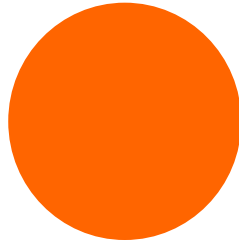


iTNT Hub Monthly Digest

An e-Newsletter from
Tamil Nadu Technology Hub

Edition 2, April 2024



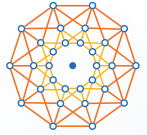


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Foreword

Wishing everyone a wonderful May!

As I look back at the journey that iTNT Hub has come through and the milestones we've achieved along the course of this journey, I extend my deepest appreciation to our stakeholders from Industry and Academia, our Partners, our Startups and the team who have contributed in building and co-creating the Innovation Landscape of TN with us.

The events at iTNT Hub have provided a nurturing environment for aspiring entrepreneurs, equipping them with the necessary skills, support, and resources to transform their innovative ideas into thriving businesses. By bringing the stakeholders together, we have created a fertile ground for cross-pollination of ideas and accelerated innovation.

As we look ahead, we remain steadfast in our pursuit of creating an ecosystem that nurtures and celebrates innovation. We will continue to explore new avenues, forge strategic alliances, and empower the next generation of entrepreneurs to shape the future of Tamil Nadu.

Together, we will continue to push boundaries, unlock new possibilities, and contribute to the growth and development of our great state.



Best wishes,
Vanitha Venugopal
CEO, iTNT Hub

STARTUP SHOWCASE

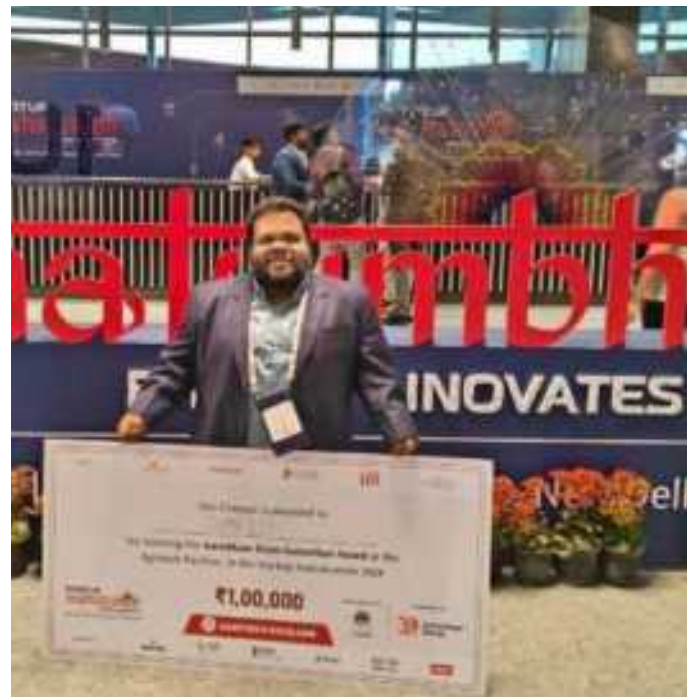
Scrapify Ecotech Private Limited, an iTNT Hub ecosystem startup has been shortlisted for the fourth cohort of Carbon Zero Challenge 4.0,

Scrapify Ecotech Private Limited, an iTNT Hub ecosystem startup has been shortlisted for the fourth cohort of Carbon Zero Challenge 4.0, an initiative supported by IIT Madras and Thales. Out of 850 applications received nationwide, 25 teams have been selected to charge the lead towards a greener future and Team Scrapify is one amongst them, signifying their commitment to develop innovative solutions with significant impact in global sustainability efforts.



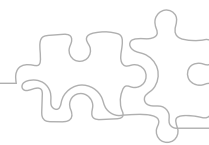
Chimertech Pvt Ltd honored with the Prestigious Aavishkaar Kisan Samarthan Award

Chimertech Private Limited, endorsed by the Expert Group of the Punjab State Council for Science and Technology, has been selected for mentorship by GADVASU (Guru Angad Dev Veterinary and Animal Sciences University). This collaboration aims to provide Chimertech with guidance and expertise, particularly in their Quadmastest kit for early mastitis detection. Chimertech has received financial support of Rs. 2 lakhs through The Rural Milieu Accelerator (RMA) at Talwara, Hoshiarpur, to pilot their innovative solution in Punjab's veterinary sector.



