

ISSUE - 10



CIE Newsletter

Robotics & Healthcare

June 2025



<https://cie.pes.edu/>



Robotics in Healthcare



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FOREWORD



As someone who has spent over two decades immersed in technology, I can say with conviction that we are living in one of the most extraordinary periods of innovation in human history. The speed, scale, and impact of technological transformation—especially in AI and robotics—is reshaping every aspect of our lives. Nowhere is this more evident than in healthcare.

My own journey toward innovation wasn't sparked by a sudden moment. It was more of a deep, personal realization—especially during the COVID-19 pandemic—that I had been building solutions that helped those who already had plenty. Hearing ambulance sirens outside my apartment, watching people struggle for basic necessities like oxygen or hospital beds, I felt a strong sense of helplessness. It became clear to me: I had to shift gears and do something that served humanity. That's when I envisioned a path where technology would be dedicated for good—to empower those who serve humanity, whether in education, logistics, defense, or especially healthcare.

Today, I lead and work alongside some of the most inspiring minds I've ever met—people who are humble, brilliant, and united by a shared purpose. We wake up every day to make a difference, often losing track of time because what we do doesn't feel like work—it feels like passion. The claps that break out in our workspace are not for presentations or targets; they're for impact, for small wins that translate to real change on the ground.

In the space of healthcare robotics, we're seeing extraordinary breakthroughs.

From AI-driven diagnostic tools to robotic prosthetics, from surgical automation to personalized assistive devices—technology is no longer just a support system; it is becoming a partner in care. And what excites me most is that this revolution is not only happening in high-tech labs or elite hospitals—it's reaching the grassroots. Whether it's enabling local pharmacies to use AI for better inventory or supporting janitorial staff with automation, the impact is broad, inclusive, and deeply human.



FOREWORD

At PES, we've been nurturing healthcare innovation through student-led projects, including a university-funded initiative to develop a robotic arm capable of autonomous surgical suturing. This interdisciplinary effort brought together students from Mechanical, ECE, and CSE, integrating robotics, computer vision, and design to bridge critical gaps in teleoperated surgeries. Another ongoing initiative at PES is Hrithi, a human-robot interaction (HRI) project focused on building a humanoid face capable of emoting through translational intelligence. Over multiple batches, students have developed a life-like robotic face with facial movement, expressions, and embedded cameras for vision—an ambitious effort toward bridging the emotional gap in human-robot communication.

Of course, in a world driven by innovation, there's always the risk of being pulled off course by profit and scale. That's why I believe so strongly in staying true to one's mission. At every step, we ask ourselves: Are we serving the good? If not, we course-correct; even if that means walking away from lucrative deals. Because in the end, technology is only as meaningful as the difference it makes in people's lives.

And as we look to the future, I want to applaud CIE—our Center for Innovation and Entrepreneurship at PES University. It's becoming the crown jewel of our ecosystem. The leadership at CIE lives and breathes student innovation. They're helping engineering students think beyond the code, bringing a strong sense of product management, business thinking, and real-world problem solving into the curriculum. I truly believe CIE will play a pivotal role in shaping the next generation of entrepreneurs who want to build not just for profit, but for purpose.

So if you're a student thinking of launching a startup, ask yourself this first: Why? If your reason is money, don't do it. There are easier ways. But if your mission needs a vessel—if it demands that you build something of your own to carry it forward—then dive in. It won't be easy. You'll let people down. You'll doubt yourself. But if your “why” is strong enough, you'll find a way. And when you do, we'll be right here to support you.

Let us continue to build, innovate, and serve—for the good of humanity

Harsha Chaturvedi
Chief Technology Officer
PES University

4GOOD.AI



From Vision to Venture: Using Technology for Good

Following Mr. Harsha Chaturvedi's inspiring foreword, it's only fitting to spotlight a venture that embodies the very principles he champions—4good.ai. Founded with a deep commitment to ethical innovation, 4good.ai is centered around one powerful idea: using technology to serve humanity

What sets 4good.ai apart is its exclusive focus on partnering with organizations that are driving social impact—whether it's advancing cancer treatment, empowering special needs education, or amplifying corporate social responsibility. The company builds tools and products designed to help these organizations increase revenue, reduce costs, and bring their solutions to market faster. In doing so, 4good.ai ensures that the impact these changemakers strive for becomes not only sustainable but also scalable.



Guided by the philosophy of “technology for those building technology for good,” the company is rooted in empathy, ethics, and a genuine passion for bettering lives. In many ways, 4good.ai represents a natural extension of the values Dr. Chaturvedi has infused into his academic and professional journey—a journey where innovation and compassion walk hand in hand.

4GOOD.AI



What's even more heartening is the strong presence of PES University alumni within the 4good.ai team. Many of them describe their experience at the company as nothing short of transformative. They speak of an environment where learning never stops, where each day brings a new challenge, a fresh perspective, or an unexpected breakthrough. It's a place where innovation feels personal—where you're not just solving technical problems, but contributing to something meaningful. For these young engineers and thinkers, 4good.ai has become more than just a workplace; it's where their skills grow alongside the impact they're making.



DIRECTOR'S DESK: PROF SATHYA PRASAD



We are excited to welcome you to an important milestone for the CIE Newsletter –the 10th edition! We are delighted to have Mr. Harsha Chaturvedi, PES University Chief Technology Officer, sharing his perspectives in the Foreword.

Mr. Chaturvedi has a deep background in technology, enterprise, startups, and global work experience. We couldn't have asked for a better person than him to pen his thoughts on the intersection of robotics and healthcare, both of which have a deep link to technology.

PES University works at the intersection of engineering, healthcare, and technology. It has a well-established engineering school, research hospital, and other allied areas, such as the school of pharmacy and nursing.

Since the last CIE newsletter, we have had an exciting semester. I would like to take you on a quick tour of some of the key aspects of our journey

Essentials of Innovation and Entrepreneurship (EIE): PES University boldly offered a required (2-credit) course on innovation and entrepreneurship to all the university's 3rd and 4th semester students, irrespective of their discipline. This means the number of students taking this course in a semester is a whopping ~4500 students across 21 disciplines and two campuses.



What drove this decision? In an era where AI is reshaping industries and robots perform surgeries, the skills that set humans apart are evolving. The demands placed on graduating students will prioritize adaptability, innovation, entrepreneurial thinking, and novel ways to create value. Today's students aren't just preparing for existing jobs—they're preparing for careers that have yet to be invented!

DIRECTOR'S DESK: PROF SATHYA PRASAD

The flagship initiative, CIE Ignite, was designed on four key pillars: ideation, collaborative teamwork, prototyping, and pitching. The key highlights of CIE Ignite are: 455 teams submitted ideas, 93 teams advanced to the team pitch, 10 teams at the Grand Finale, 7 Winning teams, ₹70,000 in prizes, and three eminent external jury members from the startup and innovation ecosystem in the country.

CIE Industry Mentors (2024)

Name	Company	Experience	Key Skills
M.G. Jayaram	TCS	50 yrs. IT services	Projects/Program, PR Strategy, Process design, Consulting
Hegendra Prasad	WIPRO	30 yrs. Telco, Mobile, Auto	Connected Car / AI, Y2V, V2X Testing, Embedded Sys, Computer Vision
Prasanna Chandran	NTT DATA	30 yrs. Cloud, Analytics, BI	GenAI, AI/ML, SW Architecture, Data Modernization, Computer Vision
Raghavendra Deshmukh	SAP, Walmart	25 yrs. Software Products	Blockchain, AI - LLMs, RAG, Cloud, Dist Systems, Product Management
Rajesh Banginwar	INTEL	50 yrs. Platforms, Systems	Security, H/W & S/W, IoT, Edge Compute, Embedded Sys, Comp Arch, OS

Fueling Innovation, Empowering Students: Industry Expertise Meets Campus Potential
www.cie.pes.edu

Co-Innovation-Center (IHFC @ IIT Delhi and PES University):

PES University & Innovation Hub for Robotics (IHFC) inaugurated the first of the 10 Co-Innovation Center (CiC) under IIT Delhi, focusing on Deep Tech, AI, and Robotics. The CiC intends to cover research and innovation for faculty and students, possibly leading to entrepreneurship.

The inauguration event brought together the senior leadership team of IHFC (Mr. Ashutosh Sharma, Dr. Akash Sondhi, and others) and PES University (Dr. Suryaprasad, Vice Chancellor; Prof. Ajoy Kumar, COO; Prof. Nagarjuna, pro-Vice Chancellor; and others).

