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Department of Instrumentation and Control

MAPAN

THE MEASURE OF PROGRESS

Issue 18, September 2022

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College Vision & Mission:

Vision

To be globally renowned institute for imparting quality education & to develop women leaders in engineering & technology.

Mission

To develop women professionals who are academically & technically competent with strong professional ethics.

Dept. Vision & Mission:

Vision

To develop the department as a center of excellence in Instrumentation & Control Engineering.

Mission

To develop students with a strong foundation of Instrumentation & Control Engineering.

To develop logical thinking ability, analytical skills, soft skills & create awareness about the professional ethics.

To provide a conducive environment to the students for higher studies & research.

From HOD's Desk – Dr. Anagha Panditrao

Following the trend of previous years, the Instrumentation Department is consistently active in curricular, co-curricular and extracurricular activities. I am glad to share some of the key achievements in this eighteenth issue of our department newsletter "MAPAN". This year the major challenge for students and faculty was the transformation from online to hybrid and finally to offline mode of teaching learning process. This transition was smoothly carried out by faculty and students. Majority of faculty and students completed various online certification courses, FDPs, workshops to enhance their respective skillset. On the research front, some research papers have been published in renowned journals and few patents are on the verge of being granted. The patent by Dr. Atul Joshi on "Double Focus Spot pick-up for Acoustic Signal" is granted in April 2022. This year the Forbes Marshall best project and Kedar Tumne Innovative project award were bagged by the project titled "IoT based Automobile Collision Avoidance and Safety System". The students with faculty support actively participated in Innovation Council related activities and competitions. I congratulate the participants and winners for their active involvement and achievements in multifaceted events. Wishing us all a similar kind of growth in coming year.



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Workshops and Faculty Development Programs



'Role of Statistics in the Research Methodology' expert session by Dr. Revati Shriram for ME student of VES Institute of Technology, Chembur, Mumbai.

Dr. Nivedita Daimiwal served as a expert for FDP on Medical Imaging: Special Topics in Magnetic Resonance Imaging organized by Orchid College of Engg & Technology, Solapur. Topic for the sessions were 'MR Signal Detection' & 'Spectral Domain Techniques for Real Time Signal Processing'.

'Research Paper Writing for Undergraduates' expert session was arranged by Dr. Vikas Hajare, at ICON Students Chapter of Dept. of Instrumentation & Control Engg of MVPS's KBT College of Engg, Nasik, in association with IET Nasik Local.

Dr. Revati Shriram served as a expert for FDP on Development of Machine Learning Techniques for Solving Real World Problems organized

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by NIT Warangal, Sponsored by MeitY GOI. Topic for the session was '*ML in Real Life for Health Care Domain*'.

Dr. Anagha Panditrao, Dr. Nivedita Daimiwal, Dr. Swati Madhe, Dr. Vaishali Upadhye & Prof. H. T. Patil participated in the FDP on *'Inculcating Universal Human Values in Technical* Education'.

Dr. Anagha Panditrao completed the Coursera Course on 'Foundations: Data, Data Everywhere'.

Dr. Vaishali Upadhye completed the Coursera Course on *'Machine Learning for All'*.

Dr. Dipali Ramdasi complete the NPTEL Course on 'Introduction to Industry 4.0 & IIoT'.

Dr. Revati Shriram completed the NPTEL Course on 'Accreditation for Undergraduate Engg Programme' & ARPIT Course on 'Leadership & Governance in Higher Education—Level 2'. Dr. Anagha Panditrao, Dr. Vaishali Upadhey, Dr. Swati Madhe, Prof. Yashwant Adhav, Prof. H. T. Patil & Prof. Sheetal Katwe attended FDP on '*New Pedagogies*'.

Dr. Dipali Ramdasi & Prof. Pratima Kulkarni attended series on 'Impact Lecture Series Sessions on IPR' & 'Impact Lecture Series on Innovation and Technology'.

Prof. Pratima Kulkarni completed the 'Innovation Ambassador Training (MoE) - Basic Level', organized by MoE's Innovation Cell & AICTE.

Dr. Anagha Panditrao has attende the ATAL FDP on 'Sensors Technology'.

Dr. Dipali Ramdasi & Prof. Pratima Kulkarni attended ATAL FDP on 'Advanced Sensor Technology for Efficient Biomedical and Energy Management in Smart Cities'.