SOLVING THE INNOVATION PUZZLE WITH JIGSAW

Our community's innovation ecosystem is thriving, with a notable increase in investor engagement, now totaling 4. Combined with a surge in research initiative with an increase in researcher count of 578, and a growing startup community of 62, we're paving the way for transformative growth by fostering Industry - Academia collaboration driving deeptech innovation ahead in the state.



iTNT BOOTCAMP BUZZ

"The eight-week bootcamp was incredibly enriching, covering a wide range of startup topics. The highlight was definitely the bootcamp graduation ceremony at Umanage event. A big thank you to iTNT for providing this amazing opportunity!"

Dr. Ananthanarayanan Krishnamoorthy,
Research Professor, SRM Institute of Science & Technology



"The comprehensive overview of startup operations, along with the personal mentoring and networking sessions, were the highlights for me. They provided me with the confidence to proceed further with my startup idea. I'm looking forward to more such opportunities with iTNT."

Dr. S. Dhanalakshmi
Associate Professor, SRM Institute of Science & Technology

"iTNT Bootcamp completely changed my perspective on innovation in entrepreneurship and guided me towards taking my startup idea to the next level. The Bootcamp graduation at the Umanage TN Innovation Arena and the overall experience were invaluable."

Dr. S. Praveen Kumar,
Asst. Professor, Kongu Engineering College



"The iTNT Bootcamp was an eye-opener, showing me how to transform innovative ideas and providing support in shaping my startup. The opportunity to present my idea at the Umanage TN Student Pitch Fest and receive feedback from experts was incredibly satisfying"

Hema Brindha M,
Ph.D Student, SRM Institute of Science & Technology

"The eight-week bootcamp was an enriching experience, validating my startup idea. The graduation ceremony and networking opportunities at the Umanage event were valuable bonuses. Grateful to iTNT for this opportunity"

K. S. Kharthickeyen,
Founder, Veyyil Robotics



EVENTS FROM APRIL*iTNT Hub's Startup Convergence & Community Meetup*

In a dynamic session filled with insights and networking opportunities, Tamil Nadu Technology (iTNT) Hub recently hosted its 'Startup Converge & Community Meetup' on March 25th, 2024. The meetup witnessed Startups, Investors, Students and Individuals gathered to know about iTNT and the supportive ecosystem being offered to startups, nurture innovative solutions from institutions and academicians functioning in the deeptech and emerging tech domain. The community meetup was sponsored by FICCI FLO Chennai as an initiative to foster a holistic entrepreneurial environment and to upskill entrepreneurs in their journey. The event also featured a presentation by Mr. Murugan Chidhambaram, Head of Digital Transformation at AquaConnect,



who delved into the startup's inspiring journey of building South Asia's Largest Aquaculture Network from its nascent stage, securing funding and the strategies that led to their remarkable success.



Following the engaging presentation, participants had the opportunity to network and forge connections with like-minded individuals. The meetup showcased the strength of community support in fostering technological progress and business innovation, leaving participants motivated and equipped with valuable insights to fuel their entrepreneurial journey.



Masterclass on Product Design



The masterclass on product design by ZeQube at the Tamil Nadu Technology (iTNT) Hub aimed to equip deeptech startups with essential knowledge and skills for building successful products in deeptech landscape. The session delved into the fundamentals of Design Thinking, a creative approach crucial for ideating and refining solutions that address specific market needs effectively.

Covering various stages of product development, attendees gained insights into the ideation process, prototyping techniques, and the iterative journey towards building robust and market-ready products. From conceptualization to execution, the masterclass offered practical strategies and methodologies to navigate the complexities of product development in the deeptech domain.



This masterclass was sponsored by FICCI FLO Chennai highlighting their ongoing commitment to promoting entrepreneurship and fostering a culture of innovation through iTNT Hub. We extend our sincere appreciation to FICCI FLO Chennai for their unwavering support.

The session concluded with an interactive Q&A session. Moreover, startups engaged in product development received personalized design consultations, empowering them to fine-tune their strategies and enhance their competitive edge in the market.