Two PES student teams, led by Ms. Ananya Mungara and Mr. Mahesh, qualified for investment under this program. The CiC charter plans several initiatives, including a 'Lab-to-Market' workshop at IIT Delhi, a CiC Members Meetup, and other programs to accelerate real-world solutions.



DIRECTOR'S DESK: PROF SATHYA PRASAD



Industry Collaborations: Technology research, innovation and entrepreneurship cannot be done in silos and requires a collaborative approach. This is especially true for industry and university partnership programs. Happy to report the two key collaborations forged in the last cycle:

Mathworks: CIE at PES University has joined the MathWorks Accelerator Partnership Program. With 700+ accelerators worldwide already part of this program, startups at CIE now gain access to industry-leading tools for AI, Robotics, Wireless Communication, Signal Processing, Green Tech, Computational Finance, and more.

What this means for startups at CIE: 1 year free access to MATLAB, Simulink, and 100+ additional products at no cost, up to 10 Free licenses per startup - enabling teams to build, test, and scale efficiently, direct assistance from MathWorks experts to tackle complex challenges.



Harman India: CIE facilitated the collaboration and signing of an MoU to advance co-innovation between the industry (Harman) and the university (PES University). The initial CoE chosen is the C-IoT (Centre for IoT) at PES University, led by Prof. HB Prasad, with Mr. Vijay Radhakrishnan representing Harman India.

CIE Industry Mentor (CIE-IM) Program: In a first-of-its-kind initiative at PES University, CIE brought together five industry mentors (combined professional experience of 150+ years). The CIE-IM Program turned a 1.5-year program formally (and 2 years, counting the pilot program). The CIE-IM program brought together faculty, students, and industry mentors in a structured way to create new possibilities in an accelerated fashion: new industry-relevant courses, industry-inspired capstone project statements, CIE-Ignite hackathon mentoring-at-scale, technical mentorship for innovation projects, industry partnerships leading to tech research/innovation MoUs, and more. All the indicators thus far indicate that the program has been effective for all the stakeholders.

Innovation Project Initiative (IPI): At CIE, we proudly host students interested in pursuing tech projects of their choice under the IPI program.

CIE INNOVATION PROJECT INTERNSHIP

Project VAJRA: FPGA-Powered Scalable Architecture for Edge AI

In a time where energy efficiency and real-time responsiveness are pivotal to modern computing, VAJRA stands out as an innovative edge computing platform designed to deliver high-performance AI inference with low power consumption. Built by a talented student team, VAJRA represents a modular and scalable architecture aimed at accelerating AI workloads using FPGA-based systems.

Architecture Overview

At the heart of VAJRA lies a carefully structured hardware-software stack:

- **Compute Nodes:** The system uses three DE10-Nano boards, which are SoC FPGAs that handle the heavy lifting of computation-intensive tasks.
- **Controller Node:** A Raspberry Pi 5 acts as the central orchestrator, managing task scheduling and inter-node coordination.
- **Interconnect:** Nodes are linked through high-speed serial communication, ensuring fast and reliable data exchange.
- **Software Stack:** The setup combines custom FPGA-accelerated machine learning algorithms with a Python-based orchestration layer, enabling streamlined deployment and control.

A well-structured physical rack system houses the components, emphasizing modularity and effective space utilization.



CIE INNOVATION PROJECT INTERNSHIP



Key Features

VAJRA is packed with several standout features:

- **Heterogeneous Acceleration:** With FPGAs optimized for AI inference, the system can handle a diverse range of machine learning models with precision and efficiency.
- **Energy Efficiency:** Compared to traditional GPU-based platforms, VAJRA offers significantly lower power consumption, making it ideal for edge deployments.
- **Scalability:** The modular design allows easy addition of compute nodes, enabling the system to scale according to workload requirements.
- **Real-Time Processing:** Purpose-built for AI/ML applications demanding low-latency execution, the system is adept at real-time decision-making and analytics.

Applications

VAJRA's versatile design supports a wide spectrum of intelligent computing use cases, including:

- **IoT-based Intelligence & Automation:** Enabling smarter edge devices through real-time inference and coordination.
- **Deep Learning Inference on FPGAs:** Enhancing model performance while optimizing for power and space.
- **Edge AI Workloads:** Ideal for tasks like object detection, speech recognition, and other real-time analytics.

Energy-Efficient AI Computing: Delivering high throughput while maintaining a small energy footprint—perfect for sustainable deployments.

CIE INNOVATION PROJECT INTERNSHIP

Team Behind VAJRA

The project is the result of a collaborative effort by a passionate team of students committed to pushing the boundaries of AI hardware systems. Their interdisciplinary approach has resulted in a highly optimized and forward-looking platform that brings together the best of embedded systems, machine learning, and distributed computing.

Project Mentor - Dheemanth Joshi

Team Members:

- Samarth NN
- Tanish Shet
- Anish D B
- K M VAISHNAVI
- Kruthika Menta
- Rakesh Patil
- Rishith P
- Aditya Bolar



Conclusion

VAJRA is more than just a prototype—it's a glimpse into the future of edge AI infrastructure. By combining the raw power of FPGAs with intelligent software orchestration and modular scalability, VAJRA lays the foundation for energy-efficient, real-time AI solutions that can adapt to the ever-evolving demands of modern technology.



THE EIE STORY

How PES University is Shaping Future-Ready Innovators

In today's world, where AI writes code and robots assist in surgeries, education must go beyond textbooks and labs. The future belongs to those who can innovate, adapt, and create value in ways we've never seen before. Recognizing this, PES University took a bold step to reimagine education—not just for aspiring entrepreneurs, but for every student.

The Vision Behind EIE

To bridge the gap between technical education and real-world problem-solving, the **Essentials of Innovation & Entrepreneurship (EIE)** course was introduced. Conceived and driven by the **Center for Innovation & Entrepreneurship (CIE)**, EIE was designed as a **pan-university** course, offered to all students across branches in their 3rd and 4th semesters.

The motivation?

To equip students with an innovation mindset, entrepreneurial thinking, and practical skills—regardless of whether they dream of launching a startup, leading a company, or becoming a changemaker in their field.

What Makes EIE Stand Out?

Unlike traditional courses, EIE doesn't rely on lectures alone. It blends the fundamentals of business with a hands-on, interactive approach to learning. Here's what students dive into:

- **Business Acumen** - From market research to financial literacy
- **Real-world Relevance** - Case studies, founder stories, and startup journeys
- **Soft Skills & Mindset** - Communication, critical thinking, and creativity
- **Tech Awareness** - A peek into transformative technologies like AI
- **Practical Application** - Problem framing, opportunity spotting, and solution prototyping

THE EIE STORY

Why It Matters

The EIE course is more than a curriculum—it's a culture shift. It instills in students the belief that they can be creators of change, no matter their background or branch. Whether they go on to become startup founders, innovators in large corporations, or socially conscious leaders, EIE ensures that PES students are not just industry-ready—but future-ready.



Essentials of Innovation and Entrepreneurship (EIE)

Transforming Theory Into Practice



Founder / Expert Talks

PESU Alums (11)

- Tushar Magar - (Founder, Dairmyo)
- Manoj Sanker (Founder, Nemocare)
- Aditya Mehta (Founder, Epicure Robotics)
- Abhilash Madabhushi (Founder, Consuma.AI)
- Shashank Prabhakar (Founder (Kaadu Trails, draft42)
- Dhruv Shetty (Founder, Engineer)
- Keerthi Raghavendra (grad student, CMU)
- Shriya Desai (Deloitte)
- Samhitha Harish (EY)
- Parthan M (grad student, Aachen Univ)
- Shreyas Vedapatak - (B^{Sc}Sem Mech)

Faculty Experts(7)

- Prof. Nagarajuna S (Pro-VC) - Importance of Intrapreneurship
- Prof. Nishi Srivatsa (Law) - IPR for Startups
- Prof. Manikandan (ECE) - Idea->Patent: What & How?
- Prof Ravi Urs (FOMC) - Digital Marketing, Digital Biz Models
- Prof. Sushma (Performing Arts)- Storytelling for Startups
- Dr. Jaykumar (BHEM) - Why/What/How

External Experts(6)

- John Kuruvilla (CEO) - Serial Entrepreneur, multi-area
- Krishnaprasad Jagadish (Founder, CEO, Parjanya) - AR/VR & Media: startup Journey
- Suresh Narasimha (CEO, Co-Create Ventures, PVL) - How to succeed in student-led startups
- Mr. S J Vijay (CEO) - India Pioneer, Building-as-a-Product.
- Mr. Nitish Simakurti (CEO) - Service/Product company from scratch
- Sushma Krishnamurthy - InzpireU