Dr. Vaishali Upadhye attended ATAL FDP on 'Advances in Control Systems and Sensor Technology' & 'Automation using PLC Programming'.

Dr. Swati Madhe attended ATAL FDP on 'Advanced Industrial Automation'. Dr. Vikas Hajare has attended a workshop on 'Syllabus Formation for Instrumentation and Control—2019 Course' by SPPU.

Prof. Pratima Kulkarni has attended STTP on 'Recent Trends'.

Dr. Vaishali Upadhye attended workshop on 'Advanced Industrial Automation Training for Engineering Education and Research'.

Dr. Nivedita Daimiwal & Dr. Revati Shriram has attended FDP on 'Administrative Capacity Building'.

Dr. Revati Shriram has attended the ATAL FDPs on 'Instrumentation, Signals and Images for the Evaluation of Physiological Systems' & 'Sustainable Change Management in Technical Institute for NEP -2020 Implementation'.

Dr. Revati Shriram has attended FDP on 'Intellectual Property Rights (IPR) & Advance Learning in Research & Innovation'.

Issue 18, September 2022 Department Toppers of Year 2021 - 2022 Ms. Tanisha Gite (9.13/10) Ms. Sayali Kulkarni (9.27/10) Ms. Sayali Kulkarni (9.12/10) Ms. Madhu Athanikar (9.02/10) Ms. Madhu Athanikar (9.02/10) Ms. Madhu Athanikar (9.02/10) Ms. Madhura Deshpande (8.91/10) Ms. Madhura Deshpande

Best Outgoing Student of the Year 2022

Dipika Kishor Deogadkar, is the Best Outgoing Student for the Year 2022. A very sincere, polite and hardworking student with excellent academic record. In her four-year engineering she has excelled in academics as well as co-curricular and extra-curricular activities.

She bagged the Eaton Pratibha Scholar award in the year 2021. She is also a recipient of Lila Poonawalla Foundation Scholarship. Process Automation always intrigued her. She decided to take her interest ahead and completed internship in Suez water technologies. With successful completion of two projects in the internship period, she got the pre-placement offer in Suez. She has also completed her mini project in the same domain. Her Final Year B. Tech Project was Automatic Door Opening System using PLC sponsored by IFM Electronics. She has proactively completed certification of online courses by NPTEL and Coursera.

Dipika always participated actively in the co-curricular and extracurricular activities. To name a few, she was a team member of Department Newsletter – MAPAN, Robotics Teaching Volunteer at Bhumi, and volunteer at Ignite Fest with Bhumi. She had volunteered in college technical and cultural events and also Completed 'Mentor to Go' virtual mentorship.



CongratulationsII Best Wishes to Dipika for her Future EndeavorsII

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Co-Curricular & Extra Curricular Activities

Innovative Business Idea Competition





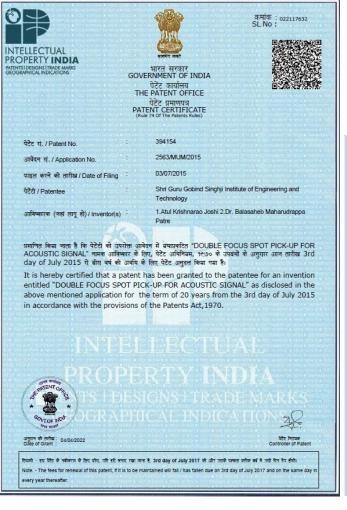
Best Class Award of 2021–2022 at College Annual

Cultural Event—GANDHAR 2022

(Final Year B. Tech Instrumentation and Control)



Patent Granted



Title of the Patent Granted by Indian Patent Office: Double Focus Spot Pick-Up for Acoustic Signal

Name of Inventors:

- 1. Atul Joshi
- 2. Balasaheb Patre

Double Focus Spot Pick-up is an apparatus which captures the acoustics signals originating from an excited engineering component. The apparatus comprises an acoustic to electric converter (pick-up) fixed at the internal focus of the ellipsoid. The engineering component under test is to be kept at the other focus outside the ellipsoid. The component under test is to be excited acoustically. Upon excitation of the component, it emits an acoustics signal. The acrostic signal is captured by the pick-up and processed further by a signal conditioner for extraction of the acoustic signature. The acoustic signature is used to detect faults in the component under test and reduces the quality

control time.



HEARTY CONGRATULATIONS DR. ATUL JOSHI !