World IP Day Celebrations at Anna University

The World Intellectual Property Day was celebrated at the Anna University Campus, Chennai. The event explored patents, trademarks, and copyrights, vital for safeguarding innovation and highlighting the importance of Intellectual Property (IP) rights. Ms. Vanitha Venugopal, CEO of iTNT Foundation, delivered a compelling talk, emphasizing the significance of IP in driving innovation and economic growth. Student innovators presenting their ideas alongside discussions on IP and showcased inventive projects, underscoring the importance of protecting innovative ideas.



Startify 2.0 – A Startup Conclave Program

Our CEO, Ms. Vanitha Venugopal, recently graced the Startup Conclave Program '**Startify 2.0**', organized by CED Anna University, as the keynote speaker. Addressing the gathering of aspiring student entrepreneurs, she underscored iTNT Hub's commitment to nurturing the startup ecosystem in Tamil Nadu. Ms. Vanitha highlighted the various facilities and programs offered by iTNT Hub, encouraging the students to leverage these resources to transform their innovative ideas into successful ventures.



FOUNDER STORIES FT. HARI SHANKAR. R. L

Beyond the Stars: Spacetug's Quest for Space Sustainability

The Indian spacetechnology industry is gaining momentum driven by talent, innovation and advancement in technology infrastructure, following the successful Chandrayaan-3 mission, where India achieved a historic soft landing on the lunar south pole. This achievement has sparked a surge of interest in the nation's space endeavors.

One such startup having its roots in Tamil Nadu working in an interesting niche of space debris removal and orbital monitoring is Spacetug, founded by Hari Shankar and co-founded by Sugashini and Swetha.

SpaceTug functions with the vision of creating a cleaner and safer space where satellite missions and astronauts can operate without the fear of collisions with space debris. Not only mitigating the dangers of collision but also ensuring the longevity of communication satellites with critical space assets.



**Mr. Hari Shankar,
Founder & CEO, SpaceTug**



Space Debris / Junk: What it is and why cleaning it up matters?

Space debris, technically referred to as Orbital debris, refers to human-generated objects, such as pieces of spacecraft, parts of rockets or satellites that are no longer working or explosions of objects in orbit flying around in space at high speeds and can reach speeds of 18,000 miles per hour, almost seven times faster than a bullet!

Despite being invisible in the sky to the naked eye from the ground, beyond the clouds it exists in Lower Earth Orbit (LEO). According to the National Aeronautical and Space Administration (NASA), which is tracking more than 26,000 pieces of orbital debris or space junk, The swift pace and volume of debris in low Earth orbit (LEO) makes it a crowded space and signifies huge safety concerns for present and future space activities endangering both spaceborne individuals and assets as well as those on Earth.

Story behind the stories:

India's prominence in the spacetechnology domain is underscored by its significant achievements, ranging from the Mars Orbiter mission to the recent Chandrayaan-3 milestone. The government, along with the Indian Space Research Organization (ISRO), has been actively formulating policies to bolster startups in the space technology sector. Initiatives like the establishment of the Indian National Space Promotion and Authorization Center (IN-SPACe) and the Make in India campaign have created a conducive environment for private sector participation. The implementation of policies such as the Indian Space Policy (2023) aims to enhance transparency and stimulate private sector engagement, driving the growth of the space economy in the country.

SpaceTug began its journey on 15 March 2022, with a team of three Co-Founders: Hari Shankar R L- Cofounder and CEO, Sugashini S Co-Founder and COO,

Swetha Mohanachandran Co-Founder and CTO. The co-founders of SpaceTug first crossed paths at a space industry conference where they discovered a shared passion for addressing the growing issue of space debris and a smaller number of active players operating in this particular niche of spacetechnology.

The startup currently supported by the Tamil Nadu Technology (iTNT) hub is in the prototype development stage and bootstrapped, building an advanced robotic arm designed for precise satellite inspection, and autonomous object identification using cutting-edge computer vision and machine learning, ensuring precision and safety in space operation.

Like any startup journey, Spacetug faced its share of challenges and obstacles during its early years.

“In the early days, we faced significant challenges - from resource constraints to navigating the intricate investor landscape. Building a hardware product in the spacetechnology sector demanded everything under the sun. But overcoming these obstacles has only strengthened our resolve to make SpaceTug's vision a reality.”