Students

- 4000+
- 21 Disciplines
- 2 Campus

Dept

- FOMC
- Depts of Engg
- CIE TA's
- Industry Mentors

CIE Ignite Jury

- Dr Sudeendra Koushik (BE, MBA, PG SM (IIM-K), PHD (INNOVATION).
- Bindu S. Sastry (Founder, MD, MAUVERICK)
- Anand Sri Ganesh (CEO - NSRCEL, IIM Bangalore)

CIE Ignite Sponsors

- Title Sponsor - **CIC (Co-Innovation Center by PESU & IHFC@IITD)**
- Platinum Sponsor - **InzpireU**
- Gold Sponsor - **4GoodAI**
- Category Sponsor - **SL Memorial**

Total Raised - ₹160,000

CIE IgniteE (Ideathon)



Stages	Preliminary Pitch(S1)	Team Pitch(S2)	Grand Finale(S3)
#Teams	484	94	10
Participants	3000	564	55

Grand Finale - 11th April 2025

Jan-April 2025

Total Prize Money - ₹70,000

- Winner - ₹25,000
- 1st Runners up - ₹15,000
- 2nd Runners Up - ₹10,000

Category Awards

- Prototype Pioneer Award - ₹5,000
- Blockbuster Visionary Award - ₹5,000
- All Girls Team - ₹5,000
- People Choice Award - ₹5,000

EIE Part 1



EIE Part 2



CIE IGNITE

Innovation, Impact, and Inspiration: CIE Ignite Grand Finale Lights Up PES University

Bengaluru, April 11 — The Grand Finale of CIE Ignite, hosted by the Center for Innovation and Entrepreneurship (CIE) in collaboration with The Changemakers' Society, unfolded as a vibrant celebration of student innovation and entrepreneurial spirit at PES University.

Held at GJB 1 A, the event brought together ten dynamic finalist teams that showcased pioneering solutions spanning artificial intelligence, sustainable technology, fintech, fashion tech, healthcare, and mental wellness. The atmosphere buzzed with energy as students, faculty, industry leaders, and jury members gathered to witness a new generation of changemakers in action.

A Grand Opening

The ceremony began with an enthusiastic welcome from emcees Rohan and Khushi, followed by an address by Prof. Sathya Prasad, Director of CIE, who emphasized the university's commitment to nurturing bold, creative thinking. Dignitaries honored at the event included:

- Mr. Anand Sri Ganesh, strategy expert and member of the Vision Karnataka Startup Group
- Mrs. Bindu S. Sastry, founder of MAVERICK and mentor to 300+ women entrepreneurs
- Dr. Sudeendra Koushik, Chief Innovator and President-Elect of IEEE TEMS
- Dr. V. Krishna, Dean of Student Affairs

A serene classical music performance added cultural charm to the event, blending tradition with the spirit of forward-looking innovation.



The poster for CIE Ignite Season 01 features a central graphic of a flame above the title. It lists the event as a flagship ideathon by CIE | PESU, with the theme 'THINK • CREATE • WIN'. It mentions 3000+ students, 20+ departments, 30+ faculty, and 10+ industry mentors. Three judges are listed: Sudeendra Koushik, Bindu Sastry, and Anand Sri Ganesh. The prize structure includes ₹25,000, ₹15,000, and ₹10,000 for the top three teams, plus a ₹20,000 pool prize. The grand finale is on 11th April 2025 at Auditorium 1B, GJB. Sponsors include InzpireU, PES, and the Computer Society.

CIE IGNITE

- Harmony.AI proposed a workplace conflict resolution platform using NLP and machine learning.
- AllerGals tackled allergy safety in shopping through a smart digital assistant.
- Netra introduced CodeCast, a collaborative real-time coding platform.
- BotZilla wowed the jury with ROVAR, an AR-controlled robot for hazardous environments.

Following the first session, attendees enjoyed refreshments, networking, and an engaging quiz and mini-games focused on innovation and startups—fostering a vibrant exchange of ideas.

Session 2 Highlights:

- GlowGenics impressed with bioengineered, eco-friendly lighting solutions.
- rm -rf introduced The Closet App, a smart wardrobe organizer powered by AI.
- ArthaMind Technologies presented a fraud detection system leveraging AI for financial integrity.
- HarmonyCore demonstrated an AI tool to preserve and generate Indian classical music.
- 405Found tackled mental health with an anonymous, AI-powered peer support platform.

Each pitch was followed by incisive Q&A sessions, allowing the teams to receive expert feedback and demonstrate their grasp of both technical details and market relevance.

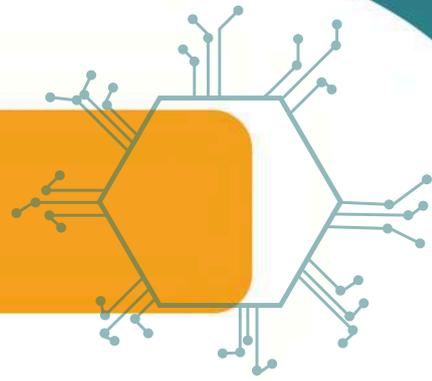
Celebrating Excellence

The day culminated in heartfelt reflections from the jury and an awards ceremony honoring the standout teams:

- 🏆 1st Place: GlowGenics - ₹25,000
- 🥈 2nd Place: Team Netra - ₹15,000
- 🥉 3rd Place: BotZilla - ₹10,000



CIE IGNITE



Special Recognitions:

- Allergals - Prototype Pioneer
- Fresh Trackers - Best All-Girls Team
- ArthaMind Technologies - Blockbuster Visionary
- rm -rf - People's Choice Award



A Launchpad for Changemakers

The CIE Ignite Grand Finale wasn't just a conclusion—it was a launchpad. It marked the end of a semester-long journey where student teams transformed bold ideas into tangible prototypes, supported by mentorship and hands-on innovation.

In the words of the organizers, "The future of innovation is in capable hands." With such promise on display, PES University reaffirmed its place as a breeding ground for the next wave of entrepreneurs, technologists, and changemakers.



DEEP DIVE INTO THE NEWSLETTER THEME



Robotics in Healthcare: Transforming Medicine Through Innovation

The integration of robotics into healthcare has revolutionized medical practices, enhancing precision, efficiency, and patient outcomes. From surgical procedures to patient care, robotics is reshaping the healthcare landscape.

Robotics in healthcare began with the introduction of robotic-assisted surgeries, notably the da Vinci Surgical System, which allowed for minimally invasive procedures with enhanced precision. Over time, the scope expanded to include rehabilitation robots, robotic prosthetics, and automated systems for hospital logistics. Advancements in artificial intelligence (AI) have further propelled the capabilities of healthcare robots, enabling them to learn and adapt to complex tasks.

Robotics has a wide range of applications in healthcare, including surgical assistance, rehabilitation and therapy, elderly and patient care, hospital logistics, and diagnostics and monitoring. The benefits of these applications are remarkable. Robots perform tasks with exceptional precision, significantly reducing human error in surgeries and diagnostics. By automating routine tasks, healthcare professionals are able to dedicate more time to patient care, enhancing overall productivity. Minimally invasive procedures, along with consistent rehabilitation therapies, contribute to faster recoveries and improved health outcomes. Furthermore, robotics can bridge healthcare gaps, particularly in remote or underserved areas, by offering reliable and consistent services.

Although this has its fair share of challenges like High Implementation Costs, Technical Limitations, Regular Maintenance, Ethical and legal issues regarding data privacy and Healthcare professionals need specialized training to operate and interact with robotic systems effectively.



DEEP DIVE INTO THE NEWSLETTER THEME



In India, the adoption of robotics in healthcare is gaining momentum, driven by the need to improve access and quality of care in a resource-constrained environment. Robotic surgeries are becoming more common in urban hospitals, while initiatives are underway to develop cost-effective robotic solutions suitable for rural healthcare settings.

PES University, through its Centre for Robotics, Automation, and Intelligent Systems (cRAIS), has been making significant strides in the field of healthcare robotics. One of the key healthcare-focused projects from cRAIS was the development of a robotic system for automated suturing in surgical environments. While robotic-assisted surgeries are becoming commonplace, suturing is still largely a manual task. The cRAIS team designed a robotic arm with a specially engineered gripper capable of performing sutures, integrating computer vision and mechanical precision.