Patents Published

PATENTS PUBLISHED

Ms. Arya Dethe, Ms. Shruti Dharmadhikari, Ms. Harshada Paralkar & Dr. Atul Joshi, 'System of Detecting Flatness on Wheels of Railway Vehicle and Method Thereof'.

Ms. Vaidehi Deoskar, Ms. Pooja Kulkarni, Ms. Tejaswini Dengade & Dr. Revati Shriram, 'System for Mental Workload Assessment and Method Thereof'.

Ms. Radhika Nibandhe, Ms. Rashmi Atre, Ms. Akshada Shinde, Ms. Achal Gularia & Dr. Revati Shriram, 'System Non-Invasive System for Detection of Parkinson's Disease and Method Therefor'.

CONGRATULATIONS !! .. AND THE BEST WISHES!!

Forbes Marshall Project Award &

Kedar Tumne Project Award 2021–2022

Third Year B.Tech (Instrumentation & Control) students Lokita Bhoge, Binita Jiby, Hrithika Pembarti, Sakshi Phadatare were the winner of a Kedar Tumne College Level competition and Forbes Marshall Project Award. Work was carried out on '*IoT Based Automotive Collision Avoidance and Safety System*' and Prof. Dipali Ramdasi extended her guidance for the said final year project.

Road accidents have been a major cause of concern in India and also worldwide. Every developing country has a major issue of maintaining roads, after every monsoon, the conditions of roads worsen which leads to unsafe roads and becomes the cause of increasing accidents. According to the Global status report on road safety, the total number of deaths caused due to road accidents has leveled out at 1.3 million a year. India faces the highest number of accidents and accidental fatalities in the world. Due to a variety of factors driving becomes unsafe. One of the major reasons, among them, is due to potholes, humps and collisions between vehicles. To take care of this issue, project exhibits the thought and execution of an Automotive Collision Avoidance and Safety system utilizing Internet of Things (IoT). The purpose of the project was to sense the object distance, pothole distance and the hump distance using an ultrasonic sensor to check if the values obtained are in normal condition. If they reach beyond the specified limit, then it alerts the driver using a Visual alarm (LED), an Audio alarm (Buzzer) as well as a message alert will be sent to the person. It also displays the object distance from the vehicle and shows respective alerts on the LCD Display. The system also has a provision for locating the position of an accident. This is achieved by adding a GPS and GSM module in the system. The system has provision for Vehicle-to-Vehicle communication (V2V) for better data transmission which is established using Li-Fi Technology.

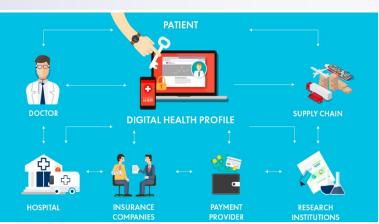


Hearty Congratulations to the Winning Team & Project Guide!

Blockchain In Healthcare

Blockpharma Enables Drug Traceability

Blockpharma, a French startup, develops blockchain-based drug traceability and anticounterfeiting solution. The Blockpharma app allows the consumer to instantly check the authenticity of the drug box. BlockPharma integrates with multiple information systems and stores authenticated data on medicines stored on Crystalchain, the startup's private blockchain. Upon detection of a falsified medicinal product, the laboratories immediately alert BlockPharma which then adds the medicine to

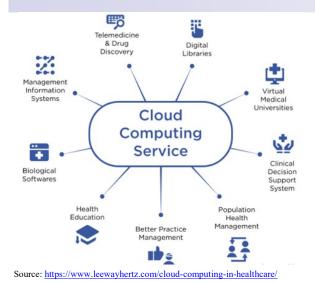


Iryo Moshi provides a Practice Management Tool

Slovenian startup Iryo Moshi provides a modern practice management tool for private healthcare providers. The startup specializes in blockchain, interoperability, open EMR, consumer relationship management (CRM) areas, and provides an integrated digital healthcare platform. The platform features automated appointments, invoicing, clinical data storage and management, and digital documents and forms. The solution is cloud-connected and also is compliant with General Data Protection Regulation (GDPR) and Health Insurance Portability and Accountability Act (HIPAA).