- Hari, Founder of SpaceTug

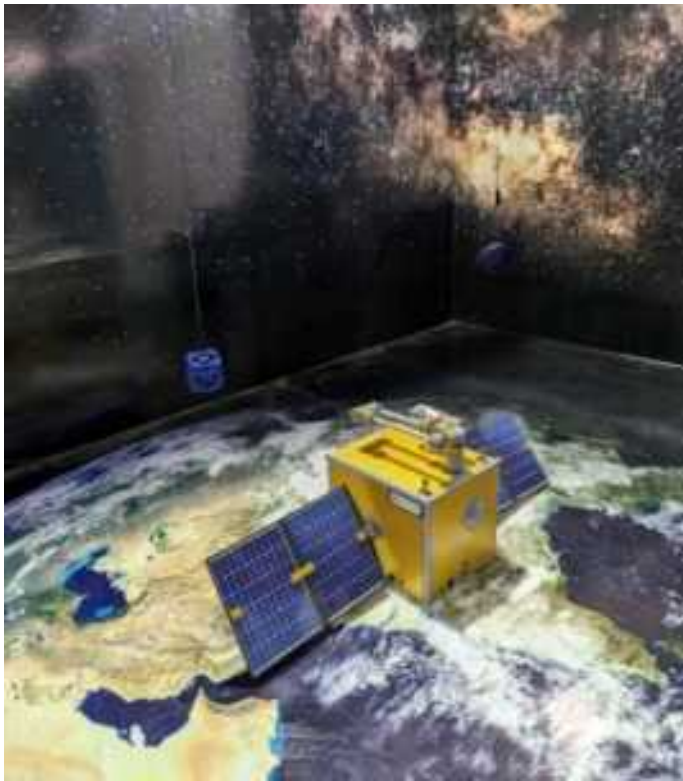
To ensure hardware equipment meets the standards for satellite launch, adherence to a stringent testing protocol, including the Technology Readiness Level (TRL) assessment is to be followed. With nine levels in total, reaching TRL-9 signifies readiness for satellite deployment. Hari and his team have successfully cleared TRL 3 and are in the process of developing the prototype, translating theoretical designs into tangible models. This pivotal step demonstrates the practical viability of the technology and allows for refinement. Various functionality testings are in progress towards TRL 9, a satellite equipped with the manipulator system, which will undergo debris removal missions. These missions serve to showcase its effectiveness in capturing and eliminating space debris in real-world scenarios, validating its readiness for widespread deployment.

Yazhi, the core of Spacetug

Yazhi, named after the mythical temple guardian, is a satellite designed for space debris removal in the lower Earth Orbit (LEO). Equipped with a robotic arm featuring 7 Degrees of Freedom (DoF), Yazhi utilizes advanced LiDAR technology for precise and robust operations. LiDAR, an acronym for Light Detection and Ranging, enables accurate detection and navigation through space debris by emitting pulsed laser beams to measure distances to objects.



(Dr. Palanivel Thiaga Rajan with Yazhi team during UmayeTN 2024)



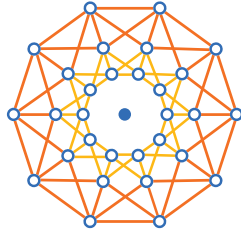
(Yazhi with Robotic manipulator)

At the UmayeTN 2024 event, SpaceTug attracted considerable interest when Hon'ble Minister Dr. Palanivel Thiaga Rajan, Department of Information Technology and Digital Services, personally viewed the functionalities of Yazhi prototype. The demonstration received enthusiastic feedback, with the minister praising the initiative and offering valuable feedback and advice for the startup's future endeavours.

The Indian space industry is on the brink of a monumental transformation, with its market value projected to skyrocket from \$9.6 billion in 2020 to a staggering \$100 billion by 2040. Against this backdrop, SpaceTug anticipates launching Yazhi-1 by 2026, and discussions with ISRO to facilitate the launch through IN-SPACe are underway. Startup founders like Hari and Space Tug's journey reflects the innovative spirit thriving in Tamil Nadu's supportive environment for startups and immense opportunities ahead, underscoring the potential for SpaceTug to play a pivotal role in the Indian space tech industry.

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