Another remarkable initiative was a nanorobotics project aimed at cancer detection and targeted drug delivery. Although it was a simulation-based study using COMSOL, the project envisioned nanorobots that could travel through the bloodstream, detect abnormal cell growth using embedded sensors and cameras, and release medication directly to affected areas.

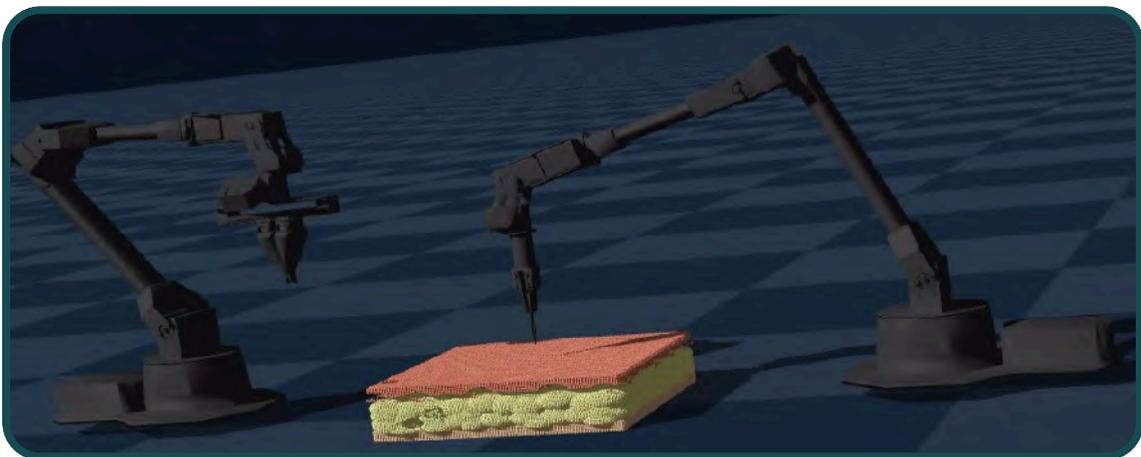
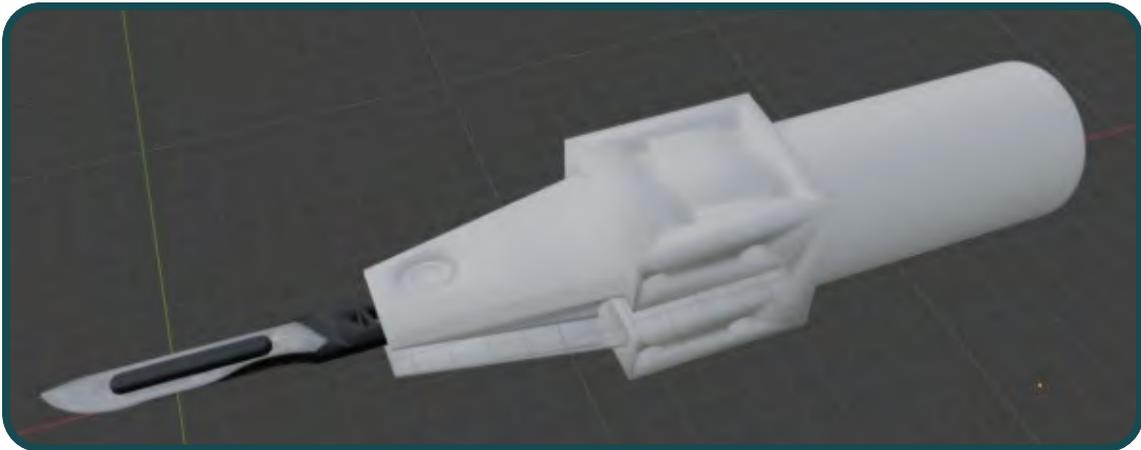
Additionally, PES collaborated with Anand Diagnostics (now NAALM) on a project to automate test-tube segregation and sorting for diagnostic laboratories. This system is designed to streamline operations in diagnostic centers by ensuring efficient sample processing with minimal human intervention.

Moreover, cRAIS is exploring Human-Robot Interaction (HRI) through its project called "Hrithi"—a human-like robotic face capable of emoting. Still under development, Hrithi aims to enhance robot-human communication by making robotic expressions more lifelike. This has strong implications for mental health therapy, elder care, and companion robots in hospital settings.

DEEP DIVE INTO THE NEWSLETTER THEME



Through funded collaborations, university grants, and student-driven initiatives, PES University is positioning itself as a leader in robotics-driven healthcare solutions in India. Their work not only contributes to academia and research but also lays the foundation for scalable, real-world applications in medical diagnostics, surgery, and patient care.



Dual Arm Manipulator for Surgical Incision



SPOTLIGHT: CRAIS AND CIOT

Robotics in Healthcare – The CRAIS Perspective

At a time when interdisciplinary innovation is shaping the future, the Centre for Robotics, Automation and Intelligent Systems (CRAIS) at PES University stands out as a beacon of cutting-edge research and real-world impact. Led by Dr Shikha Tripathi, Head of CRAIS, HOD of the Department of ECE, and former Chair of the IEEE RAS Bengaluru Section, the Centre is driven by a collaborative and purpose-driven approach to robotics—with healthcare at one of the forefronts.

A Journey Rooted in Passion

CRAIS began its journey in 2021, sparked by a simple yet powerful conversation between Dr Tripathi and a mechanical engineering student passionate about robotics. What started with just three students and a shared vision has since evolved into a thriving, interdisciplinary centre that brings together faculty and students from ECE, CSE, Mechanical, and MCA. Dr Tripathi emphasises that CRAIS has never been tied to a single department—a rarity that has enabled a truly inclusive and collaborative environment.

Innovating Healthcare, One Robot at a Time

Among CRAIS's many initiatives, healthcare robotics has emerged as a particularly exciting and impactful focus. One notable project involves an automation solution for Anand Diagnostics, designed to efficiently sort and route test tube samples. This two-year funded project combines robotics with industrial automation in a real-world clinical setting.

Another breakthrough effort is the development of a robotic suturing arm to assist during surgical procedures. While diagnostic robots can already support remote surgeries, suturing is typically left to human hands. CRAIS addressed this challenge by building a robotic arm powered by computer vision and precision mechanics—successfully producing a working prototype.

CRAIS has also ventured into nanorobotics. One simulated project involved deploying nanoscale robots into the bloodstream to detect and potentially combat cancer cells—a bold step towards minimally invasive diagnostics and targeted therapies.

“Healthcare robotics isn’t just about replacing human effort; it’s about assisting, augmenting, and making critical procedures faster and more accurate,” says Dr Shikha Tripathi. “It’s an area where technology truly becomes life-saving.”

SPOTLIGHT: CRAIS AND CIOT

Overcoming the Challenges of Medical Robotics

Robotics in healthcare comes with high stakes. As Dr Tripathi notes, the field is extremely sensitive—where even the smallest errors can lead to life-threatening consequences. This makes precision, reliability, and ethical accountability non-negotiable at every stage. Despite these challenges, she strongly believes that robotics will revolutionize healthcare by empowering medical professionals and improving both accuracy and outcomes.

Building a Culture of Innovation

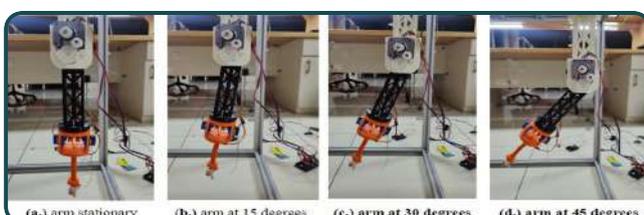
CRAIS actively collaborates with industry through MoUs with organisations like Orange Robotics and NAALM. Projects are often born out of student-driven internships or direct collaborations, offering hands-on experience and opportunities to contribute to impactful research. The Centre also promotes early involvement through IEEE RAS events and internal workshops, encouraging students—even in their early semesters—to explore tools, build foundational skills, and dive into innovation.

One of CRAIS's most ambitious ongoing projects involves a humanoid robot capable of expressing human-like emotions. Through cutting-edge materials research and robotic actuation, the team is working to bridge the emotional gap in human-robot interaction, with the potential to revolutionize elder care and companionship solutions.