Source: https://www.startus-insights.com/innovators-guide/top-10-healthcare-industry-trends-

Cloud Computing in Mental Health Monitoring



Radmol AI improves Access to Healthcare

Irish startup Radmol AI utilizes the latest advancements in cloud computing, data analytics, blockchain, and AI-based technology. It provides a platform for connecting patients and healthcare providers to local and global expert radiologists on-demand. The startup's technology enables accessing reports from anywhere, at any time. It creates solutions that democratize access to healthcare, enabling patients, physicians, and providers.



Source: https://mental.jmir.org/2021/12/e32948

Medified offers Mental Health Monitoring

Finnish startup Medified provides cloud-based dynamic mental health monitoring software. The software as a service (SaaS) platform aids physicians to monitor patients in real-time, helping patients get the right treatment faster and more efficiently. The software analyzes clinical data and provides valuable clinical insights, enabling remote, digital healthcare services with an interactive dashboard. It allows patients to capture and communicate daily mood and well-being to provide healthcare professionals self-treatment information in realtime.

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Awards Received



Pratibha Excellence Award by Eaton, is a unique program that aims at encouraging multifaceted women engineering talent in India through educational scholarships of prize money 60,000 INR. Eaton Pratibha Excellence Scholarship is awarded to three girls every year pursuing engineering from five different reputed colleges all over India.

In Year 2021–2022, Ms. Dipika Deogadkar and Ms. Indraja Patil from Dept of Instrumentation and Control were the recipients of Pratibha Excellence Award.

Congratulations Dipika & Indraja!!

Ms. Kalyani Dalvi, Ms. Aradhana Bakare, Ms. Sharvari Deshpande & Ms. Shruti Dalvi bagged Special Mentioned Prize at Global Event Tech Challenge 2022 at Johnson Controls. Team worked on the title 'Design and Control Mechanism for Façade' and Dr. Atul Joshi served as a mentor for winning team.

Hearty Congratulations to all the Team Members!!



ISA Foundation Scholarship Award



This year, Ms. Indraja Patil bagged the prestigious ISA Award. International Society of Automation (ISA) Educational Foundation Scholarship Award with a prize money of 3000 USD. ISA Educational Foundation Scholarship is awarded to ten or eleven people every year across the world and I'm extremely proud to be one of the recipients. Dr. Swati Madhe is the Faculty Advisor of CCOEW ISA Student Chapter.



Congratulations Indraja!!!

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Placement & Internships for year 2021 - 2022



SUMMER INTERNSHIPS

In the AY 2021—2022 eighty nine students (S.Y., T.Y. and Final Year B.Tech) from the department have completed the Industrial/Hospital Internship of four or more weeks.

- Indian Oil
- Stealthmode
- Unitech Automation Pvt
 Ltd
- Stretto
- Buumer
- Seuz
- Propix
- Amazon
- Dynomerk Conttols
- Santron Meditronic
- Systech
- Force Motor
- Techport solutions
- Safe air

- Forbes Marshall,
- Wipro-Pari
- ISMT
- FM Electronic
- Accolade,
- Tata technologies,
- Logicon Technosolutions Business Web soltions
- SPA Instruemnets,
- Concord Technologies
- Shree Industries
- Mikro Innotech
- Goldman sachs
- Shriyantra Controls pvt Ltd
- Vaspa Engg Service

PLACEMENTS

- Baxter: Rishika L
- Ather Energy: Binita J
- Schneider Electric: Isha P, Aadnya B
- Deloitte: Yugashree B, Tanmaye C, Vaishnavi G
- Addverb: Saniya G, Neha P, Sayali K
- JCB: Sampada S, Vaishnavi K, Radhika B
- Aditya Birla Group: Sushmita S, Shreya A, Vaishnavi T, Pradnya K, Gouri G, Lokita B, Sakshi B
- Ford Motor: Madhu A
- Suez Waters: Maithili D, Dipika D, Anushka G
- Honeywell: Vishakha K. Snehal K, Deepali D, Gargi K,
- Nishigandha, Sanaya M, Trupti K, Ankita G, Swarali S
- Linde: Poonam N, Tanisha G, Aditi J, Tanishqa K
- Demanic: Yashshashri D, Hritika P, Rutuja M, Gauri P,
- Pratiksha P, Rohini J
- Johnson Controls: Rutuja K, Devika G, Roshni D
- Tox: Rutuja D, Uthkarsha G
- Amazon: Arati J







ADITYA BIRLA GROUP

Technologies





Deloitte.

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Publications by Students & Faculty in 2021 - 2022

Research is formalized curiosity. It is poking and prying with a purpose.

