly competitive job market.
- Fostering Innovative Thinking: Introducing students to IoT concepts and data analysis through MATLAB ignited their imaginative and inventive faculties. As a result, they departed from the workshops, invigorated and motivated to seek fresh, ground breaking solutions to real-world challenges, with MATLAB as a pivotal tool in their arsenal.

**DAY-1**



**DAY-2**



**Photographs from the Event:**



*Day 1: Introduction to MATLAB - Laying the Foundation*

*Day 2: Advancing with MATLAB - A glimpse into the session.*



*Candid moment: Participants engage with experts during the session.*

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Dr. Anuja Odhekar                                                                                   Prof. Amit A Deshmukh

Branch Counsellor IETE-ISF                                                                                 Prof and Head,

Assistant Professor, EXTC Dept.                                                         Dept. of EXTC Engineering