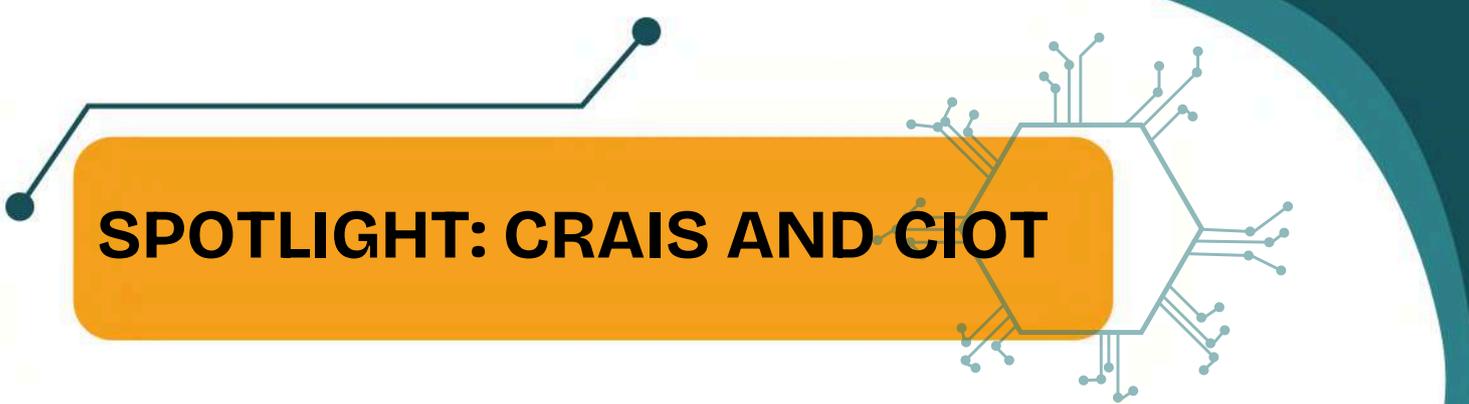
A Vision for the Future

As CRAIS continues to grow, Dr Tripathi envisions deeper industry partnerships, government-funded research, and strong student participation at every academic level—from undergraduate to PhD. A flagship robotics conference, RASA (Robotics, Automation, and Systems Applications), is already in the works, set to become a major platform for showcasing innovation in robotics within India.

CRAIS is not just a centre—it is a movement that empowers students to lead innovation. And in a world where the lines between technology and humanity are blurring, CRAIS is ensuring that robotics is used where it matters most—in healthcare.



Auto Vinci : A suturing robot



SPOTLIGHT: CRAIS AND CIOT

Engineering the Future: A Closer Look at the Center for Internet of Things (CIOT) at PES University

In a campus that thrives on innovation, the Center for Internet of Things (CIOT) at PES University stands out as a hub where cutting-edge technology meets real-world impact. Led by Professor Prasad Hanavalli, the center is not just a lab filled with wires and sensors—it is a living, breathing ecosystem that reflects the evolving landscape of emerging technologies.

What began as a one-man initiative has today grown into a full-fledged powerhouse with over 20 dedicated faculty members and an outreach that touched over 4,000 students last year alone. CIOT operates under a broad interdisciplinary umbrella, encompassing robotics, drones, digital twin systems, augmented and virtual reality, automotive security, classical IoT, and applications in the medical domain. What makes the center unique is its synergy with the Center for Information Security Forensics and Cyber Resilience (ISFCR), where the importance of securing data from resource-constrained IoT devices is deeply understood and addressed.

Professor Hanavalli, who transitioned to academia after a long stint in industry, brought with him a vision rooted in both technical depth and practical relevance. His belief in marrying conceptual understanding with hands-on experience is evident in how the centers operate—hosting hackathons, enabling internships (both paid and credit-based), and encouraging early involvement from lower-semester students.

Beyond its technological sophistication, what really sets CIOT apart is its deep integration with real-world needs. From building their own drones from scratch to developing simulation tools for nursing students in collaboration with PES's Medical College, the projects emerging from the center serve not only as academic milestones but also as meaningful contributions to society. In fact, one of their recent patents—focused on real-time surveillance—was awarded to the university and is now being considered for monetization.

The center has also fostered strong ties with government bodies, notably through an annual hackathon conducted with the Karnataka CID Police. These collaborations allow students to tackle real-life problems like cybercrime prevention, making the learning process both impactful and immediate.

The ripple effect of the center's work is felt far beyond the campus gates. Alumni frequently return with stories of how the knowledge and exposure gained here gave them a unique edge—be it in top global universities where many have secured direct PhD admissions, or in industries where they've been able to lead initiatives in areas even their managers hadn't explored.

In a world where technology is ever-evolving, the Center for Internet of Things at PES University is a stronghold of learning, innovation, and social responsibility. With its strong foundation, growing community, and vision rooted in applied intelligence, CIOT isn't just preparing students for the future—it's helping them build it.

E CELL AND E-SUMMIT

E-Summit '24: A Thrilling Showcase of Entrepreneurial Excellence

PES University's E-Summit '24 was a spectacular convergence of innovation, strategy, and business acumen, bringing together the brightest minds to compete, collaborate, and learn. With multiple high-intensity events spanning two days, participants demonstrated creativity, resilience, and critical thinking, making this edition of the summit truly unforgettable.

A Battle of Ideas and Wit

The competition kicked off with a challenge designed to test creativity and presentation skills. Over three rigorous rounds, 26 teams crafted pitch decks, marketed quirky products, and engaged in knockout-style rebuttals, keeping the audience on the edge of their seats. Meanwhile, Jeopardy, inspired by the legendary game show, took an entrepreneurial twist. Teams brainstormed solutions, defended business ideas, and adapted to real-time challenges, showcasing their problem-solving prowess.



E CELL AND E-SUMMIT

From Strategy to Crisis Management

At Sink or Sell, participants navigated the complete business lifecycle—crafting a compelling product pitch, analyzing unit economics, and tackling crisis scenarios that tested their adaptability. **Best Manager** pushed leadership and negotiation skills to the limit with intense merger negotiations, high-stakes crisis panels, and a final grilling round where only the sharpest minds thrived. These events highlighted the importance of quick thinking, strategic planning, and persuasive communication in today’s business world.

Keynote Insights: Lessons from a Startup Visionary

One of the most anticipated sessions of the summit was the keynote by Srinivas Sarkar, founder of Coupl, a revolutionary neo-banking app. He captivated the audience with his journey—from idea validation to securing funding from Y Combinator. His insights into startup growth, investor relations, and fintech disruption left aspiring entrepreneurs with valuable lessons and inspiration to take their ventures to the next level.

E-Summit '24 wasn't just a competition—it was a launchpad for innovation, where students refined their skills, built connections, and embraced the entrepreneurial mindset. With its perfect blend of strategy, creativity, and business intelligence, this edition proved that the future of entrepreneurship is brighter than ever.



PVL- NATIONAL STARTUP DAY

PES University Hosts National Entrepreneurship Day: Inspiring the Next Generation of Innovator

Bengaluru, India - PES University, in collaboration with Krishi Kalpa and CoCreate, successfully celebrated National Entrepreneurship Day, a DPIIT-supported initiative aimed at fostering innovation and startup culture among students. The event brought together industry leaders, aspiring entrepreneurs, and mentors for a day filled with insightful discussions, networking opportunities, and inspiring success stories. Over 10 lakh INR in funding was awarded to top-performing teams to help bring their ideas to life, reinforcing the university's commitment to nurturing entrepreneurial talent.

A major highlight was the National Startup Day Pitchfest, where 40 promising student-led startup teams from across Karnataka showcased their innovative ideas in high-energy pitching sessions. Expert judges evaluated the pitches, providing valuable feedback and insights on innovation, feasibility, and market potential. Engaging panel discussions, including "Deep Innovation & Startups" and "Managing GCC and Corporate Innovation," featured industry stalwarts such as Ajay Chowdhary, Dinesh Pai, and Smitha Hemmige, who shared their experiences and strategies for building scalable, impact-driven businesses. Networking opportunities throughout the day allowed students to connect with mentors, investors, and fellow entrepreneurs, fostering a vibrant entrepreneurial ecosystem.

The event concluded with an inspiring keynote by Subhash Chandra L, MD of Sangeetha Mobiles Pvt Ltd., who shared his entrepreneurial journey and awarded financial grants to 20 standout teams. Each of the 15 winning teams received a prize of ₹50,000 to develop their prototypes. Leadership insights from PES University's Pro-Chancellor, Prof. Jawahar, and key figures from Krishi Kalpa and CoCreate underscored the university's mission to empower students through dedicated startup incubators and funding programs. With 150 applications received in just three days, the overwhelming response demonstrated the rising entrepreneurial spirit among students. As media coverage and industry recognition amplify the event's success, PES University continues to pave the way for the next generation of Indian innovators.