Sumedha Mujoo, Anjali Sharma, Kamini Gaikwad, Swati Madhe, Atul Joshi, Subrahmanyam Sista, Mamta Khatape, "*Smart Irrigation System using IoT based Control Valve*", Asian Conference on Innovation in Technology, ASIANCON 2021, August 2021, Pune.

https://doi.org/10.1109/ASIANCON51346.2021.9544988

Nivedita Daimiwal & Revati Shriram, "Case Study Based Learning for System Development", Graduate Research in Engineering and Technology (GRET), Vol 1, Issue 8, Article 10.

https://doi.org/10.47893/GRET.2022.1150

Yashwant Adhav, Dayaram Sonawane & Chetankumar Patil, "Novel Micro Flow Sensor for Air Purge Method to Monitor the State of Charge for Lead Acid Battery", 4th International Conference omn Intelligent Circuits and Systems, IOP Publishing, 2327 (2022) 012004.

https://doi.org/10.1088/1742-6596/2327/1/012004

Anagha Panditrao, "Augmenting Student's Efficacy through Experiential Learning", presented paper in the National Conference on Pedagogy for Higher Education, 25th June 2022, Pune.

Pratima Kulkarni & Dipali Ramdasi, "Project Based Learning Technique for Holistic Development of Students", presented paper in the National Conference on Pedagogy for Higher Education, 25th June 2022, Pune.

Vaishali Upadhye, Swati Madhe & Atul Joshi, "Project Based Learning as an Active Learning Strategy in Engineering Education", presented paper in the National Conference on Pedagogy for Higher Education, 25th June 2022, Pune.

Dipali Ramdasi & Pratima Kulkarni, "Industrial Internship: An Experiential Learning Pedagogy for Outcome Based Education in Higher Educational Institutes", presented paper in the National Conference on Pedagogy for Higher Education, 25th June 2022, Pune.

Immersive Technology



The use of immersive technologies, such as AR/VR and MR, is on the rise in the healthcare sector. Applications for **VR in healthcare** vary from rehabilitation therapy and exposure therapy anxiety disorders to aiding in cognitive and physical rehabilitation. AR/VR also plays an important role in medical education. Immersive technologies also find applications in surgery, for instance for the perioperative projection of patient information, holographic images, and scans.

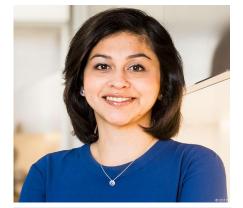
VRSANO develops a Brain-Computer Interface:

VRSANO is a US-based MedTech startup that develops a brain-

computer interface. Its technology combines VR, neurofeedback, and clinical hypnosis principles to optimize health outcomes. The startup's patented method pulls medical patients out of a state of distress by immersing them in a relaxing virtual world. It induces a psychophysiological state that helps patients with their mental health needs. The platform alleviates symptoms and improves long-term patient outcomes while lowering healthcare costs.

Rescape Innovation suports Patient Care: British startup **Rescape Innovation** develops immersive technologies to support patient care in both adults and children. The startup specializes in virtual reality (VR) distraction therapy to support pain and anxiety/stress management. The solution offers cystic fibrosis (CF) patients to view therapeutic documentaries, wherein they can travel among the planets in the solar system or experience surfing, skydiving, and other adrenaline-fueled activities. The startup's interventions reduce anxiety in patients.

Women Entrepreneurs



Neha Narkhede is an Indian American technology entrepreneur and the co-founder and former CTO of Confluent, a streaming data technology company. She cocreated the open source software platform Apache Kafka. Narkhede serves as a board member of Confluent. While working at LinkedIn in 2011, Narkhede created the Platform Apache Kafka, along with Jun Rao and Jay Kreps. They came up with the idea while on a project at the company and developed Kafka as an open source Platform. In 2014 she founded Confluent, a Palo Alto based startup, along with Rao and Kreps and decided to start Confluent as a B2B infrastructure company. In 2017 she co-authored Kafka: The Definitive Guide along with Gwen Shapira and Todd Palino which is about the technology that created Kafka. She and her team at Confluent raised \$125 million in 2019, bringing its total funding to \$206 million in 2019. And in April 2020, the company raised \$250 million bringing its total funding to \$456 million. Confluent as a company has filed for an IPO on June 1, 2021 and was valued at \$4.5 billion. Companies such as Goldman Sachs, Netflix and Uber use the platform for data driven purposes.