MUNSOC AND PECON

The PES MUN Society successfully hosted two landmark events in the 2024-25 academic year — The People’s Conference (PeCon ’24) and Diplomat Wars — reaffirming its position as a key player in South India’s MUN circuit.

PeCon ’24, held on the 5th and 6th of October 2024, was one of the society’s most ambitious and well-executed editions to date. The conference featured eight dynamic committees: INTERPOL, DISEC, UNHRC, UNODC, UNSC, CCC, AIPPM, and the International Press. It brought together students from across the country to engage in thoughtful debate and policy-oriented discussion on pressing global and national issues.

The event was further elevated by the presence of Mr. Luke Coates, Deputy Consul-General of Australia, as Chief Guest. His address offered participants a unique perspective on international relations and diplomacy, lending both gravitas and insight to the conference.

Delegates represented top institutions including Jain University, Ramaiah Institute of Technology, Dayananda Sagar University, JSS Academy of Higher Education and Research, NIT Karnataka, and many more, alongside a strong contingent from PES University. Balancing accessibility for newcomers and depth for experienced MUNners, PeCon ’24 stood out as a forum that celebrated both learning and excellence in diplomacy.

Following the flagship conference, the society organised Diplomat Wars on the 5th and 6th of March 2025 — a two-day competition designed to groom the next generation of PES’s MUN talent. Featuring five uniquely challenging rounds — Qriosity, Agree to Disagree, Catch 22, Jeopardy, and So You Think You Can Fly? — the event pushed participants to think on their feet, communicate clearly, and navigate complex scenarios in teams of two. The format offered an engaging introduction to the skills essential for MUNs: critical thinking, adaptability, and persuasive diplomacy.

With over 25 Best Delegation awards to its name, the PES MUN Society continues to uphold a standard of excellence in the circuit, fostering a vibrant community of future diplomats, policy thinkers, and leaders.



ENACTUS



Enactus PES University champions socially conscious entrepreneurship, enabling students to tackle real-world challenges with innovative, tech-driven solutions aligned with the UN Sustainable Development Goals.

National Recognition at IIT Roorkee's E-Summit

At Envision 2025, IIT Roorkee's national entrepreneurship competition, Team EcoSphere from Enactus PESU secured 4th place and won the Best Clean Tech Product award—emerging as the only South Indian finalist among 100+ teams. Their winning innovation: a bio-panel system that absorbs CO₂ 10x faster, reuses greywater, and generates biomass. Evaluated by leading social entrepreneurs and IIT Roorkee faculty, the project is now being further refined under the mentorship of Prof. Rupasi K and inspired by insights from leaders like Aman Gupta (boAt) and Dr. A. Velumani (Thyrocare).

Engenious 2025: Ideating with Purpose

On Feb 15, 2025, the second edition of the club's ideathon brought together students to develop solutions around neurodivergence awareness, animal adoption, and human-wildlife conflict—in collaboration with NGOs like Manonandana Trust and Adavi Alert Foundation. With rounds on ideation, value creation, and pitching through "Easy Investing," the event fostered hands-on learning and strategic thinking.

Looking Ahead:

With impactful projects like EcoSphere and Engenious, Enactus PES University continues to empower student-led innovation for social and environmental good.



CMS TERRATHON

TERRATHON 4.0 – A 24-Hour Innovation Sprint

Date: March 22–23, 2025

Venue: 13th Floor, BE Block

Terrathon 4.0, the flagship hackathon hosted by The Changemakers' Society and The Alcoding Club, brought together 30 top teams from a pool of 166 registered teams (664 students) for a 24-hour challenge focused on IoT, Gen AI, Web3, and Open Innovation, with sustainability as a key theme. Three problem statements were also provided by CISCO, adding a real-world edge to the competition.

The event was inaugurated with speeches by dignitaries including Dr. K. S. Sridhar (Registrar), Prof. Madhukar Narasimha, Dr. V. Krishna, and entrepreneur Mr. Vikram R. A countdown marked the start of an intense marathon of creativity, coding, and collaboration.

Across three review rounds, teams were evaluated on clarity, feasibility, innovation, scalability, and implementation, guided by mentors and assessed by judges. The hackathon also featured a fun-filled game night, complete with a Shark Tank-style pitch session, meme contest, and a midnight concert.

The top 10 teams presented their projects in the final showcase, judged by Mr. Kumar Gopalakrishnan, Ms. Swarnali Chakraborty, Ms. Namratha Kallavi, and Mr. Vikram R.

Winners:

1st Place – Team Saarthi (₹25,000)

2nd Place – Team Ecobella (₹15,000)

3rd Place – Team CryptoKnights (₹10,000)

The hackathon was a resounding success thanks to the efforts of faculty mentors Dr. Chaitra N, Ms. Anuradha Venkatasubbu, and all the technical mentors and volunteers from Team Drivelink



STUDENTS IN FOCUS

Vega Racing Electric - PES University

Established in 2017 under the EV Club at PES University, Vega Racing Electric (VRE) is a student-led team focused on designing and building high-performance electric race cars. Their mission is to advance electric mobility and innovation through participation in Formula Student competitions, while also promoting sustainability.



VRE follows a five-stage development process: concept development, design and simulation, manufacturing, testing and validation, and competition readiness. Despite facing technical and financial challenges, the team has achieved significant milestones. At Formula Bharat 2025, they ranked 1st in

Bangalore, 3rd in South India, and 15th nationally out of 47 teams—an impressive feat, especially as the only first-year team to pass the Accumulator Technical Inspection.

The team is structured into Mechanical, Electrical, Aerodynamics, and Management divisions. Their vehicle features a custom-built accumulator, an optimized powertrain, a lightweight chassis, and innovative aerodynamic systems. They apply modern advancements in battery technology, power management, and data analytics to improve performance.

Beyond competition, VRE is committed to sustainability and outreach. They organize workshops, engage in community programs, and provide members with valuable hands-on experience and industry exposure. Looking ahead, the team aims to enhance their technical expertise, improve performance, and become one of India's leading Formula Student EV teams.

STUDENTS IN FOCUS

E Sharp

E Sharp, named after the theoretically non-existent musical note “E sharp,” is a dynamic band born from a shared love for music and creativity. Comprising students from diverse academic backgrounds—including AIML, CSE, ECE, and BBA—the band blends genres like rock, metal, and soft jazz to create a distinct sound. Members include guitarists Adithya and Hamsini, bassist Aaditya Vasisht, vocalist Dhruv, pianist Hiral, and drummer Siddharth.



The band began as a casual group of friends jamming and covering songs without formal training. Their first major performance at PES University’s E-Summit closing ceremony marked their transition from a hobby to a serious musical endeavor. Since then, E Sharp has carved a name for itself on prestigious platforms. They became the first band from PES University

to win an external competition, clinching the top spot at Christ University’s Battle of the Bands.

Their achievements continued with a strong 4th place finish at the IIT Madras Pan-India Battle of the Bands and a landmark victory at BITS Hyderabad, where they won the entire event against top-tier college bands. Their journey has now led to an upcoming professional performance at The Raft in Koramangala.

What sets E Sharp apart is their commitment to originality and teamwork. Their jam room serves as both a creative space and a retreat from academic pressures. Known for composing complete tracks in under six hours, the band thrives on synergy, passion, and a promise to stay grounded while sharing their music with the world.

STUDENTS IN FOCUS

Ananya Mungara

SMARTCHAKRA: Revolutionizing Automotive Safety and Efficiency

SmartChakra is a startup focused on improving road and industrial safety through real-time monitoring solutions. Its two main products—the Tyre Management System and SonicScape—help predict and prevent failures before they occur.



Inspired by a personal accident due to under-inflated tyres, the team overcame early rejections from Shark Tank India and PESU Venture Labs to build impactful solutions. The Tyre Management System alerts drivers to tyre pressure and temperature issues, enhancing safety and fuel efficiency. SonicScape enables predictive maintenance in factories by monitoring vibrations and sound, helping reduce downtime and energy waste.

Beyond safety, SmartChakra promotes sustainability by lowering emissions and conserving energy. With plans to expand into more vehicle safety features and industrial monitoring tools, the startup continues to grow.

Recently, it was one of only two startups selected for incubation at PES University's Core Innovation Center, gaining access to top-tier mentorship and support.

STUDENTS IN FOCUS

Pranav Srikar

Pranav Srikar, an 8th-semester CSE student, is passionate about the intersection of technology, entrepreneurship, and business, with a particular interest in how AI will transform industries, especially consulting. A CIE L1 student, he has actively explored the entrepreneurial space, including an internship at 4good.AI as a Product Management Intern, where he gained hands-on experience in the startup ecosystem.



Recently, Pranav was accepted into the prestigious Berkeley Haas Global Access Program at the Haas School of Business, where he will deepen his understanding of business strategies. He was also awarded the Defining Leadership Principles scholarship as part of the program. Additionally, Pranav will be joining the Masters in Analytics and Management Program at London Business School next fall. Grateful for these opportunities, Pranav is determined to make the most of them while continuing to explore and shape his path forward.

Reflecting on his journey, Pranav believes that taking a chance on one's dreams is always worth it, even when the outcome is uncertain. It is often the act of trying that opens doors to unexpected opportunities.

STUDENTS IN FOCUS

Vikas K S

Writing from the Soul: The Story Behind The Silent Truths of Love

In the hallways of PES University, where students chase technical excellence, Vikas Chinmay, a second-year Computer Science student, took a different route to leave his mark—through words. As the author of *The Silent Truths of Love*, Vikas has ventured into the literary world, crafting a heartfelt narrative that explores love, heartbreak, and self-transformation.

Writing about personal experiences is never easy, and Vikas faced his fair share of writer's block. However, his determination to help others going through similar struggles pushed him forward. Through his book, he wants to send a clear message: Heartbreak is not the end—it's a chance to grow into a stronger version of yourself.

PES University played a crucial role in shaping Vikas' journey. Initially focused on placements, he soon realized that life was about more than just grades—it was about pushing boundaries, taking risks, and creating something meaningful. This shift in mindset fueled his passion for writing and storytelling.

Beyond *The Silent Truths of Love*, Vikas is already on his next venture. His second book, *Why This Degree?*, tackles the struggles of choosing the right career path in education, and he is now actively working on expanding his reach as an author.

Vikas Chinmay's story is a testament to the fact that success in college isn't limited to technical achievements. Sometimes, it's about finding your voice, sharing your truth, and inspiring others to embrace growth—one page at a time.



STUDENTS IN FOCUS

Niki Prasad

At just 19 years old, Niki Prasad, a BBA Sports Management student at PES University, RR Campus, has earned her place in the spotlight of Indian cricket. In a proud moment for the nation and the university, she led the India U-19 Women's Cricket Team to a stunning victory in the 2025 U-19 Women's Cricket World Cup held in Malaysia.

Niki's journey began as a childhood hobby, but her exceptional talent and dedication quickly set her apart. By age 9, she debuted for the Karnataka U-16 team, and by 13, she was representing the senior Karnataka state team. Her consistent performances and leadership skills led to her being named captain of the U-19 national team, from where she led India to an international title.

The tournament was a testament to the growing strength of women's cricket in India. Under Niki's captaincy, the team dominated every stage of the competition, culminating in her lifting the coveted trophy—a historic moment in her young career. Balancing academics and national-level sport is no easy task, but Niki credits the unwavering support from PES University's



faculty and administration, particularly the Sports Department, for helping her manage both. Their encouragement has allowed her to thrive in the classroom as well as on the field. Unlike many who face barriers related to gender or opportunity, Niki acknowledges the strength of the supportive environment around her—from family and coaches to her university. This strong foundation has played a key role in her journey.

Looking ahead, Niki has her sights set on playing for the Indian Women's Team and winning the Women's World Cup. Her journey is marked by determination, purpose, and a drive to make the country proud while inspiring young athletes across India.

Her message to aspiring sportspersons is grounded and powerful: challenges are inevitable, but belief in one's passion and consistent effort are what lead to success. Niki Prasad embodies perseverance, purpose, and the spirit of Indian sport—and PES University stands proudly behind her.

STUDENTS IN FOCUS

Prathamesh Devadiga

Breaking Barriers: Prathamesh's Journey into AI Entrepreneurship

Among PES University's rising innovators, Prathamesh Devadiga, a third-year Computer Science student from the EC campus, stands out as a visionary in the field of Artificial Intelligence. His latest venture, Adhara AI Labs, reflects his commitment to AI research, mentorship, and technological growth.

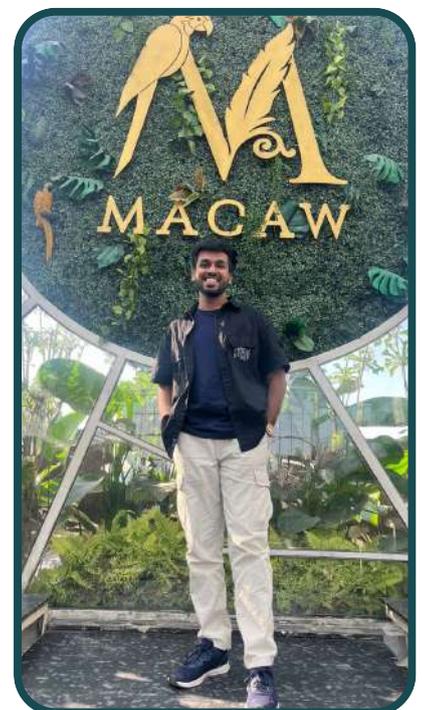
Founded just a month ago, Adhara AI Labs focuses on open-source AI development and student-led research, especially in the domain of indigenous languages. The name "Adhara," meaning "foundation," mirrors the startup's mission to help students build solid research profiles and contribute meaningfully to the AI ecosystem.

This isn't Prathamesh's first startup. In 2023, he co-founded The Bookshelf, a peer-to-peer book rental platform. Though the venture was short-lived due to scalability challenges, it offered crucial lessons in pricing strategies and business operations, which he now brings into his current venture.

Prathamesh also has a strong background in industry and research. As an AI Engineer Intern at IndhicAI, he worked on solutions for global clients, honing his technical and interpersonal skills. He was selected for the Oxford ML Summer Program and completed a research internship at IIT Indore, further deepening his AI expertise.

He believes in the mantra: "learn fast, think fast." His advice to fellow student entrepreneurs is to network actively, form the right teams, and constantly seek growth opportunities. From being an introverted first-year student to launching his own AI research lab, Prathamesh's journey is a testament to the power of stepping outside one's comfort zone.

With Adhara AI Labs still in its early stages, the road ahead is filled with potential. As he continues to drive innovation and mentorship in AI, Prathamesh's journey is clearly just beginning.



STUDENT STARTUPS

Draft42

Shashank Prabhakar's entrepreneurial journey began in college, where programs like CIE's Basecamp and GDC exposed him to business fundamentals and user-centric design thinking. These experiences, while exploratory at the time, laid the groundwork for what was to come.

After graduation during the pandemic, while many peers pursued placements or higher studies, Shashank and his co-founder decided to create something of their own. In November 2020, they launched Draft 42, a creative design agency.

They began with small design and branding projects, notably working with a research center at PES. Gradually, they expanded through word-of-mouth, taking on clients and building websites and brand identities.

He also birthed Kadu Trails, an experiential travel company offering wildlife tours and photography guidance. The venture uniquely merges his design skills, passion for photography, and love for nature, offering curated wildlife experiences to small groups.

His main challenges included-

- Hiring: Building a dependable team has been difficult, especially in a remote setup.
- Time Management: Balancing multiple ventures, a full-time workload, and later, a master's degree took a toll on his health and sleep patterns.
- Lack of Structure: Without a dedicated physical office, managing logistics and workflow wasn't always easy

Shashank's takeaways from his journey were that you don't need a huge investment—start with what you have. Your interests and hobbies can evolve into career paths if you stay curious and open to opportunities. Success doesn't follow a timeline. Everyone's journey is different. Don't compare or rush.