Source: Neha Narkhede (forbes.com)



Vani Kola is an Indian venture capitalist. She is the founder and managing director of Kalaari Capital, an Indian early stage venture capital firm. She was listed as one of the most powerful women in Indian business by Fortune India in 2014. Kola had a 22-year career in Silicon Valley. A serial entrepreneur, she was the founder and CEO of the e-procurement company RightWorks, selling the company to ICG after four years for \$657 million. She was then the founder and CEO of Certus Software. Kola returned to India in 2006, after her successful career as an entrepreneur in Silicon Valley, to start a venture capital firm in India, drawn to the growing Indian opportunity. Under Kola's leadership, the firm has grown to have US\$650 million in assets under management. Kola is the managing director of Kalaari Capital. She is a technology-focused early-stage investor and works with entrepreneurs to build global companies, leveraging India's domestic growth to create high growth enterprises. Kola has led investments in e-commerce, mobile services, education and healthcare. Some of her notable venture capital endeavors include: Dream11, Snapdeal, & Myntra.

Source:- https://vanikola.com/



Upasana Taku is one of the most successful women entrepreneurs who is not just the founder of Zaakpay but also co-founder of Mobikwik. Zaakpay provides service to solve the payment issues for eCommerce. And Mobikwik makes payment easier through mobile phones. In 2014, Mobikwik received an award called mBillionth Award South Asia in the category of mobile business. Seeing the internet issues in a small town, they launched a new app called Mobikwik Lite, the app work very well even in 2G speed. In 2015, Upasana did a partnership with Uber and launched the Mobikwik payment gateway, so that you can pay the Uber cost through the Mobikwik app. If we see her incentive idea, it is really making our life easier. On 8 November 2017, IDFC Bank shaked hand with Mobikwik digital Payment solution to launch a co-branded virtual Visa prepaid card for Mobikwik customers. In March 2017, Mobikwik became a big competitor of Paytm. Mobikwik also has an international pattern like GoDaddy and many others which help them comply with Indian payment regulation. According to the Mobikwik website, the company is backed by Tree Line Asia, American Express, and Marquee investors.

Source: https://wow.outlookbusiness.com/upasana-taku/

Department of Instrumentation & Control

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An autonomous Institute affiliated to Savitribai Phule Pune University



Faculty Editor: Dr. Revati Shriram revati.shriram@cumminscollege.in

Student Editors: Ms. Vaishnavi Nesarikar, Ms. Akruti Pagar & Ms. Shruti Laddha

Alumnae Corner

Dept of Instrumentation and Control is thankful to our alumnae for their support through out the last year. In the last year our department alumnae have helped us in many ways viz by conducting guest lectures and sharing their experiences about management, self discipline and for generous support towards the Bhaubij Nidhi.

We are always grateful towards the generous support extended by our department alumni in various way. We kindly request you to all to share your achievements and we will be glad to showcase them always! THANK YOU!!

We are proud of your accomplishments. We are confident that you will continue with even more successes... Best Wishes for the future !!

> ĸ Thank you for your support!



LLP



Website: www.aivara.in Email Id: shal dula Contact: (+91)-7720009340

Shalmali Kadu Medha Moorching r. Technology Head Co-founder, Business Developer Co-foun



Nexus: The Innovation Hub American Center, New Delhi

CERTIFICATE Shalmali Kadu

Aivara Solutions in recognition of successful completion of the Nexus Pre-Incubation Program Thirteenth Cohort New Delhi, India 14th June to 13th August 2021

1st Runner-up of TiE Pune BizQuotient Competition with cash prize of Rs. 30,000



Congratulations & Best Wishes ... Shalmali Medha & Team!!



Shalmali and Medha are the B. Tech Instrumentation and Control Engg from the of Batch 2020. They are the founder of Aivara Solutions LLP, an AI-based start-up from Pune focused on creating innovative and economical solutions for environmental monitoring. With the mission is to solve complex industry problems using the cutting-edge technology and a vision of the leading organization with climate conscious technology. It is DPIT recognized start-up who specialises cutting edge technologies such as AI/ML, cloud computing, Image Processing and Deep Technology.



ve mentioned support will be extended only after you enter into an agre specific terms and conditions to meet the objectives of NIDHI-EIR progr

Congratulations for being sele and Technology Park. Pune (Sci

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- You are engaged for a specific period of the Program and