STUDENT STARTUPS

Zeru

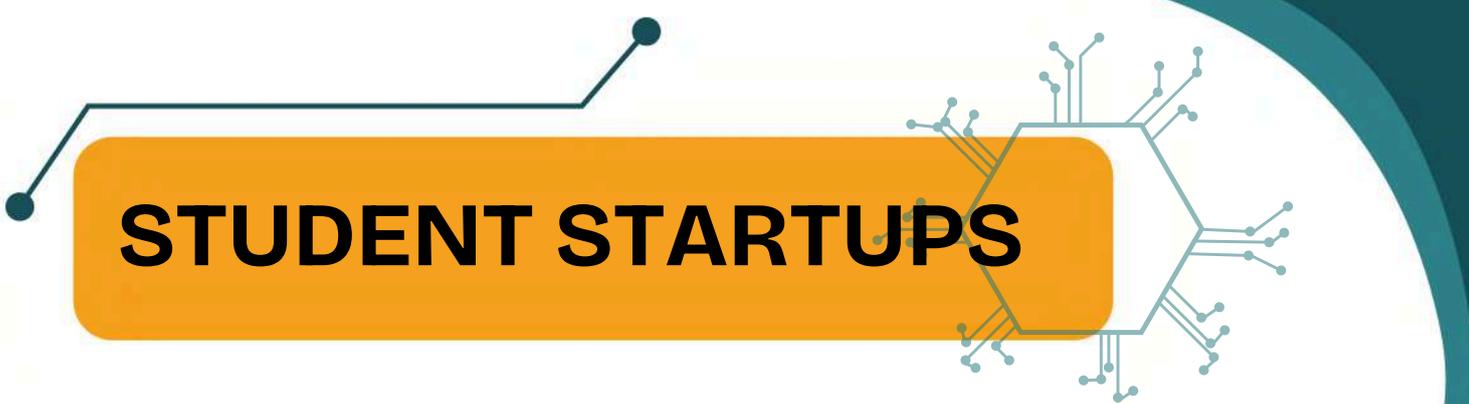
In the evolving world of Web3 and decentralized finance (DeFi), trust is a curious concept. Blockchain promises a “trustless” system—where transactions are secure, anonymous, and verifiable without needing centralized authority. Yet, as Mr. Akshay, co-founder of Zeru, puts it, “Even in a trustless system, behavior matters.” Zeru is a startup that’s turning this insight into infrastructure, by building a decentralized reputation layer on-chain.

The idea is simple but powerful: by analyzing publicly available blockchain data, Zeru assigns a reputation score to user wallets based on their on-chain behavior. “We take in all the transactions for a user and pass it through a machine learning model,” Akshay explains. “It describes how the user behaves in a protocol—it’s a behavior-centric neural network.” These scores can then be used by decentralized apps to determine access, security policies, or rewards, enabling smarter, trust-aware interactions across Web3.

Zeru began as a project in June 2022 incubated at Pesu Venture Labs. Initially, the team set out to build a zero-collateral loan platform, allowing users to borrow on-chain without traditional guarantees. But very quickly, they hit a core issue: in traditional finance, unsecured loans depend on knowing whether someone is employed, creditworthy, or trustworthy. None of this data exists on-chain. So instead of trying to build a product on unstable foundations, they decided to lay the foundation themselves—building the reputation infrastructure that the ecosystem lacked.

That decision led them to their current path. Today, Zeru’s Autonomous Verifiable Service (AVS) is deployed on Eigenlayer and backed by over \$2.5 billion in crypto-economic security. Their platform even allows users to verify identity traits like age or citizenship using zero-knowledge proofs—preserving privacy while enabling more meaningful interactions on-chain.

Of course, the journey wasn’t without obstacles. Akshay recalls how the team, still undergraduates at the time, dove into building the product without fully grasping the long-term complexities. In the early days, their advisors suggested launching a token to bootstrap growth. But the 2021 bull market was fading, and



STUDENT STARTUPS

Zeru

the environment had shifted—ideas alone no longer attracted funding or users. They also faced what he calls the “cold start liquidity problem.” For a lending protocol to work, both lenders and borrowers need to show up at the same time. Without initial traction or heavy incentives, that proved nearly impossible. These experiences clarified that the bigger opportunity was in solving the deeper issue of trust.

Asked what he would tell aspiring founders, Akshay is clear: “Build first. Focus on a product. Test it. Understand it. Then go to investors.” He warns against the common instinct to formalize a company before having something that works. Real user insight and traction, he says, give founders an edge that no pitch deck can replicate.

Zeru’s story is one of thoughtful pivoting and solving the right problems at the right time. In a space built on decentralization and anonymity, reputation might just be the missing link—and Zeru is building the tools to make it work.

Aalap.ai

Aalap.ai: Tuning into the Future of Advertising with GenAI

At PES University, innovation thrives beyond textbooks and lectures. One of the most compelling examples of this is Aalap.ai—a student-led startup that’s reimagining how brands connect with people in the digital age.

Founded by Adithya, Anirudh, Ajay, and Likhitha, Aalap.ai is redefining the advertising landscape using the power of Generative AI. Their mission? To make ads feel less like interruptions and more like personalized experiences.

Ads That Sound Like You

Aalap.ai focuses on hyper-personalized marketing by tailoring ad elements—particularly background music—based on each user’s preferences. Imagine two people watching the same Instagram reel from the same brand, but hearing music that feels personally curated for each of them.

STUDENT STARTUPS

Aalap.ai

That's the magic of Aalap.ai. By analyzing individual user data and musical tastes, the platform generates customized audio that boosts user engagement and makes ads more memorable.

This approach is not just about aesthetics—it's strategic. Personalized music increases the likelihood of users paying attention to an ad and, more importantly, **clicking through**. It's a smarter, more intuitive way of enhancing conversion rates in an increasingly competitive digital market.

From Music Education to Market Disruption

Interestingly, Aalap.ai wasn't always about advertising. The idea began during CIE L1, a two-credit course offered by the Center for Innovation and Entrepreneurship (CIE) at PES University. Originally, the team set out to create a tool for helping classical musicians practice and learn using AI. With Anirudh's background in classical music—having played the veena for over 13 years—the team was passionate about building something in the music-tech space.



However, as they progressed through CIE L2 and explored broader applications for their technology, they spotted a bigger market opportunity in the B2B advertising space. What followed was a thoughtful pivot, transforming a music education tool into a cutting-edge AI marketing platform.

The CIE Spark

Much of Aalap.ai's journey can be credited to the supportive innovation ecosystem at PES University. Through collaborative brainstorming sessions, expert guidance, and hands-on experience in the CIE's structured courses, the team was able to evolve their idea, refine their pitch, and build a solution that resonates with real-world needs.

STUDENT STARTUPS

Pocket Coach

We are thrilled to announce that PocketCoach, a startup founded by three final-year Computer Science students from PES University – Achintya Krishna, Anup Prakash, and Omkar Jois – has been selected as one of the winners of the prestigious Startup Karnataka Elevate 2024 program!

This recognition comes with a significant grant from the Government of Karnataka, which will further support the team's vision of revolutionizing sports training through AI and computer vision.

The journey of PocketCoach has been one of remarkable innovation and determination. Prior to this achievement, the team had already made waves by being selected for the Startup India Seed Fund Scheme (SISFS) through IIM Bangalore. Their startup, which began as a capstone project under the mentorship of Dr. Shylaja S. S., has evolved into a promising venture with real-world impact.

PocketCoach's core mission is to transform how athletes train and improve by leveraging cutting-edge technologies. With strong technical foundations and a clear vision, the team has made impressive strides in taking their idea from project to product. They have successfully raised funding, found collaborative partners, and continued to grow under the entrepreneurial guidance of Prof. Sathya Prasad at the Center for Innovation and Entrepreneurship (CIE).

The success story of Anup, Omkar, and Achintya stands as an inspiring example of engineering innovation and student entrepreneurship at PES University, setting a benchmark for future changemakers in the student community.



MEET THE NEWSLETTER TEAM



Natasha Dias

The magic lives close to the edge



Swapnil Kumar

Bringing the buzz with every byte!



Samhita Rao

Quietly plotting something wholesome



Srijita Das

Pixels, Puns and plenty of coffee



Ansh Jain

à la folie



Bhanavi D

i don't chase people anymore... i only run if someone yells 'free biryani!'



Dhriti Kiran

I'm a fast eater but I prefer to eat slow



Diya Saigal

I procrastinate? God forbid a girl has some hobbies



Sneha Verma

Somewhere caught between daydreams and deadlines



Srisht

Ever since I was a kid, I been legit.



Sruthi Mahadevan

Stay nonchalant



Taha B

Contrary to popular belief, I know exactly what I am doing

Contact Us:

Centre for Innovation and Entrepreneurship
(B-Block, 12th Floor), PES University, RR Campus

 <https://cie.pes.edu/>

 @cie.pesu

 Center for Innovation and Entrepreneurship @ PES University

 cieinfo@pes.edu

